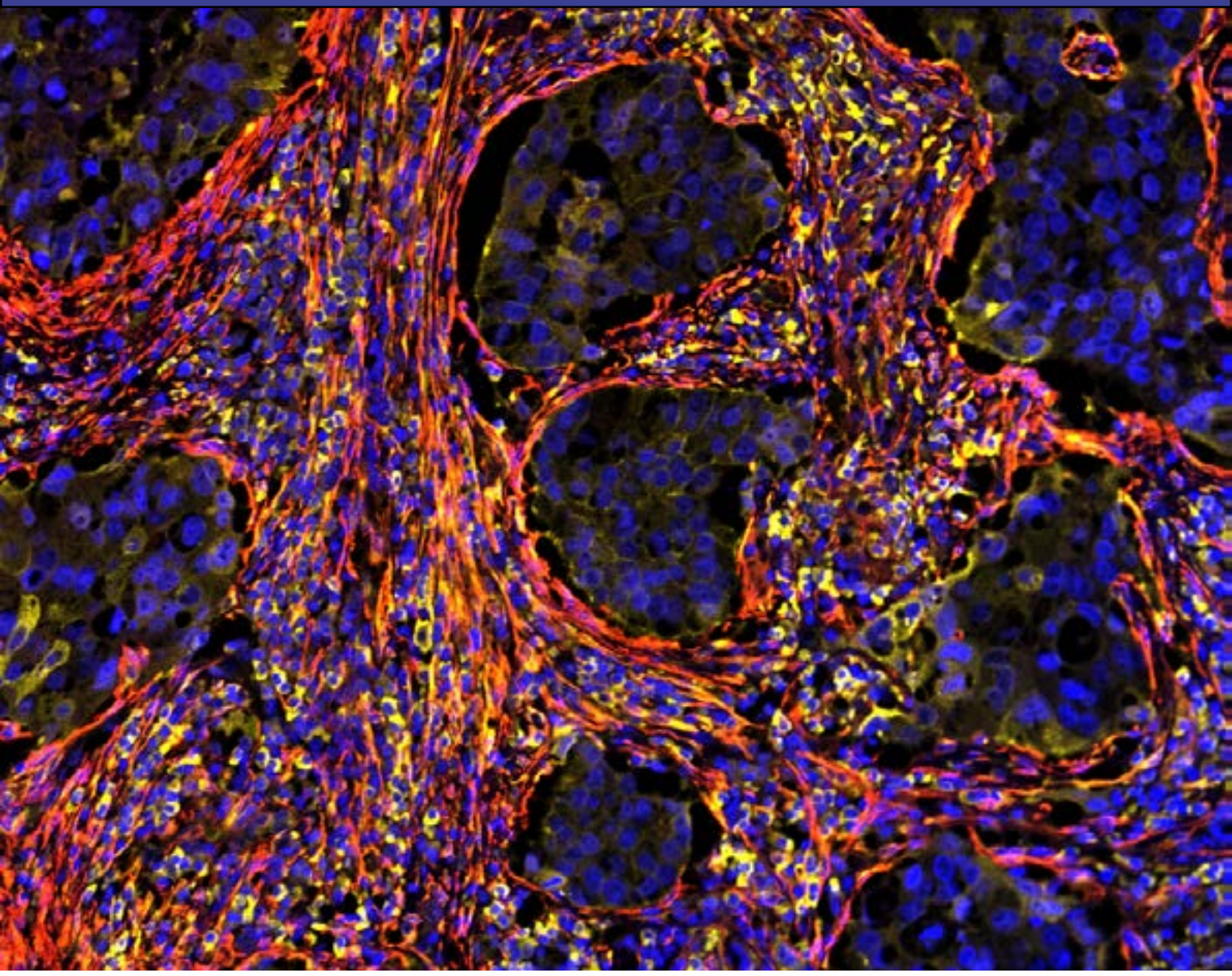
IRE

ISTITUTO NAZIONALE TUMORI

REGINA ELENA

ISTITUTO DI RICOVERO E CURA A CARATTERE SCIENTIFICO



Scientific Report 2019

Confocal microscopy analysis of human lung squamous cell carcinoma stained for the actin cytoskeleton regulatory protein hMENA (yellow), expressed by both the cancer cells and the cancer associated fibroblasts, and for alpha-sma (red), which decorates the cancer associated fibroblasts in the stroma surrounding the cancer cell islets. DAPI was used to counterstain nuclei (blue). The image was acquired with Zeiss LSM 880 with Airyscan confocal laser scanning microscope equipped with a 20X objective

Courtesy of Francesca Di Modugno

Dear readers,
as you may have noticed, this year, in this report, there are less photos compared to the previous years, and, some of them, are a collage of other photos. This change was necessary because of the COVID-19 health emergency occurred at the beginning of 2020, namely when this report was redacted. We hope that you can appreciate this changes and we hope to provide new photos in the report of the next year.

Aknowledgements "The Editorial Organization of this Scientific Report was curated by Dr. Martina Ferrazzano, member of the IRE Grant Office

Contents

Participation to Networks

Translational Research Interest Group

Disease specific Unit

Special Events

Department of Clinical and Experimental Oncology

Department of Research Advance Diagnostic and Technological Innovation

Publications

Clinical Trials

Institutional Courses

CEO MESSAGE
Dr. Francesco Ripa di Meana

Dear readers,

the year 2019 was marked by having achieved major objectives and milestones. It was indeed an intense but extremely satisfying year. One of the first objectives accomplished was the stabilization of 150 high profile researchers and collaborators with a fulltime employment contract, an investment of human capital. The period of major spending cuts is finally over in the Lazio Region and we are now focusing on looking for making new investments towards technological innovation which will aid us in significantly renewing high-tech equipment.

Moreover, we now manage a caring center for women located within Palazzo Baleani, an outpatient unit in the heart of Rome. This centre specializes in caring for women's health, particularly those who are at greatest risk of developing hereditary cancer as well as promoting wellness initiatives and helping those to adopt correct lifestyle practices.

The outcomes just mentioned above have been the results of what we started three years ago. Over the last three years, we implemented a strategic business plan which placed research as the basis and the driving factor for all the diagnosis, treatment and management models, thus redesigning our Hospital's organization, clearly keeping our specialty areas at the heart of our Institute. The strategic research plan was completed thanks also to the suggestions made by the International Scientific Advisory Board that had assessed our research activities. Our strategic research plan was then presented at the retreat held at Villa Mondragone to experts and representatives of the Ministry of Health and the Councilor for Health of the Lazio Region who had encouraged us to continue with our shared research lines for the next three-year period 2020-2022. We also established new and important alliances with the Sapienza University of Rome for the Molecular Tumor Board, and another with the Hospital of Bambino Gesù in order to test Car-T in adult cancer patients. Last but not least, I also must mention the new alliance created with profit companies for the Phase 1 Research Center Activities. In short, a common thread has allowed us to bring together energies already present in a new, stronger and more cohesive manner, in order to open our doors and offer our services to the community.

The results that our Institute has accomplished during this time have not gone unnoticed. Right from the get-go, we felt a great desire for change and a way to work better. Therefore, we put these positive thoughts together and made them become a common feeling. Only with determination did we respond to our Institute's internal needs and with a stronger identity yet greater awareness, did we work together to ground ourselves as a solid and important hub of the regional and national health care service.

In short, we invested in human capital, in technological innovation and in the digitalization processes, as well as in optimizing treatment pathways from PDTAs to Units, to personalized medicine for the benefit of all: specialists, staff and communities. The important events that have involved all of us are proof of this, of which I will only mention a few: the site visit of the Ministry of Health for reconfirming our Institute as a research center, demonstrating excellent results; the National Congress of the Alliance Against Cancer, the Network of Oncology Research centers, organized by the Regina Elena Institute; the Quality day dedicated to presenting projects carried out during the year in the presence of the President of the Istituto Superiore di Sanità; the presentation of the results of the INPS (National Social Security Institute) protocol for the certification of cancer patient invalidity in the presence of institutional representatives.

We also paid special attention to voluntary associations. A large research center naturally devotes attention to the quality of its relationship and assistance to its citizens and stakeholders, therefore works on ways on improving it, knowing that no-one is going anywhere alone. We listen to our citizens needs and their representatives, as well as to suggestions on allowing them to access diagnostic and treatment opportunities not found in many other institutes. We activate and maintain a virtuous circle that naturally increases our ability to do research for the common good. We are the gateway to innovation which also means access to new opportunities and often to new life.

The future is already here. This has been demonstrated by all the diagnostic initiatives implemented over a very short time with the maximum availability of our staff during the first emergency phase for covd19 (the period in which I am writing this short greeting) and that have made us a NoCovid Institute: television and teleconsultations; home deliveries of cancer therapies; listening and support lines managed by our professionals, psychologists and nurses; rapid activation of safety access procedures.

In this way we can continue to work more soundly in the fields of research innovation and assistance organizations, technology, digitization of services and patient empowerment.

Enjoy your read!

Yours sincerely, Dr. Francesco Ripa Di Meana

SCIENTIFIC DIRECTOR MESSAGE
Prof. Gennaro Ciliberto

Dear Readers,

I am writing this introductory message for the 2019 Scientific Report of the IRCCS Istituto Nazionale Tumori Regina Elena in July 2020, after experiencing the first pandemic wave of COVID-19 which has hit our country, while still affecting several other parts of our planet, particularly in North and South America. Our Country has been one of the most affected areas in the last 3-4 months, in particular Northern Italy. The tough lockdown measures that were implemented have greatly impacted Italy's activities with severe financial implications that will have long term repercussions. Almost 35.000 people have died from the consequences of this infection, the majority of them due to having comorbidities such as hypertension, obesity, and cancer.

Clearly, the research world has suffered implications from this halt in laboratory activities as well as limited direct contact with scientists, cancelled one-on-one meetings and congress participation, which was only in part mitigated by video-conferences and web-meetings. Our hospital responded swiftly and promptly by re-modulating activities, and placing strict measures for cancer patient access in order to ensure a COVID-19 free status and a safe environment for our patients and our staff. We can now safely say with pride, that we have been able to maintain a COVID-19 free environment, through strict measures implemented by the internal Crisis Unit, and have quickly resumed clinical care activities at full speed. We have also taken this time to re-organise ourselves to provide more efficient services to our patients also through the use of telemedicine and teleconsult as additional measures to ensure continuity of care while preserving safety. I would like to express my thanks to all scientists, both senior and junior, who have continued to provide their support during the last few months to our research either by continuing to carry out experiments in the labs during this difficult time or by smart working.

In reference to the main achievements accomplished in the year 2019, one of the first aspects I would like to highlight is the long sought stabilization for fulltime employment process involving our young workforce of researches and support personnel, called "Piramide dei Ricercatori" which took place in two waves. The first one took place at the end of year 2019 and the second one in April 2020, which involved approximately 150 workers from our Institute alone. This process now guarantees unprecedented stability and a career path to several people who had worked for several years and for some decades at our institute without having any future prospects. I am delighted that this process has been successfully accomplished and hope to soon start offering open tenders to hire additional researchers to join our "Piramide dei ricercatori".

Our scientific productivity for the year 2019 has maintained virtually the same level as the previous year with a similar number of total publications, and total Impact factor, although when converting to a normalized impact factor using the parameters determined by the

Ministry of Health, there has been a slight decrease. Most importantly, the number of clinical studies approved by our Ethics Committee has increased in comparison to 2018, together with the number of patients enrolled in interventional clinical trials. Although these last data are encouraging, there is still a large growth margin in our clinical experimental efforts reflected by the fact that our Phase I facility is still largely underutilized because of the still relatively small number of active studies. There is strong hope this may change in the near future due to the establishment of a dedicated UOSD Unit for Phase I and Innovative Trials in 2020 as well as completing the process to become AIFA accredited promoters of no-profit Phase I studies, also expected by the end of year 2020.

At the beginning of 2019, we launched a big internal effort to define a strategic plan for research following the recommendations received by the International Scientific Advisory Board at the end of 2018. The effort involved several researchers and staff at the Institute. A first draft of the Plan was presented at the May retreat in Villa Mondragone. The feedback received in that occasion was important in refining the plan later on during the year and to share it with the Strategic Directorate of the Institute and the CIV. The Strategic Plan was officially launched in January 2020 and has a three years term, from 2020 to 2022. It represents a big opportunity for our Institute to increase our growth and visibility over the next few years. The plan, whose main features are summarized later in this Scientific Report in a dedicated section, has the primary goal to define the main trajectories of our research and to indicate our priorities for the next few years. In this context, as highlighted in the text, the activities of our Translational Interdiscliplinary Groups have continued as well as their productivity. These Groups are instrumental to executing individual elements of the Strategic Plan.

I hope you will enjoy reading our Scientific Report for the year 2019

Yours sincerely, Prof. Gennaro Ciliberto.

SCIENTIFIC DIRECTOR OF SAN GALLICANO INSTITUTE MESSAGE

Prof. Aldo Morrone

Dear Readers,

in my role of Scientific Director of San Gallicano Institute I feel very privileged to share with you my view on the growing synergistic collaboration with our sister institution, Regina Elena Cancer Center. One of the main lessons we have learned so far from fighting complex diseases, including cancer is that the free sharing of ideas, the complementarity of diverse expertise, the building of common advanced technological platforms, the engagement in cooperative research programs are all together fundamental for the implementation of successful therapeutic strategies. Currently, our daily life as both social and scientific community has been dramatically subverted by the pervasive diffusion of SARS-CoV-2 infection. Both cancer and COVID-19 are globally devastating illnesses which are challenging dramatically our community as worldwide entity. Indeed, more than 18 millions of people have been diagnosed for cancer and more than 9 millions of cancer deaths have been recorded in 2018. To date, almost 19 millions of SARS-CoV-2 infected people with 750 thousand deaths have been annotated worldwide. COVID-19 aggressiveness is exacerbating frailty that includes elderlies, cancer patients, homelessness and all those people suffering global illness. Its diffusion runs faster than any prevision, second wave infections have already taken place in diverse continents including Europe. This requires an unprecedented effort, which calls in action governmental decisions re-shaping the entire national and international health programs.

Our sister institutions, Regina Elena and San Gallicano whose strategic mission consists of Care, Cure and Research are heavily involved in facing both cancer and COVID-19 pandemic. Despite the severe limitations due to COVID-19 infection, which also halted active clinical trials and re-scheduled those approved but not yet enrolling patients, we followed very closely our patients implementing telemedicine and providing therapy at home, meanwhile emergencies were treated as required, upon strict anti-COVID-19 surveillance.

As soon as Regione Lazio required our support to monitor COVID-19 diffusion within its territory we provided our expertise and structures to fulfil promptly and properly the specific requirements.

Last but not least, we are actively pursuing cooperative research programs aimed to contribute to the deciphering of the molecular determinants underlying SARS-CoV-2 infection with a special focus on frailty including not only cancer patients. Intramural collaboration allowed both Regina Elena and San Gallicano Institutes, to be part of large national consortia devoted to plan either the identification of specific biomarkers or the repurposing of specific drug treatment for SARS-CoV-2 infection. The enthusiasm and the competence of 150 stabilized researchers have been an extraordinary added value to the institutional scientific community.

Collectively, this has been reached thanks to the virtuous and synergistic support of the Minister of Health and of Regione Lazio, to an accurate and timely institutional leadership, to the passion and devotion of the entire institutional community and to the patients who believe that our Care, Cure and Research activities are always on service for fighting clinical unmet needs.

Looking forward to your constant advice,

Yours sincerely, Prof. Aldo Morrone

MEDICAL DIRECTOR MESSAGE

Dr. Branka Vujovic

Dear Readers,

I have been the Corporate Health Director of the IRCCS IFO since 2017. In the last year I was dedicated to improve the settings and organization of IFO, connecting more than in the past the Regina Elena Institute and the San Gallicano Institute.

In addition, my attention was also focused on the following general objectives:

- Support patient-centered care in every care unit;
- Promote the multidisciplinary and multi professional approach;
- Encourage the integration between research and clinical practice, also through the work of translational research groups,

The above objectives remain constant over time and across the two Institutes.

The Regina Elena National Cancer Institute, for a Corporate Health Director, is an opportunity to be continuously challenged in knowing how to combine both passion for research of care teams and to carry out activities concerning the clinical governance. In 2019, much attention was paid to design and make evident the organizational evolution in the New Organizational Act, approved by regional Government, focusing on the role Regina Elena Institute plays within the New Act.

The main operational objectives pursued and implemented in 2019 were addressed to organizational design, processes reorientation, quality development, excellences outcomes.

The first goal was to increase existing Disease Management Teams and expand on the clinical conditions assessed, and patients cared for, treated and followed over time in a multidisciplinary manner. Additionally, one of the most important part of our development has been to offer advocacy and provide more visibility to the professional groups dedicated to the diagnosis, management, follow-up of patients with rare tumors and rare diseases or to sustain some specific activities: liquid biopsy, robot surgery and so.

Other goals were:

1. To create opportunities for the visibility of the intellectual and professional resources of doctors, biologists, psychologists, nurses, technicians and other health care staff present in the Regina Elena Institute and IFO;
2. To develop requirements in Clinical Governance, Risk Management and Quality Certification in all clinical settings, administrative and staff units and in research laboratories;
3. To increase the actions of Hospital Acquired Infection Committee (CCICA) through institution of antimicrobial stewardship;
4. To increase the risk management actions through implementation of “lean & safety” methodology which focuses on the continuous improvement of safety and prevention of clinical risk
5. To activate the "Institutional working group for patient's centrality", which aims to identify a series of activities that see the active involvement of the patients in the clinical pathways, in research and education

6. To develop the Phase 1 experimental activities and the Clinical Trial Center;
7. To be certified in operating the Biobanks, in order to make patient care possible, and draw on research in the field of cancer genomics;
8. To support the processes reorientation to get more efficiency from our technostructure units.

Throughout 2019, the Corporate Health Office also pursued the objective of facilitating access to health care, redesigning the "Access Model" after adopting the "Lean" approach for changing management.

Yours sincerely, Dr. Branka Vujovic

ADMINISTRATIVE DIRECTOR
Head: Dr. Laura Figorilli

Staff

Nicoletta Avitabile
Santina Paola Cocuzza

The Administrative Officer manages and coordinates the administrative activities of the entire Institute, and considers the independence of each departmental unit (UOC). Furthermore, they have the responsibility of facilitating the strategic planning process along with setting up the conditions in order to verify efficiency, effectiveness and quality of the administration activities of the Institute.

The Administrative Officer works side by side the General Director in the administrative, financial and organizational management of the Institute, ensuring that all the necessary administrative interventions are implemented in order to carry out the activities of all the structures within the Institute. The Administrative Officer is also responsible for guaranteeing transparency and the regularity of all administrative activities. The Administration Officer provides their approval of the deliberative acts that are proposed by the Departmental Directors (UOC) and are adopted by the General Director

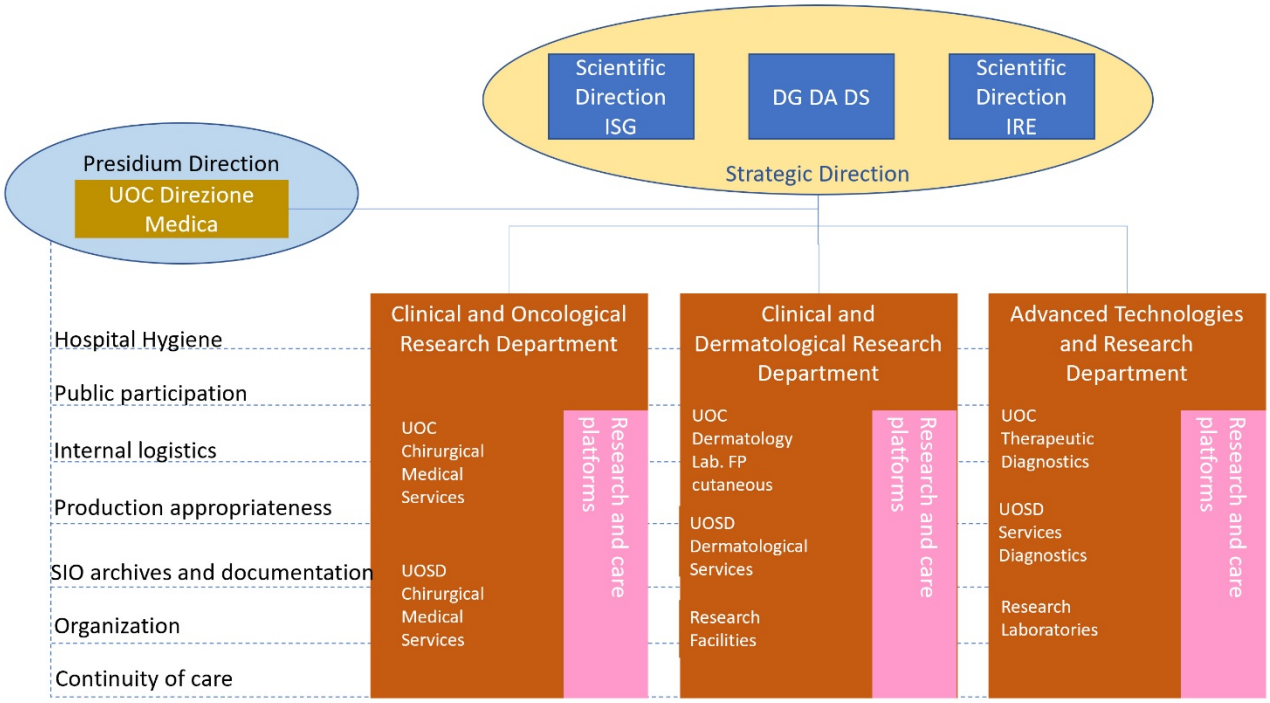
The Administration Office deals with all the technical/ administrative activities supporting health care services and both Scientific Directions concerning research matters.

The Administrative Officer:

- As a member of the Strategic Management, plays an active part in IFO's decision-making processes, such as establishing strategies for corporate development and innovation programmes, setting priorities and allocating resources to the various corporate functional areas;
- Ensures the integration and harmony of administrative procedures of all the organizational structures of the institute, as well as leads the activities of the administrative organizational structures, promoting innovation and development;
- Works closely with the Chief Medical Office toward developing new forms of integration between clinical and research areas;
- Collaborates with the regional structures involved in the various business processes;
- Cooperates with other health care structures within the territory for developing and producing a synergistic network for the healthcare system.

Yours sincerely, Dr. Laura Figorilli.

ORGANIZATION CHART OF ISTITUTI FISIOTERAPICI OSPITALIERI – IFO



QUALITY, ACCREDITATION, CLINICAL RISK MANAGEMENT (QUARC) UNIT

HEAD: DR. ASSUNTA DE LUCA

MISSION

To improve integration between health professionals directly involved in care, assistance, research and the administrative component in order to better understand what are the improvement initiatives to ensure "quality" and "safe" care.

In particular, the Unit QuARC:

- Defines the areas for the elaboration of Protocols, Procedures, Operating Instructions according to Evidence Based criteria;
- Coordinates the study groups set up for the elaboration and dissemination of shared responsibility tools based on Quality Management System (QMS)
- Adopts and implements the clinical risk management process for medical, nursing, technical health, rehabilitation, research and support (administrative) activities with the involvement of health and non-health professionals;
- To contribute to the verification and evaluation of the Quality System in accordance with the UNI EN ISO 9001 Certification and other Accreditations processes as OECI, JACIE etc;
- Propose organizational models aimed at preventing clinical risk.

MAIN ACTIVITIES 2019

- Maintained UNI EN ISO 9001:2015 certification for all IFO (clinic, research and administrative units),
- Maintained National Italian Transplant Centre certification for Ovarian tissue and fertility preservation Bank and for Skeletal Muscle Tissue Bank
- Supported Joint Accreditation Committee ISCT- Europe & EBMT 0ACIE) accreditation for Ematology Unit
- Implemented all activities of "Annual Risk Management Plan - PARM" for 2019
- Elaborated and implemented the Annual Plan for Prevention and Control of Hospital Acquired Infectious disease - PAICA
- Educational and training program which consists of:
  1. Residential course (theoretical-practical) on quality system and risk management repeated in several editions, for the QuARC" local referents and health personnel
  2. On-the-job training in the individual departments/ services through the application of the tools quality proactives (FMEA, Cynical Audit, M&M review)
  3. Training on the Quality System instruments and dissemination of procedures that implement the recommendations of the Ministry of Health on "sentinel event" with repeated meetings with the "QuARC local referents" and the health care staff with explanation of the recommendation and its simulation.

RESOURCES

The QuARC Unit is made up of a medical hygienist, a nursing coordinator with proven experience in quality and clinical risk management, a nurse dedicated to the management of healthcare-

acquired infections (HAis) and an administrative expert in the management of the incident reporting information system (SIMES) and of the monitoring flows of adverse events and of all administrative support activities in the Unit.

The QuARC Unit spreads the culture of QUALITY and of a correct management of the CLINICAL RISK through the "IFO network for quality and safety of care" composed by "local referent" for each IFO's service (clinic, research and administrative).

PHARMACOVIGILANCE
Head: Dr. Felice Musicco

Staff

Angela Frazzetto, Pharmacist
Annamaria Di Filippo, Pharmacist,
Agnese Persichetti, Clinician

Mission

- Supporting and promoting reports of suspected drug adverse reactions (ADR); Activities in clinical wards to promote ADR reporting with doctors, nurses, technicians, etc.
- Monitoring safety of medicines: collect, assess, report, and analyze adverse events
- Registering and updating ADR reports in the National Network of Pharmacovigilance (Rete Nazionale di Farmacovigilanza RNF- AIFA) also in collaboration with QPPV of Pharmaceutical Industry and the Lazio GLASS pharmacovigilance regional group
- Review of research study protocols, pharmacovigilance section
- Reporting ADR in research studies as Registered PV person in EMA for IFO
- Member of the Lazio Regional Panel for Pharmacovigilance
- Member of the Lazio Regional Committee for Drug Uses

Clinical Activities

- Number of ADR reports registered in RNF: 118 (59 events in 2019)
- Drug safety information to doctors: highlight and internal transmission of alerts published by regulatory agencies (EMA, AIFA)
- Hospital reports, guidelines, procedures:
    - Participation in OECI and other certification activities

Research Activities

- Preparation and review of the pharmacovigilance section in 2 interventional and 3 observational study protocols
- Principal Investigator Observational study "Nivolumab and Pembrolizumab in real life in advanced metastatic melanoma: observational study about effectiveness and safety"
- XVIII Symposium of the International Society of Oncology Pharmacy Practitioners, 10–13 October 2019, London, UK Platform Presentations Plenary 001 Real-world clinical outcomes in metastatic breast cancer patients treated with palbociclib Felice Musicco et al. J Oncol Pharm Practice 2019, Vol. 25 8(Supplement) 1–116

Pubblication

1. Belleudi V, Rosa AC, Musicco F, Marchetti P, Martini N, Andriani A, Calamia, T,Addis A. [Appropriate use of trastuzumab in Lazio Region: therapeutic scenarios and estimation of possible savings for the Regional Health Service.]. Recenti Prog Med. 2019 Dec;110(12):604-614. doi: 10.1701/3278.32519. Italian. PubMed PMID: 31909763.
2. Lasala R, Santoleri F, Romagnoli A, Musicco F, Costantini A. Dosage adjustments in pivotal clinical trials with oral targeted therapies in solid tumors conducted in Europe. Eur J Clin Pharmacol. 2019 May;75(5):697-706. doi: 10.1007/s00228-018-02621-w. Epub 2019 Jan 8. PubMed PMID: 30617511.

EDUCATION AND TRAINING UNIT
Head: Dr. Tiziana Lavalle

The IFO, as a Healthcare Company, has been identified by AGENAS (National Agency) as provider no. 1270 for Continuing Medical Education (CME) both for residential methodologies (RES) and, since June 2018, for field training methodologies (FSC). The I.F.O. has an Education Area "Raffaele Bastianelli", which houses 3 classrooms, respectively of 199, 90, 50 seats and the Training Service is made up of 1 manager and 4 collaborators, two with a health-care profile, two with an administrative profile.

The Budget made available to the Training Service was € 320,000, to be used for internal and external training events, internships and for the management of the activities supporting training events in the Education Area "Raffaele Bastianelli".

In 2019, the Company Training Plan (PFA) was approved with resolution no. 173 with a schedule of n. 178 training events, to which were added the events gradually created as business needs.

In 2019 has been concluded no. 135 CME accredited events, of which 55 scheduled with a

single edition, 32 scheduled with a total of 55 re-editions and n. 25 extemporaneously requested. All courses produced 881 hours of training attended by 980 professionals.

The events took place at the "Raffaele Bastianelli" Education Area, at the Patient's Library computer room and other Meeting Rooms for small groups.

The Training Service of IFO managed, cooperating with the Scientific Direction, internship and fellowship for 84 students of eight Universities.

OFFICE OF RESEARCH ADMINISTRATION (SAR)

Head: Dr. Cinzia Bomboni

Staff

Giovanni Cavallotti
Maria Assunta Fonsi
Giuseppina Gioffrè
Annalisa Marini
Samantha Mengarelli
Catia Minutiello
Gabriella Nasini

Mission

The Research Administration Office (SAR) provides administrative support to the Scientific Directorates and researchers of the Regina Elena Institute and the San Gallicano Institute by carrying out the following activities:

- Approve/ modify/disapprove protocols of paperwork and storing all documents electronically;
- Prepare administrative procedures for creating and establishing research agreements, managing all expenses relating to funding from the Ministry of Health (Ricerca Corrente) and research funding from specific targeted projects (Ricerca Finalizzata) and related reporting;
- Create administrative procedures for drafting conventions regarding clinical trials and projects approved by the Ethics Committee and related reporting;
- Coordinate Conto Capitale Grant funding measures;
- Prepare administrative procedures for employing research collaborators and administrative support staff through flexible contracts funded by research grants;
- Manage reimbursement of various types of expenditures for both permanent and non-permanent staff (missions, publications, staff development courses, etc.);

This office is under the supervision of the Administrative Director of the Institute where it carries out all assigned tasks as well as liaising with the Human Resources Unit, Economic Resources Unit, the Decision Making Acts

Department, Occupational Medicine, in addition to the various Project Managers of specific targeted funded projects.

Activities

During 2019 the SAR dealt with managing the administrative and economical aspects of public and private research projects funded by the Regina Elena Institute (IRE).

The SAR handled the administrative and accounting procedures of all expenses concerning Ricerca Corrente 2019 funding (€ 3.743.955,58) for IRE and prepared the economic report for Ricerca Corrente 2018 funding (€ 3.372.599,57). This office also handled Ricerca Finalizzata funding for a total of € 4.866.916,95.

In the same period, the SAR Office was appointed Coordinator of the Conto Capitale procedures and responsible for following up on all the procedures between the Services involved making sure all steps in process are done accurately. In particular, during 2019 SAR worked to prepare the appropriate documentation for the budget adjustments, for the intermediate or final financial reports of 7 "Conto Capitale" projects, realized with grants of Italian Ministry of Health, relating to the funding Calls of years 2010, 2011, 2014, 2015, 2016. The SAR office has assisted the Scientific Direction in the Agreement procedures about grant of the "Conto Capitale" 2018 call.

The SAR office also signed the provision of onerous agreements (within the scope of approved projects) and free of charge license agreements. During 2019, the SAR continued to manage projects from previous years, handled more than 170 projects and supported new projects in regards to budgets and new applications. For all the funded projects listed above, the SAR office followed through with all the administrative procedures concerning related expenditure.

In summary, during the 2019 the following activity were performed:

1. Reforming, analyzing and implementing a recruitment legislative framework;
2. Stabilization of Personnel with a subordinate TD Contract, for Research and Support (L. 205/2017, art. 1, Section from 422 to 434).

GOODS AND SERVICES ACQUISITION UNIT

Head: Dr. Giovanni Paolo D'Incecco Bayard De Volo

The Goods and Services Acquisition Unit deals with suppliers and providers for the needs of the patient in hospital for what concerns medical device, medications, reagents, laboratory materials, laboratory equipment.

Staff

Cristina Corsi
Zoe Tonda
Carol Sciascia
Giovanna Surace
Gabriella Ingrosso
Anita Fiumara
Cinzia La Padula
Giovanni Ricci
Fabrizio Gatto
Tiziana Chiari
Massimiliano Romano
Angela De Simone
Antonio De Paolis
Domenico Fiorillo
Gianluca Murru
Piera Brugnoli
Barbara Filipponi

The staff is organized in four different purchasing areas: medical device; medications, reagents and laboratory materials, bursar, and an independent purchase section dedicated to the research. This section deals with the purchasing for the "current and finalized" research. It is funded by public and private entities, and by the European Community. Around a thousand procurement procedures are executed every year

CONTROL AND VERIFICATION BOARD
Head: Prof. Paolo Marchetti

Staff

Prof. Antonio Addis
Prof. Stefano Alemà
Prof. Alfonso Celotto
Prof. Pier Giorgio Natali

Mission

Article 4 of the Regional Law N. 2/2006 legislates that leadership and guidelines functions are a responsibility of the Control and Verification Board (Consiglio di Indirizzo e Verifica - C.I.V.). The board consists of five members selected according to their expertise. The Board's chief officer is appointed by the Regional President and the Ministry of Health jointly. Three members are elected by the Regional President and one more is chosen by the Ministry of Health. They remain in office for five years.

I.F.O.'s present Control and Verification Board has been appointed by the Ministry of Health and Lazio Regional President through protocol 1546 of 19 February 2019 and Regional Decree N. T00146 of 12 June 2019. With resolution N. 604 of 2 July 2019 I.F.O. accepted and transposed the appointment of the Board.

The Control and Verification Board determines the direction and objectives of the Institute's activities on an annual and multi-annual basis and verifies all activities carried out and the results achieved by each Department

PRESS OFFICE & PUBLIC RELATIONS

Head: Dr. Lorella Salce

Staff

Simona Barbato, press officer, website editor, social media editor, corporate identity referent
Francesco Bianchini, social media referent, videomaker
Daniela Renna, administrative collaborator, corporate identity referent
Mauro Di Giovanni, photographer
Ivana Zardin, photographer

Press office activities

- Communication strategy and plan
- Corporate identity and brand communication;
- Public Relation
- Media relations management: press releases, press conferences;
- Website: managing content, updating press section and news;
- Managing tv, radio and press interviews;
- New media communication (Facebook, Twitter, YouTube, Instagram);
- Digital press review

Annual activities report

Press releases 2019	39
Agency launches 2019	200
Mass media presences 2019	1245 (newspaper, magazine, radio, tv)
News and internal communication items (mail everyone, closed-circuit tv, design a brochure, pamphlets, leaflets, infographics, signage, etc) 2019	500
Facebook (10.785 followers)	560 posts; 2.9million views
YouTube	315.000 views, 848.000 minutes watched
Twitter (1188 followers)	650 tweets, 710 mentions, 1057 retweets, 650.000 views
Instagram (1133 followers)	170 post, 130.000 views
Linkedin (3200 followers)	156 post, 150.000 views
Telegram	110 messages

Here are some of the public communication campaigns, web project of 2019

Public Awareness Campaigns

- World Cancer Day (social media campaign). February
- International HPV Day (social media campaign). March
- 5x1000 campaign for the collection of the 5 per thousand tax option from taxpayers (a governmental initiative whereby for every thousand paid by a taxpayer). April to July
- Women's Health Day initiatives. May

- The European Researchers' Night initiatives: “LinkedIn Learning Courses”, “Theatrical Event” September

Awards

- “Uno sguardo raro” - Rare Disease International Film Festival, award for Healthcare Communication. February
- “La Rosa d’Oro” National Journalism Award winner. March

Public communication and press office

- Liquid biopsy study results announcement. April
- Conference for the presentation of the latest generation confocal fluorescence microscope. July
- ISO 9001:2015 Certification Announcement September
- Molecular Tumor Board announcement:
    - International Workshop on Cancer Genomics. April
    - Agreement between IFO and Sapienza University. September
- Quality Day: communication and event organization activities. December
- Conference on “Oncological Invalidity Certificate”: agreement between IFO, INPS, Lazio Region. December

Web project

- Putting the new website online August

IRE SCIENTIFIC DIRECTORATE

Staff

Prof. Gennaro Ciliberto, Scientific Director
Carmela Matrascia, Scientific Direction Secretariat
Tania Merlino, Scientific Direction Secretariat
Pina Gioffrè, Scientific Direction Secretariat
Federica Falcioni, Clinical Trials Office
Cecilia Fagioli, Clinical Trials Office
Martina Ferrazzano, Grant Office
Marco Canfora, IT

There is an organizational structure specifically for research and development in oncology which culminates in the office of the Scientific Director

The Scientific Director to accomplish his goals 1s supported by the Scientific Directorate Offices:

Secretariat

The secretariat office supports the Scientific Director in carrying out the function of coordination and promotion of research.

Library

The Institutional library accomplishes the following duties: provision of scientific documentation; bibliographic researches at the request of healthcare professionals; training services for the use of electronic resources also with personalized mini-courses for institutional users and for patients and families; management and updating of the bibliographic patrimony; collection for archiving of institutional publications; collaborates in the generation of the yearly report of research productivity (publications) to the Ministry of Health (Research Workflow)

Grant Office (GO)

The activities of the IRE GO are: communication, promotion, support and centralization of project submission procedures. The GO manages and coordinates all project submission activities with the aim of promoting productivity and competitiveness of research. Every year on average the GO supports and coordinates more than 100 applications to competitive grants, Furthermore, the GO helps coordinating the generation of the yearly report of research productivity to the Ministry of Health.

Technology Transfer Office (TTO)

The Technology Transfer Office (TTO) operates within the Scientific Directorates and cooperates with the IFO Patent Committee established by resolution no. 725 of 01.08.2016.

The TTO brings together the researchers' inventive proposals, promotes their protection and technology transfer. To this end, it assists and supports researchers in the management of intellectual property, from the start of the patenting

process to external licensing or, alternatively, to commercial exploitation.

Clinical Trial Monitoring

Provides support during the activation, management, reporting and data processing of clinical trials; manages IRE clinical database trials/SMART clinical trials platform; generates the yearly report of clinical research activity (number of active clinical trials, number of patients involved, etc.) to the Ministry of Health (Research Workflow).

IRE Biobank - BBIRE

BBIRE is an oncological biobank established with the main purpose of supporting medical-scientific research by providing high-quality biological samples, accurately annotated, necessary for carrying out research aimed at improving the characterization of different types of neoplasms and at the identification of new prognostic factors related to the development and metastatic dissemination of tumours. BBIRE participates in the National Network of Oncological Biobanks "RIBBO" and in the European infrastructure of Biobanks and Biomolecular Resources "BBMRI-IT" (Italian Node of the European Biobanking and Biomolecular Resources

Research Infrastructure). In the last years BBIRE has grown up to collect more than 11.000 tumor samples and more than 48.000 body fluid samples samples from cancer patients, which are available, upon request to a steering committee, for research purposes.

Clinical Trial Center - CTC

The Clinical Trial Center (CTC) is an organizational Unit shared between Istituto Nazionale Tumori Regina Elena and Istituto Dermatologico San Gallicano, that centralizes and unifies the coordination and monitoring of clinical trials, with the aim of providing management, methodological and biostatistical services to researchers, also promoting collaboration between them. Data Managers and Research Nurses supporting clinical trials are managed centrally by a CTC coordinator. Within the CTC is located the Secretariat of the local Ethical Committee. CTC provides a support, to the internal operating units, for the entire clinical trial process.

Technical-Scientific Committee - CTS

The CTS is an advisory and a supporting body for the clinical and research activities of the Institute and is chaired by the Scientific Director of IRE. According to Regional Law 2/2006 art. 9, is composed of ten other members appointed by the Board of Directors. The CTS is informed in advance of the scientific objectives by the Scientific Director and evaluates the annual report on scientific activity.

Experimental Research activities are carried out in the Department of Research, Advanced Diagnostics And Technological Innovation Department

MINISTRY OF HEALTH RESEARCH LINES

In accordance with the priorities indicated by the "Programma Nazionale della Ricerca Sanitaria", every three years the Ministry of Health approves the research activities of the IRCCS. With the "decreto direttoriale" of 8 June 2018, registered at the "Corte dei Conti" on 9 July 2018, the priorities for the research activities of the three-year period 2018-2020 have been approved. These priorities also include those of IRE, within its area of recognition, oncology.

In the period 2018-2020 the current research activity of the IRE, was organized according to the following five different lines of research whose objectives are listed below.

Line 1: Cancer prevention and early detection

- Responsible persons: R. Falcioni, V. Stigliano
- Active projects: 13
- The mission of this Line is the identification and elucidation of the mechanisms that contribute to the risk of developing cancer, the characterization and validation of new biomarkers of susceptibility to cancer, and the development of methodologies capable of increasingly anticipating the diagnosis of cancer in subjects and/or populations at risk. Primary prevention intervenes on healthy subjects and is based on the identification of risk factors, the assessment of exposure to these factors and their modification. Secondary prevention intervenes on sick people, identifies the disease at an early stage, asymptomatic, susceptible to immediate and effective therapeutic intervention. The advent of advanced technologies, genetic characterization and molecular classification, make the prognostic stratification of tumors and early detection of cancer increasingly possible. The perspective of this Line is therefore to carry out research activities aimed at educating new diagnostic and/or behavioural procedures aimed at cancer prevention, improvement of health status and cancer control. At present, the existence of innovative molecular and instrumental diagnostic techniques makes it possible to make an early diagnosis of the tumor and to define the molecular characteristics that influence the therapeutic approach and prognosis. Fundamental elements for the success of the Line are: (A) access to biological materials from subjects predisposed to the onset of tumors due to hereditary family causes, or environmental factors; (B) multidisciplinary experimental approaches that take into account bio-molecular, epidemiological, nutritional, virological, radiodiagnostic, endoscopic, clinical and surgical expertise.

Line 2: Cancer immunoterapy

- Responsible persons: A. Venuti, V. Ferraresi
- Active projects: 11
- The "Cancer Immunotherapy" line includes the activity of translational pre-clinical and clinical research, aimed at: improving the knowledge of anticancer immunological mechanisms; immunoevasion processes including those mediated by the microenvironment; optimizing the generation of vaccines, engineered T cells and the use of new molecules and immunomodulating strategies. Research is also based on the characterization of tumor-specific antigens and the analysis of the molecular/immune profile (immunoprofiling) of the individual patient. Finally, this Line is designed to identify new combination approaches to optimize therapy and better manage associated toxicity. It is increasingly evident that all anti-neoplastic therapies require activation of the host immune system to be effective, as historically demonstrated for CT and RT. Cancer immunotherapy represents the fourth approach to cancer treatment, together with surgery, RT and CT/biological therapy. It is a therapy that instructs and/or reactivates the cells of the immune system so that they can recognize and eliminate cancer cells. Tumors alter the immunocompetence of the host, triggering phenomena of immune resistance, in particular the functions of tumor-specific T-cells. Since many immunological checkpoints are triggered by receptor and ligand interactions, effective immunotherapies based on blocking these interactions by antibodies have developed. The identification of predictive biomarkers of response to immunotherapy is a further fundamental information to direct the clinician towards a personalized treatment. The characterization of tumor antigens has made it possible to conceive therapeutic vaccines but the need to design more effective vaccination therapies remains. At the same time, the molecular study of TCR allowed to engineer T cells with anti-tumor activity to be reinfused in the patient, although of problematic clinical applicability. Therapies with checkpoint inhibitors are effective but the identification of predictive response biomarkers is critical to select the patients most likely to benefit by limiting side effects. Fundamental elements for the success of the line are the biobanks and the use of samples from subjects at risk of cancer due to genetic, dietary, behavioural, environmental and occupational causes, and the multidisciplinary approach that includes biomolecular, immunological, virological, epidemiological, nutritional, radiodiagnostic, clinical and surgical expertise.

Line 3: Personalised and precision medicine in oncology

- Responsible persons: P. Giacomini, F. Marchesi
- Active projects: 16
- The knowledge of the molecular mechanisms involved in tumor pathogenesis and progression has allowed the development of innovative therapies based on the use of agents able to specifically interfere with the cell pathways responsible for the growth, survival and progression of cancer cells. This approach has been defined as personalised medicine as well as precision medicine, if a precise interaction/correlation between the administered drug and the presence of its molecular target in the tumour can be identified. The line "Personalized Medicine and Precision in Oncology" deals with research activities that aim, in the pre-clinical and clinical field, to..: 1) Identify the prognostic and/or predictive relevance of genetic and epigenetic alterations of the tumour that can be exploited as potential therapeutic targets; 2) Study the role of intra-tumour heterogeneity in the response to molecular target agents; 3) Develop methods of analysis to follow the molecular evolution of tumours both in tissues and in the blood (e.g. The rationale of this line of research lies in the fact that identifying the possible mechanisms of primary and acquired resistance; 4) systematically biobank cancer samples and longitudinal biological fluids using standardized and reproducible methods; 5) develop clinical trials with molecular target drugs in patient populations identified by suitable biomarkers. The rationale of this line of research lies in the fact that identifying the biological alterations of individual neoplasms makes it possible to use targeted and effective therapies. Therefore, studies will be conducted to: (i) implement personalised therapy protocols in patients with progressive/metastatic disease; (ii) identify markers of intrinsic and acquired resistance to molecular target drugs; (iii) identify new diagnostic strategies for early diagnosis and prevention, and for anticipating/redirecting relapse/progression; (iv) identify new therapeutic strategies to block the processes of tumour invasion, progression and metastasis; (v) facilitate the transversal repositioning and use (drug repositioning/repurposing) of known drugs; (vi) identify new molecular target drugs; (vii) rapidly apply and transfer the above to clinical practice in oncology, acquiring innovative know-how and technologies where necessary.

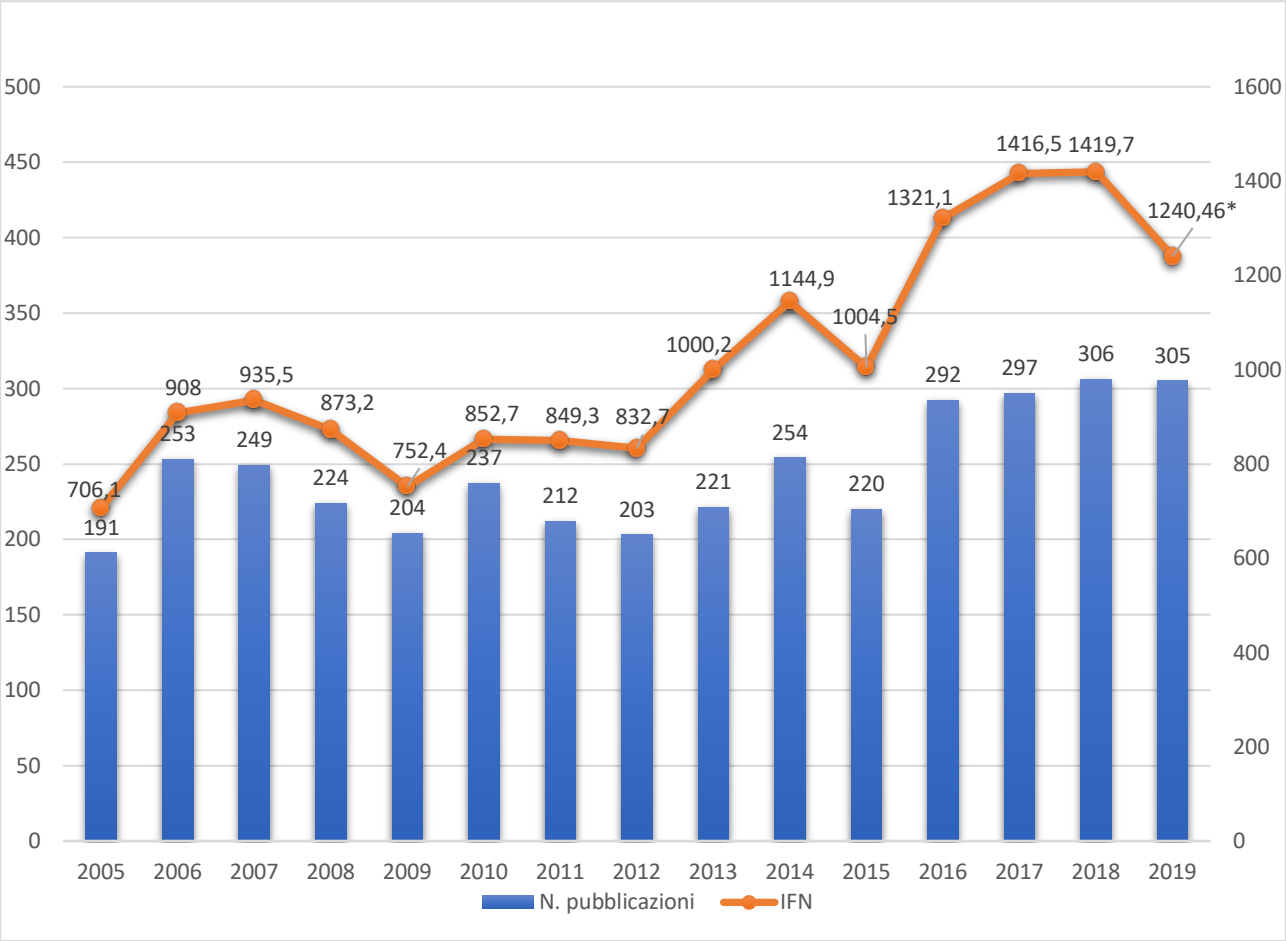
Line 4: Innovative approaches and technologies in diagnostics and therapies

- Responsible persons: A. Vidiri, G. Simone
- Active projects: 18
- This Line bases its assumptions on the use of innovative diagnostic approaches and technologies, functional imaging and/or molecular methodologies, and the effectiveness of minimally invasive and multimodal/integrated treatments that now represent the standard therapeutic approach for many types of cancer. Technological advances in bio-molecular research, imaging, minimally invasive surgery, radiotherapy and new oncological target therapies require increasing efforts towards a more accurate diagnosis and more personalized therapy. The integration of synergistic and complementary skills (molecular biology and pathological anatomy, endoscopy, surgery, radiotherapy, radiology, nuclear medicine and medical physics) is the pivot for the improvement of diagnosis and treatment both for the most common tumors (e.g. colorectal, lung, breast and prostate) and for rarer tumors (e.g. melanoma, head-neck, thyroid, pancreas, soft tissue sarcomas, hepatocarcinomas). IRE translational research teams will allow the integration of clinical information with the parameters extracted from biomedical images and functional analysis at cellular and molecular level, allowing a more appropriate customization of treatment. The study of new preclinical models (primary tumor cultures, 3D cell growth models, xenopatients, innovative animal models of tumor disease, development of models for drug repurposing), preclinical and clinical validation of innovative diagnostic tools (genomic tests), proteomics, metabolomics in tissues and/or biological fluids, development of new models for target identification through genetic manipulation with CRISPS/Cas9 technology), development of new combined therapeutic approaches (surgery, radiation, nanoparticles, ultrasound, heat, etc.).) taking into account clinically available advanced technologies (robotic and minimally invasive surgery, focal therapies, radiotherapy, radiosurgery and SBRT, medical-nuclear therapy, radiomics) will allow to identify new prognostic/predictive biomarkers and to test innovative therapeutic approaches for personalised therapy, a goal for translational research.

Line 5: Quality of life of the neoplastic patient

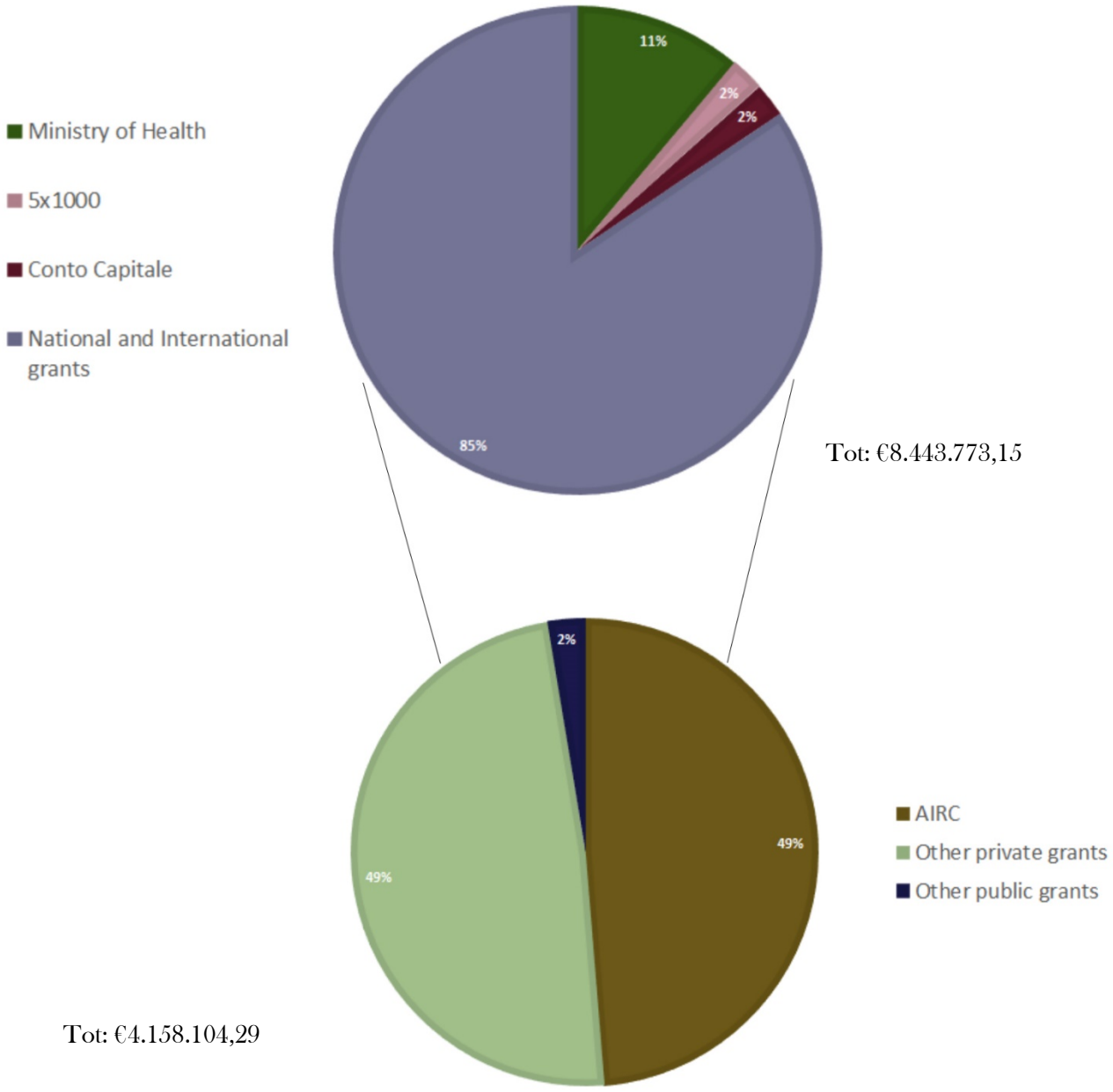
- Responsible persons: A. Pace, M. G. Paggi
- Active projects: 12
- This Line is oriented to the study of quality of life (QoL), rehabilitation, drug-induced toxicity and gender medicine of the cancer patient. The outcomes of oncological disease and cancer treatments and their influence on QoL will be studied with particular attention to fragile (elderly) populations, long survivors and the role of gender medicine. Patient-based evaluation tools and oncological rehabilitation strategies oriented to the recovery of complex disabilities will be studied. Research in this area aims to identify the pathophysiological mechanisms of toxicity and to define therapeutic strategies for prevention. The toxicities induced by radiotherapy treatments, in particular on the Central Nervous System and those on the Peripheral Nervous System induced by numerous anticancer drugs, require clinical studies to identify risk factors and drug trials for prevention and therapeutic purposes. Oncological rehabilitation, aimed at the recovery of motor, functional, psychological and social disabilities as a result of oncological disease and its treatments, represents a field of research of great interest that requires the definition of appropriate multidimensional assessment tools and the testing of multidisciplinary models of care aimed at the treatment of complex disabilities (cognitive functions, fertility, sexuality, fatigue). The increase in the effectiveness of cancer treatments and the increase in the number of long term cancer treatments help to make the issues of quality of life and cancer rehabilitation critical. Measuring the impact of treatments on QoL requires a better definition of patient-based tools for monitoring QoL and the impact of treatments, particularly in fragile populations. The interest in these outcome measures is linked both to the issue of patient centrality and to the evident limits of traditional end-points (PFS, OS-toxicity) in clinical trials. All the studies described above will also be analysed and interpreted from a gender perspective, taking into account not only sex but many gender-related variables. The Research Line will also develop experiments in the field of palliative and supportive care with the aim of promoting guidelines and recommendations for treatment in the advanced stages of illness and at the end of life.

IRE SCIENTIFIC PRODUCTIVITY YEARS 2005 – 2019

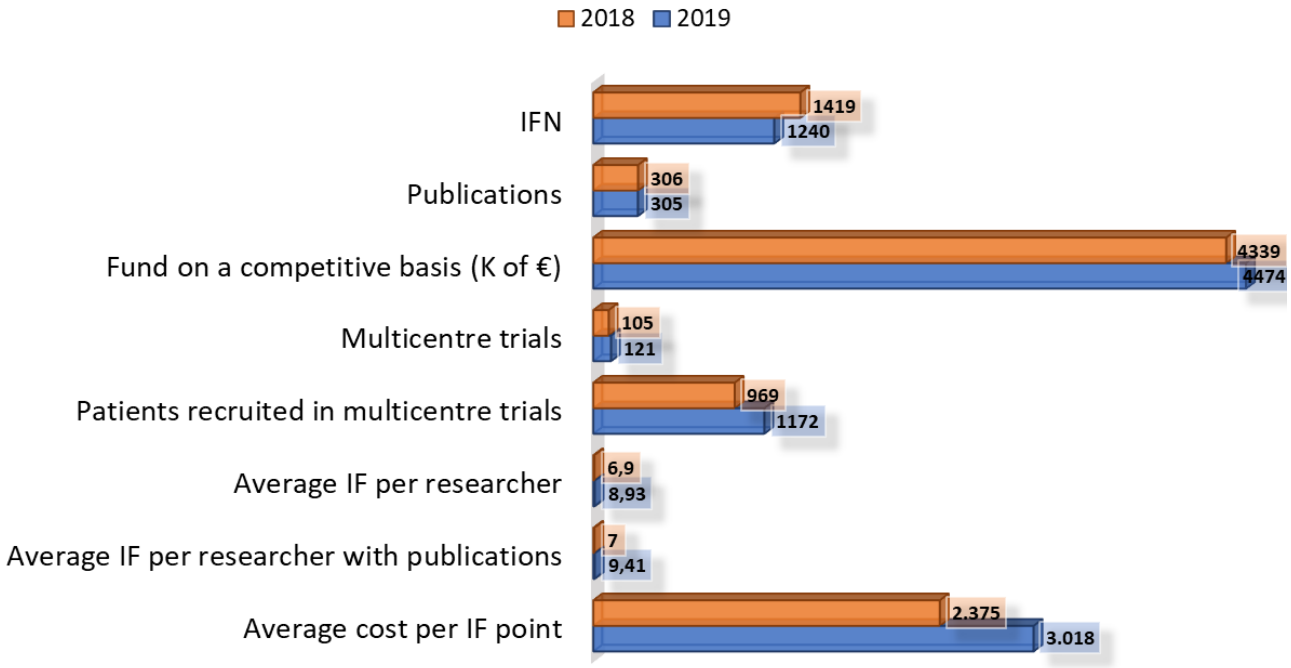


*The normalized Impact Factor (IFN) for the year 2019 is 1.240,46 obtained from 305 publications. The IFN for the year 2018 is 1413 obtained from 306 publications. The IFN in 2019 is therefore 12% less than in 2018. This data, although it could indicate a decrease in the productivity of the institute, should also be interpreted in the light of the fact that the normalization refers to the values of the new quartiles that measures the prestige of a journal that, in particular for the Oncology category, have undergone an average increase of 25%. This means that journals in the Oncology category receive less IFN in the 2019 than in 2018. This also explains, at least in part, why with an almost equal number of publications (305 versus 306), the IFN is lower in 2019 than in 2018. In addition, the Ministry has modified some rules to measure the IFN of a specific publication. As in the case of the Case Reports which in 2019 received 50% of the IFN while in 2018 100%.

DISTRIBUTION OF THE MAIN FUNDING SOURCES SUPPORTING IRE RESEARCH

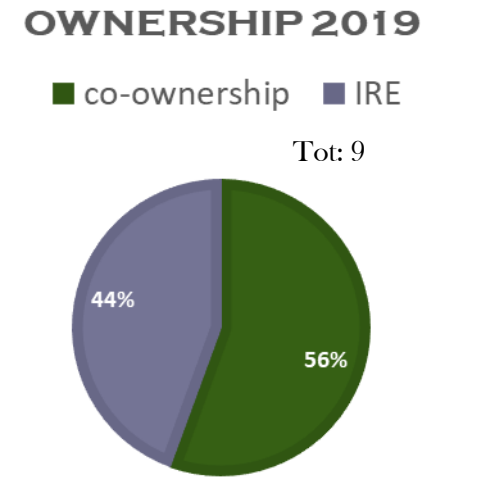


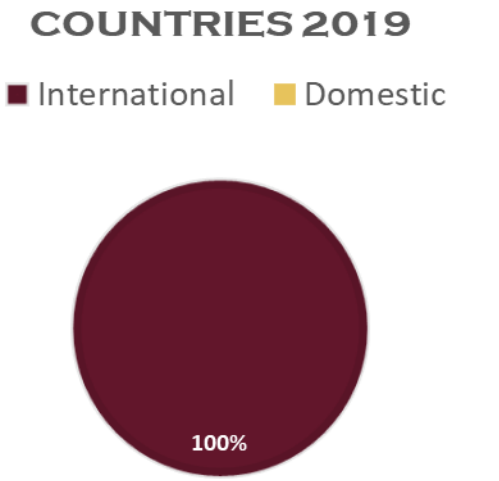
COMPARISON OF RESEARCH PRODUCTIVITY 2019 vs 2018

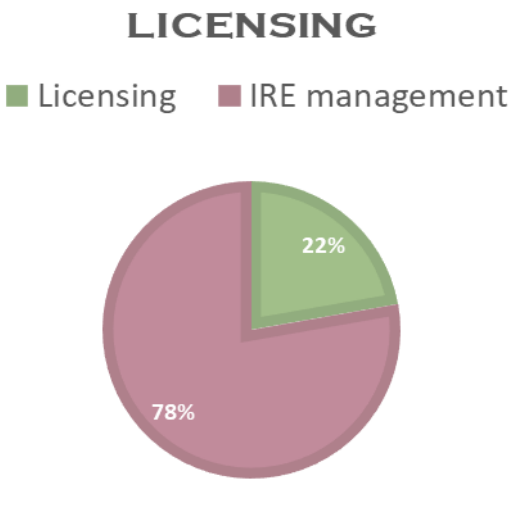


PATENTS

The Patent Portfolio of the Istituto Regina Elena in2019 was composed of 9 international patent families that have been divided into two main categories: a) fully owned by the Institute and b) with co-ownership with other institutes. Some of these patents have already been allowed to be issued in several countries and others are still under examination. The patent portfolio mainly protects the discovery of new prognostic and/or predictive biomarkers, but also nanotechnologies for better drug delivery. One patent that was issued regarding a new system for calculating the dose of radiation of intraoperative radiation therapy was outlicensed to an external Company







LIBRARY
Head: Dr. Gaetana Cognetti

Staff

Domenico Verbicaro
Francesca Servoli, Graduated Specialized Librarian
Virginia Scarinci, Fellow
Arianna Di Luzio
Alessio Mafrica
Federico Feliciello
Claudia Messina

Mission

Aim of the Library is to guarantee easy access to updated scientific documentation, most on electronic support. Apart from acting as a library, it should also be considered a knowledge Centre which facilitates access to relevant documentation in order to favour the best clinical practices and the choices of patients. The Knowledge Centre aims to contribute health information literacy also promoting the exchange of information between different professional areas.

Location

The Library is located near the main entrance of the Institute and offers a multimedia room with 15 computers. The Patient Library is located, since 2005, in a dedicated room providing quality information through professional staff and civil service volunteers using booklets for patients, scientific databases and trusted health portals.

Services

- The Library offers its services to the medical staff. The Library supports research activities by offering scientific information, documentation and education.
- The Library supports the institutional clinical staff offering: consultation of the main biomedical databases; document delivery through interlibrary exchange system, NILDE (in 2019 total borrowing 293, total lending 100); document delivery through other systems (total 270);

organization of training courses; the librarian staff also offers support to the bibliographic searches, systematic reviews and meta-analyses. The main activities of the library consists of managing: monographs and periodicals following international standards and updating of national union catalogues; reference desk also through the personalized service "Book a librarian", tailored courses on demand by the users (40 meetings in 2019). In 2019, thanks also to the Bibliosan Network, the Library subscribed electronic resources: thousands of online journals, databases as Embase, Scopus, Web of Science, Journal Citation Reports, BMJ BestPractice, Cochrane Library, Faculty 1000, Cinahl, etc.

- Inventory and accommodation of the library's paper heritage.
- The Patient Library offers information, using-booklets, databases and quality websites. Patients and their relatives can also use the multimedia room with Internet connection. There is also a Library for recreational reading. Since 2005 about 2200 patients and their relatives visited the Library. In 2020, about 150 patients and family members asked for information (43 tailored search using Internet portals and websites and about 285 information booklets delivered).

Research Activities

The Library is involved in various research and educational activity and participates in library networks. The Library collaborated with a project about health information literacy in old age population promoted by the Pescara AUSL. The results of the survey will be published in 2020. Library staff was also involved in the organization of scientific events, also reporting and presenting posters in various meeting in Italy and abroad. As far as information literacy is concerned, the library has organized: 2 CME courses on scientific documentation and narrative medicine, the participants were about 30. The Library has organized also courses concerning Bibliosan's resources. The Library staff is involved in the teaching and tutorship of the most courses organized on site, also of the 4 RIDAIT Seminars on May, July, October, November, 2019.

The Library coordinated the OECI Improvement Plan on patient involvement and empowerment, concerning humanization of the care, communication and information and produces and updates a census and a leaflet of the activities and services for patients offered by associations and institutional units inside the Institute. The Library is involved in IFO Institutional Working Group for Patient's Centrality; In 2018 Ethics Committee approved INFO RP - An observational study of information prescription in Italy. Patients will be directed to the consultation of information at the Patient Library, with prescription pads signed by the medical staff of the Endocrinology Unit. This study is still ongoing.

The Library staff participates in the working group for the reporting of the Institute's scientific activity, required annually by the Italian Ministry of Health, and manages the institutional archive of publications.

All Library activities have been automated using electronic shared systems. In particular, the Library participates in the following networks:

1. National Library Service (SBN) - the Library's books are catalogued following the MeSH (Medical Subject Headings) and the National Library of Medicine (NLM) Classification;
2. Network Inter-Library Document Exchange (NILDE) - document delivery service for exchanging scientific articles.
3. National Union Catalog of Periodicals (ACNP) for the cataloguing and management on the web of the periodicals;
4. Library Network of Biomedical Research Institutes (Bibliosan)

Publications

Poster: De Castro P, Cognetti G, Palazzesi I, Poltronieri E, Scarinci V, Perilli R. Survey on health information literacy in a cohort of elderly people in Pescara (Italy) in 2017. Are they fully aware of the implications behind Internet search? EAHIL 2019: Learn Share Act Bridge Borders (Basilea 17-20 giugno 2019)

Abstract: Cognetti G. Professionisti della salute e qualità delle cure: il ruolo della informazione e della documentazione elettronica. Smart eLab - vol. 14. ITIM 2019: 19° Convegno Nazionale Associazione Italiana di Telematica ed Informatica Medica (Matera/Potenza 11-12 Novembre 2019) https://calliope.cnr.it/index.php/smartelab/article/view/86

JOURNAL OF EXPERIMENTAL & CLINIC CANCER RESEARCH

Editor – in – Chief: Dr. Mauro Castelli, PhD

Staff

Deputy Editor: Gabriella D'Orazi, MD, PhD
Assistant Editor: Silvia Di Agostino, PhD
Managing Editor: Alice Castelli, PhD

The main goal of cancer research is the improvement of the therapeutic strategies that researchers have developed during the years thanks to the discovery of new reagents, new tools and new working methods that technology has made available. All scientific results obtained need of an adequate and immediate widespread and also a continuous updating of databases: that is one of the most important key point of scientific progress.

The role represented by an oncology journal is to promote these results and share them with the international scientific community.

Journal of Experimental & Clinical Cancer Research (JECCR), the official scientific journal of the "Regina Elena" National Cancer Institute since 1986, takes into consideration manuscripts that includes significant advances in basic cancer research and that offer a translational bridge from the laboratory to the clinic to open new avenues for the understanding, prevention, diagnosis and treatment of cancer.

In 2019 JECCR has led its editorial activity by maintaining its partnership with the publisher BioMed Central - Springer Nature in London. Starting from 2008 the journal became "open access", meaning rapid publication of the articles (instead of print version), that in this way receive higher visibility in the scientific community with consequent increase of the Citation Ranking.

The main accomplishments achieved by JECCR in 2019 are:

- Impact Factor 5.646;
- Ranking in the 1st quartile among International Oncology Journals;
- Over 2800 papers submitted;
- Over 500 manuscripts published;
- JECCR publishes original articles, reviews, meeting reports and commentary articles;
- Over 100.000 article accesses (online) each month.

Most of submitted and published articles in the last years comes from International Oncology Institutes and Universities worldwide.

In conclusion, the open access procedure ensured a wider visibility in the international scientific community for the "Journal of Experimental & Clinical Cancer Research" and also for "Regina Elena" National Cancer Institute of Rome.

JECCR online website:

https://jeccr.biomedcentral.com/

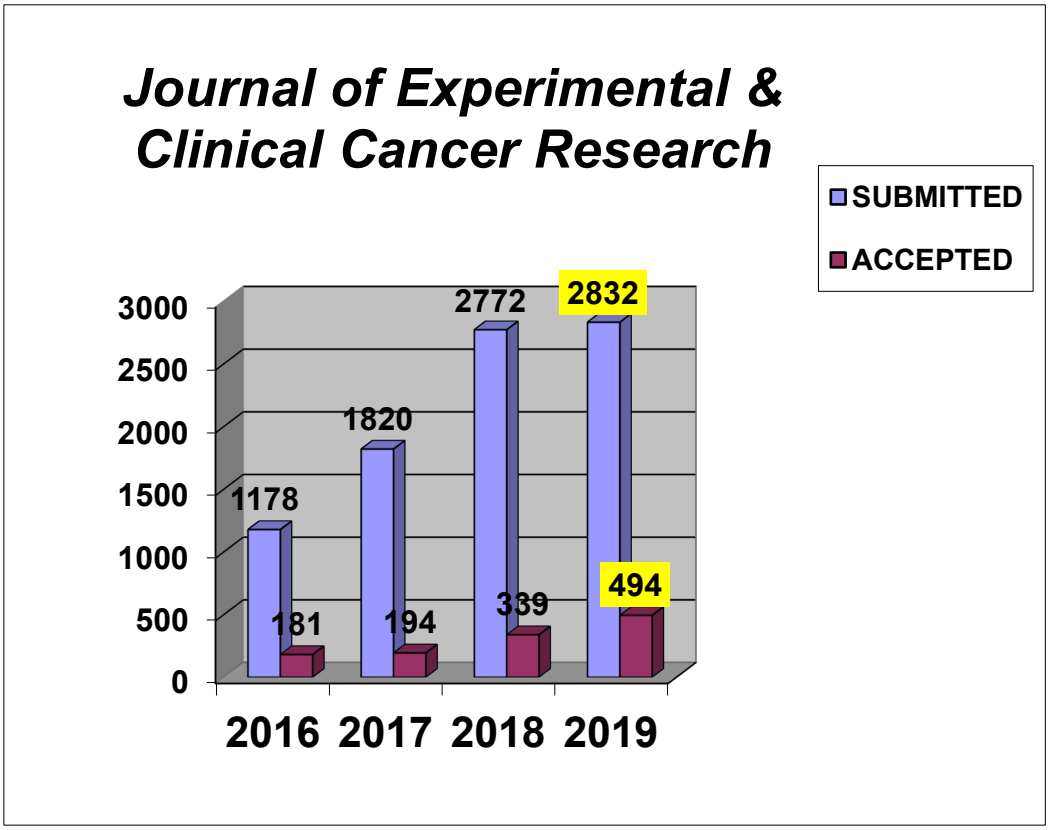
Follow:

https://twitter.com/JournalofExper1

https://www.facebook.com/Journal-of-Experimental-Clinical-Cancer-Research104181494387196/

Top 5 JECCR publications most cited in 2019

1. CircSETD3 (Hsa_circ_0000567) acts as a sponge for microRNA-421 inhibiting hepatocellular carcinoma growth. Xu, Liangliang; Feng, Xinfu; Hao, Xiangyong; et al. Volume: 38 Article Number: 98 Published: FEB 22 2019 **Times Cited: 32**
2. STAT3 as a potential therapeutic target in triple negative breast cancer: a systematic review.: Qin, Jiang-Jiang; Yan, Li; Zhang, Jia; et al. Volume: 38 Article Number: 195 Published: MAY 14 2019 **Times Cited: 28**
3. MicroRNA-34 family: a potential tumor suppressor and therapeutic candidate in cancer. Zhang, Lu; Liao, Yi; Tang, Liling. Volume: 38 Article Number: 53 Published: FEB 4 2019 **Times Cited: 24**
4. Combination of CTLA-4 and PD-1 blockers for treatment of cancer. Rotte, Anand. Volume: Article Number: 255 Published: JUN 13 2019 **Times Cited: 23**
5. HOXD-AS1 promotes the epithelial to mesenchymal transition of ovarian cancer cells by regulating miR-186-5p and PIK3R3By: Dong, Shanshan; Wang, Ranran; Wang, Hui; et al. Volume: Article Number: 110 Published: MAR 1 2019 **Times Cited: 22**



ETHICAL COMMITTEE

Chairman

Prof. Francesco D'Agostino, Expert in Bioethics

Vice Chairman

Prof. Agata Amato Mangiameli, Expert in Legal Matters

Secretary

Anna D'Ambrosio

Technical scientific secretariat

Diana Giannarelli
Maria Cecilia Ciacchella
Cecilia Fagioli
Barbara Matrascia
Federica Struglia

Members

Clinicians: Dr. Anna Ceribelli, Prof. Vito Fenicia, Prof. Stefano Calvieri, Prof. Daniele Santini

General Medicine: Dr. Mario Falconi

Pedriatician: Dr. Raffaele Cozza

Biostatistics: Prof. Annarita Vestri

Pharmacologist: Prof. Lucia Negri

Pharmacists: Dr. Antonia Marina la Malfa, Dr. Silvia Murachelli, Dr. Nicoletta Onori

Genetist: Prof. Giovanni Neri

Volonteer Representative: Elisabetta Iannelli, Lawyer

Health Areas Representative: Dr. Laura Iacorossi

IRE Scientific Director: Prof. Gennaro Ciliberto

ISG Scientific Director: Prof. Aldo Morrone

IFO Chief Medical Officer: Dr. Branka Vujovic

Bietti Foud. Scientific Director: Dr. Monica Varano

Bietti Foud. Chief Medical Officer: Dr. Amalia Allocca

Clinical Engineer: Ing. Giuseppe Navanteri

Nutrition Expert: Prof. Giorgio Calabrese

The Central Ethical Commitee IRCCS Lazio expresses its opinion on trials to be managed in Regina Elena National Cancer Institute, San Gallicano Dermatological Institute and G.B. Bietti Foundation for ophthalmology.

During years 2019 the Central Ethical Commitee IRCCS Lazio examined and expressed its opinion on 143 studies including clinical trial protocols, observational studies and research projects, 214 substantial amendments.

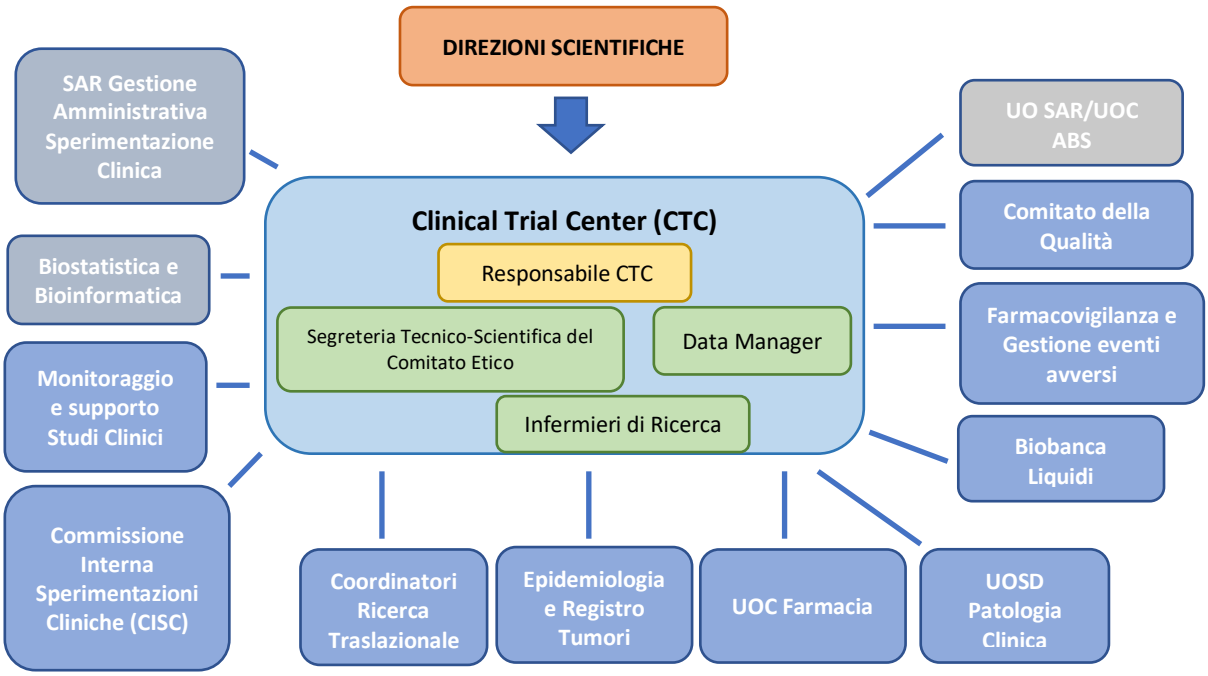
Relatively to these items the ethics committee analysed ethical and scientific aspects, the adequacy of the investigators and the structures involved and, above all, the methods and documents to be used to inform patients and obtain their informed consent.

The Ethical Committee meetings are held monthly and, if necessary and urgent, the opinion of their members on a particular case such as the use of drugs not commercially available is obtained by mail.

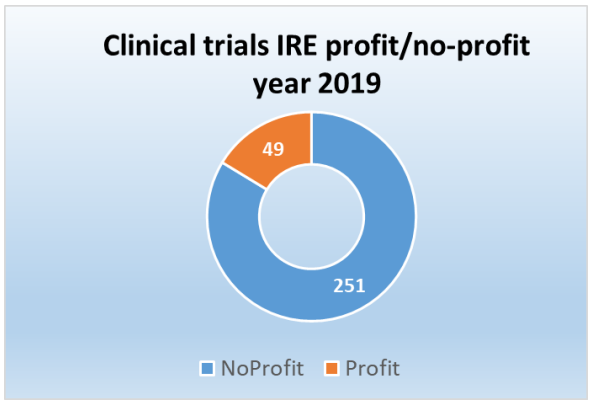
IFOs CLINICAL TRIAL CENTER

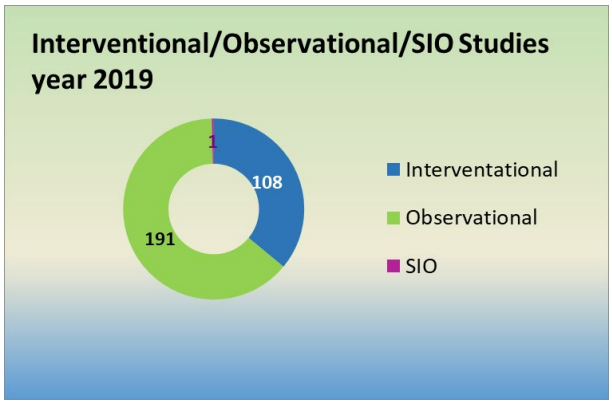
The CTC was established by Decree No. 308 dated 24 April 2018 and subsequently amended with Decree No. 602 dated 06 August 2018. The components of both the CTC and External Units is shown in Figure 8. The CTC performs the following functions:

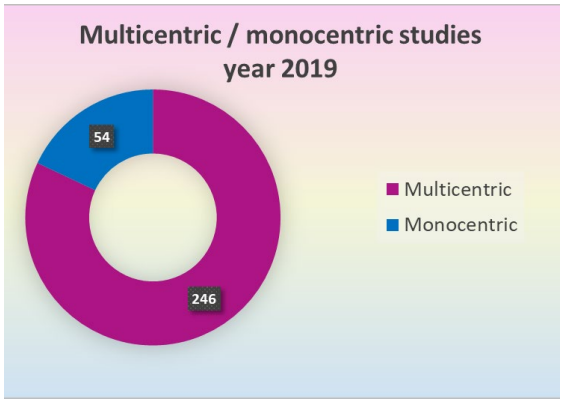
- Coordinates and monitors the functional activities regarding the management of clinical trials within the IFO, acting as a qualified reference point;
- Guarantees greater control of the clinical trials to the Scientific Directions of Regina Elena and San Gallicano Institutes and IFOs Medical Office;
- Particular supports in the spontaneous non-profit research;
- Interacts with the Departments involved in experimental research activities, coordinating the activities of the experiments aimed at:
  1. Providing administrative, managerial, methodological and statistical services to researchers for the conception, design, planning, start-up phase, conduction, analysis and reporting of clinical studies so that these activities are carried out in compliance with the Good Clinical Practice (GCP) and the protocols;
  2. Supporting the management of authorization procedures as well as the conduction and financial reports of clinical studies;
  3. Promoting, in profit and non-profit research, the professional development of all participating researchers in terms of compliance with GCPs and regulatory aspects;
  4. Guaranteeing quality control of studies (experimental and observational studies) with profit and non-profit study promoters;
  5. Supporting monitoring of information regarding the feasibility of studies in terms of potentially enrolled patients;
  6. Increasing the synergistic collaboration between researchers involved in the studies;
  7. Evaluating the experiments proposed by researchers at IFO, for which IFO takes on the role of Promoter, and monitors the progress of the approved studies;
  8. Identifying areas of great strategic interest for the Institute and propose initiatives necessary for promoting clinical trial projects in these areas

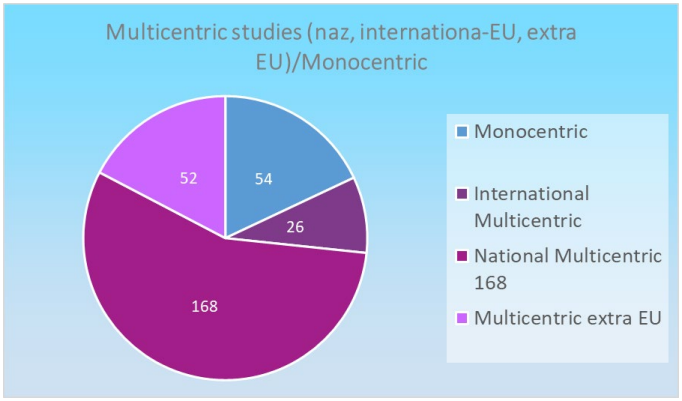


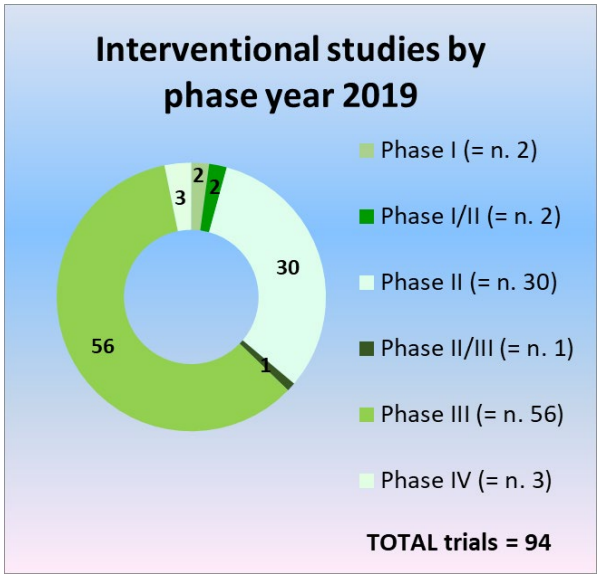
CLINICAL TRIALS GRAPHICS











BIOBANK – BBIRE
Head: Prof. Gennaro Ciliberto

Coordinator

Dr. Laura Conti. Head of UOSD Clinical pathology

Staff BBIRE – T

Prof. Edoardo Pescarmona, Head of UOC Pathology Unit
Dr. Mirella Marino, Responsabile Assicurazione Qualità e Rischio Clinico
Dr. Simona Di Martino, Biologist
Dr. Valentina Laquintana, Biologist
Dr. Claudia Bonomo

Staff BBIRE – LB

Dr. Giovanni Cigliana, Responsabile Assicurazione Qualità e Rischio Clinico
Dr. Chiara Mandoj, Biologist
Dr. Giulia Orlandi, Biologist
Dr. Mustapha Haoui, Technician

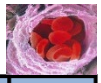
BBIRE is involved in a growing number of Institution projects (40 projects), and as a member of the European research network of Biobanks and Biomolecular Resources (BBMRI-ERIC) participates with European groups (EORTC-European Organisation for Research and Treatment of Cancer) to large-scale multicentre projects.

Also, BBIRE is involved in the ACC network and the primary objective of the Pathology and Biobanking Working Group is represented by the organization of a shared preanalytical workflow to obtain uniform quality of the biological samples, mainly tissue samples.

Tumor Tissue BioBank IRE

DEPARTMENT	PATHOLOGY	PATIENTS	SAMPLE PRESERVATION MODE						
			TUMOR TISSUE CRYOPRESERVATION	NOT TUMOR TISSUE CRYOPRESERVATION	TUMOR TISSUE OCT	NOT TUMOR TISSUE OCT	NGS	FFPE	TOTAL
ORTHOPEDIC SURGERY	Sarcoma	124	1125	686	32	8	26	52	1929
THORACIC SURGERY	Thymoma	29	220	59	7	4		30	320
	Lung tumors	172	927	784	69	40	80	142	2042
	Mesothelioma	2	8	0	1	0		1	10
	Lymphoma	8	38	4	1	0		8	51
	Pleural effusion	39	0	0	0	0	21	0	21
	Peripheral blood (pleural effusion)	22	0	0	0	0		0	0
SURGERY A/PLASTIC SURGERY	Breast cancer	73	380	284	22	14		64	764
GYNECOLOGICAL SURGERY	Uterine cancer	86	633	191	26	3		72	925
	Ovarian cancer	33	699	22	11	3		26	761
	Ovarian cancer + peritoneal washing	41	494	95	19	3		34	645
	Peritoneal washing	20	0	0	0	0		0	0
	Uterine carcinosarcoma	6	77	17	7	0		6	107
UROLOGY SURGERY	Renal Cancer	82	660	295	37	12		76	1080
	Bladder Cancer	47	422	209	20	12		42	705
NEURO SURGERY	Brain cancer	27	112	1	4	0	9	22	148
HEPATOBILIARY SURGERY	Colon cancer	64	301	222	22	16	14	60	635
	Colon cancer/hepatic metastasis	4	55	45	0	0		4	104
	Hepatic metastasis	19	137	91	4	2		12	246
	Stomach cancer	8	34	20	5	4		7	70
	Liver cancer	14	116	48	11	0		11	186
	Pancreas cancer	26	135	54	10	3		20	222
	Gist	1	8	0	1	0		1	10
	Retroperitoneal sarcoma	5	108	22	2	1		4	137
	Cholangiocarcinoma	6	33	37	1	1		5	77
	Biliary tract cancer	2	1	0	1	1		2	5
	Melanoma	1	8	4	0	0	1	1	14
OTOLARYNGOLOGY SURGERY	Head and neck cancer	8	36	8	4	0		2	50
OTHERS	Metastasis (melanoma)	15	78	0	6	0	15	15	114
Total		984	6845	3198	323	127	166	719	11378

Body Fluids BioBank IRE



DEPARTMENT	PATHOLOGY	PATIENTS	WITHDRAWALS	SAMPLE ALIQUOT (~500µL)				2mL*	1mL	
				Whole Blood	Plasma EDTA	Plasma Citrate	Serum	Plasma EDTA	PBMC	TOTAL
ORTHOPEDIC SURGERY	Sarcoma	603	1675	3336	8069	998	6942	3267	-	22612
THORACIC SURGERY	Thymoma	26	26	52	195	13	102	20	-	382
	Lung cancer	205	205	410	970	-	803	426		2609
	Lymphoma	4	4	8	26	-	16	6		56
MEDICAL ONCOLOGY 2	Breast cancer	69	71	141	327	201	483	15	-	1167
GYNECOLOGICAL SURGERY/ BTO (Ovarian Tissue Biobank)	Uterine cancer	314	320	638	438	956	1339	931	-	4302
	Ovarian cancer	75	75	150	473	222	350	135		1330
	Various									
RADIOTHERAPY	Prostate/ Oropharynx/ Breast cancer	169	596	1192	2908	-	2682	1471	-	8253
MEDICAL ONCOLOGY 1/2	Lung cancer (ACC LUNG)	27	48	143	-	-	7	311	57	518
NEURONCOLOGY/ NEURO SURGERY	Brain cancer	74	93	186	295	266	389	232	-	1368
		112	117	234	568	-	477	269		1548
ENDOCRINOLOGY	Medullary thyroid cancer	18	18	36	4	-	-	34	-	74
MED. ONCOLOGY/ PLASTIC SURGERY	Melanoma	67	144	286	541	6	622	549	-	2004
GASTROENTEROLOGY	Hereditary colon cancer	200	200	400	114	-	-	397	-	911
HEPATOBILIARY SURGERY	Colon/Stomach /Liver cancer	17	18	36	27	51	74	47	-	235
MTB	Various	26	38	76	42	9	82	153	5	367
TRANSFUSION M.	Healthy donor	59	105	210	82	303	455	208	-	1258
TOTAL		2065	3753	7534	15079	3025	14823	8471	62	48994

BBIRE COOPERATING PARTNERS

IRE

BBMRI.it
Biobanking and BioMolecular Resources Research Infrastructure of Italy

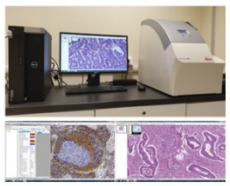
ADOPT BBMRI-ERIC® gateway for health

Partner of BBMRI

(2017/2018)

HORIZON 2020

- The CRC-Cohort developed within the ADOPT project (this project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement.
- Participation in the Digital Pathology Competition based on the Adopt BBMRI-ERIC Colorectal Cancer Cohort



OECI COMPREHENSIVE Cancer Centre

EORTC European Organisation for Research and Treatment of Cancer
The future of cancer therapy

Partner of EORTC

(2018/2019)

SPECTA
Screening Patients for Efficient Clinical Trial Access

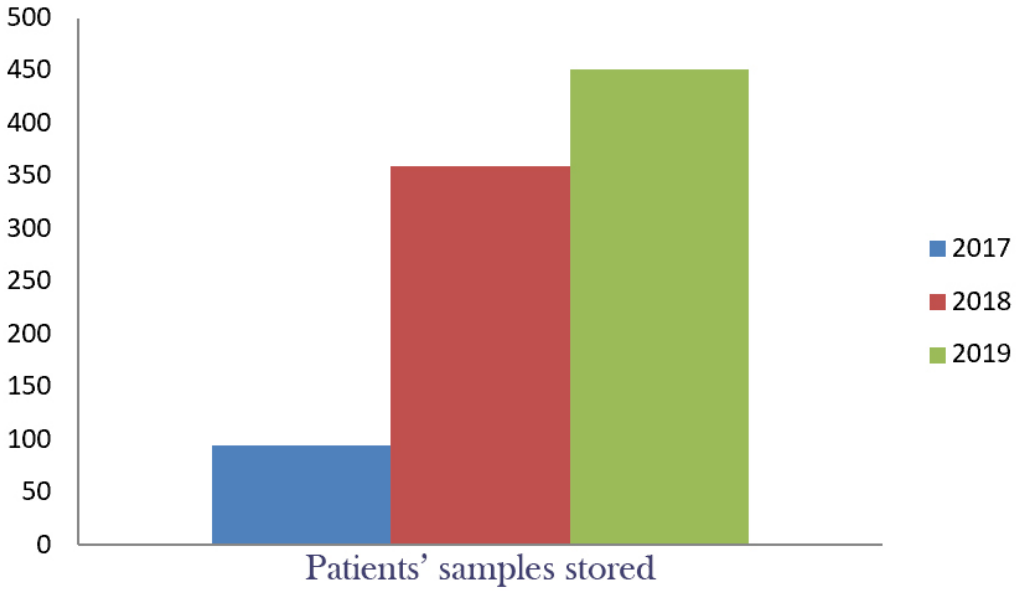
- EORTC research project 1843 Molecular characterization of rare cancers – Arcagen (EORTC-EURACAN)

ALLEANZA CONTRO IL CANCRO

ACC -WG Anatomia Patologica e Biobanche

BBIRE is involved in 40 Institute internal projects and in Molecular Tumor Board

BIOBANK GROWTH

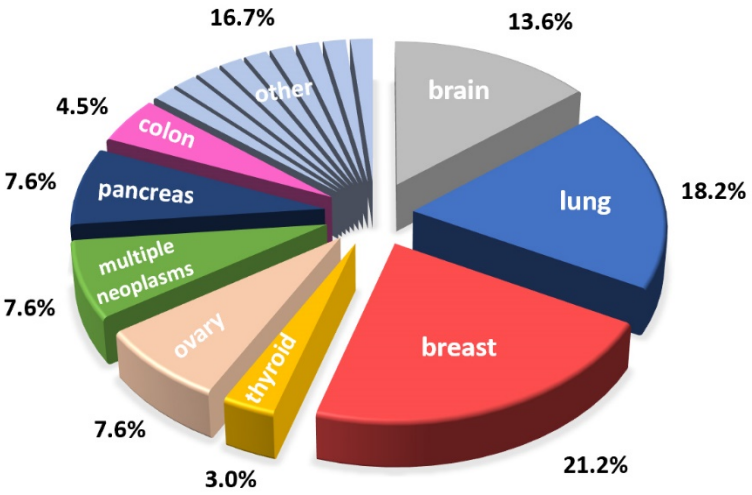


New cases of solid tumors registred in the BioBank

MOLECULAR TUMOR BOARD – MTB

The Molecular Tumor Board (MTB) at the National Cancer Institute Regina Elena (IRE) is active since September 2018. During 2019, the MTB gained reputation in the local Oncology Community and has progressively become a referral hub for the treatment of difficult clinical cases: not only intramural, but also outpatients from other Oncology Departments and General Hospitals in Rome and in the larger Rome area (Regione Lazio). Specifically, during 2019, there have been 23 MTB meetings/sessions, at 15-day intervals. Altogether, 48 new patients with very diverse neoplastic diseases were brought to our attention. For all these patients there were no alternative therapeutic options left. In 41 cases, careful consideration of the clinical history, the available genomic data, and the specific clinical query asked by the Clinical Rapporteur led the MTB to request additional molecular testing, most often massive parallel DNA sequencing. Next Generation Sequencing (NGS) was carried out by small targeted sub-genomic panels (22-50 genes), genome-wide (Whole Exome Sequencing, WES) approaches, or else by outsourcing from prime International NGS Service Providers. Particular care was exercised in selecting the analyte (or analyte combination) most suitable for each individual patient. Either or both tissue and circulating DNA (tDNA and ctDNA) were tested, often through the implementation of successive blood drawings and/or, when ethically acceptable, tissue re-biopsy. Ultrasensitive and Digital PCR (dPCR) custom assays were designed, validated and deployed. Immunohistochemistry and in situ hybridization were also utilized. All NGS, dPCR and ancillary methods were integrated as orthogonal confirmatory measures and/or evaluated as self-standing assays. Non-standard assays were backed up by (and integrated with) CE-IVD testing whenever possible. In 28 cases (68%), at least one specific molecular alteration was identified associated with a potential vulnerability. Following multidisciplinary clinical/molecular case review, a non-standard targeted therapy (mostly OncoKB levels 3A and 3B) was recommended for 13 patients (31%). The Clinical Rapporteur elected to treat 7 of these patients. In 2 patients a rapid deterioration of the clinical conditions prevented administration. However, in the remaining 5 patients (12% of the total 41-case cohort), an objective and often durable (months to >1 year) clinical response was seen (sub-complete response, partial response or stable disease). In two cases, clinical response was dramatic. All the costs were covered by the Regina Elena Institute. None of the patients was requested to pay, or incurred in any disbursement for any kind of molecular testing, or for the purchase and administration of the selected drugs. In specific situations, when applicable, the MTB entertained a collaborative effort with the Italian National and local Health Authorities to obtain special permits and economical support finalized to free drug administration. Additional collaborative efforts are in progress to extend the MTB approach.

70 pts have been discussed



38/70 **(54.0%)** pts showed ≥1 actionable mutation

24/38 **(63.1%)** pts have received therapeutic recommendations

12/24 **(50%)** started recommended therapy

IRE ISTITUTO NAZIONALE TUMORI REGINA ELENA

PARTICIPATION TO NETWORKS

ALLEANZA CONTRO IL CANCRO – ACC

The IRCCS Regina Elena National Cancer Research (IRE) is one of the founder members of Alliance Against Cancer (ACC), the largest Italian organization for cancer research, that was established in 2002 by the Italian Ministry of Health as a network of six high standard institutes for comprehensive cancer patient care and research (IRCCS).

The primary aim of ACC is to promote the network among oncologic institutes pursuing mainly clinical and translational research in order to bring state of the art diagnostics and advanced therapeutics to patient care.

In addition to the aims of translational medicine, ACC also fosters research through international collaborative networks of excellence, such as Transcan ACC is one of the funding agencies in this European network that coordinates translational research projects that are selected by means of high standard evaluation procedures.

The Association is currently made up of 26 Comprehensive Cancer Center, AIMaC, Italian Sarcoma Group, CNAO Foundation and the Istituto Superiore di Sanità.

Actually, eleven Working Groups (WGs) that deal with the main types of cancer (Colon, Breast, Lung, Glioblastoma, Melanoma and Sarcoma) and clinical research (Genomics, Pathological Anatomy and Biobanks, Oncohematology, Immunotherapy and Radiomics) are active in the ACC. These are collaborative groups formed by the best national reference experts who deal with programming clinical research and optimizing the use of new drugs for each individual tumor pathology. The IRE Institute participate to all WGs with the participation of pre-clinical and clinical representative.

Working Group	Pre-clinical representative	Clinical representative
Colon	A. Biroccio	M. Maugeri Saccà
Glioblastoma	M. Paggi	A. Pace
Immunotherapy	P. Nisticò	V. Ferraresi
Breast	G. Blandino	P. Vici
Melanoma	P. Giacomini	V. Ferraresi
Sarcoma	R. Falcioni	V. Ferraresi
Lung	P. Nisticò	M. Maugeri Saccà
Oncohematology	M. Fanciulli	F. Marchesi
	Wet Lab	Bioinfo
Genomics	S. Buglioni	M. Pallocca
Anatomo Pathology	S. Di Martino	E. Pescarmona
Radiomics		A. Vidiri

A-IATRIS / EATRIS

A-IATRIS, Association Italian Advanced Translational Research Infrastructure, is a network of institutions of excellence on the national scene able to make specific and complementary contributions in the area of translational medicine. A-IATRIS represents the Italian node of EATRIS (European Advanced Translational Research Infrastructure in Medicine).

EATRIS is designed to bridge the gaps and deficits in the panorama of European translational medicine. Its objectives for EATRIS are:

- To support the process of translating research results into innovative strategies aimed at the prevention, diagnosis and treatment of diseases of particular health and economic importance for European member states;
- To build a beWer space in which the flow of information between basic research and clinical observations is bi- directional

EORTC

The future of cancer therapy

European Organization for Research and Treatment of Cancer Is an independent, non-profit cancer research organization, its mission is to coordinate and conduct international translational and clinical research to improve the standard of cancer treatment for patients

.

OECI

The "Organization of European Cancer Institutes" is a nongovernmental, no-profit legal Entity established in 1979 to promote greater cooperation among European Cancer Centres and Institutes with the following Aims:

- Create a critical mass of knowledge and skills that can identify and share new and improved models of care
- Improve the quality of cancer care and translational research
- Improve the quality of life for cancer patients
- Provide a path of continuous improvement in order to homogenize the care of cancer patients according to shared
- Achieve high European standards and quality levels.
- Facilitate the development of European multi-centre studies and the use of EU research funds

With time OECI has grown to include more than 100 Cancer Institution mainly in Europe but also in other Continents. The OECI aims to promote efficient partnership, reduce fragmentation and increase competitiveness amongst European cancer centres and institutes. This goal is being achieved by promoting and enhancing the concept of "comprehensiveness" and "multidisciplinarity", supporting quality in cancer care and dynamically working in crosscut expertise by involving our Working Groups, our Members and promoting synergies with other cancer Organisations.

OECI, on September 10, 2015, has certified that IRE meets the quality standards for cancer treatment and research and has therefore awarded to IRE the qualification of Comprehensive Cancer Centre, namely an Institute with the combination of characteristics such as translational research, multidisciplinary, continuous improvement of care, the production of guidelines and diagnostic-

therapeutic pathways, continuous training and centrality

Year 2019 has to be remembered as the year in which for the first time the annual meeting of OECI called “Oncology Days” has been held in Italy. The meeting was held in Bari from June 19 to June 21. All Italian OECI Members, including IRE contributed to the organization of the program. A dedicated roundtable session with the title: The OECI Italian Institutions Network Alliance Against Cancer (ACC) , A Country Based Model took place as a central event in the meeting

In Year 2019 IRE has applied to undergo a new OECI Accreditation and Designation Programme. Upon approval of the IRE application on June 5, 2019, a self-assessment period started that was completed in January 2020. A provisional Accreditation as Comprehensive Cancer Center has been assigned as well as in March 2020 a GO decision was communicated and a peer review visit planned for May 12 and 13. Unfortunately that date was cancelled due to the COVID-19 pandemic and at the time of writing this report it has not yet been rescheduled

UICC

The Union far International Cancer Control's (UICC) rapidly increasing membership base of over 1000 organizations in more than 160 countries, represents the world's major cancer societies, ministries of health and patient groups and includes influential policy makers, researchers and experts in cancer prevention and control. UICC also boasts more than 50 strategic partners

TRANSLATIONAL RESEARCH INTEREST GROUPS

GENOMICS TRANSLATIONAL WORKING GROUP

The IRE Working Group (WG) Genomics is a multidisciplinary group spanning in expertise from basic-translational approaches to clinical Next Generation Sequencing (NGS). Although NGS is our main focus, members of the group implement many ancillary nucleic-acid-based methods for research and advanced diagnostics. Biologists, Biotechnologists, Bioinformaticians, Pathologists and Clinical Pathologists provide the WG Genomics with a solid biotech core, but all the activities (from study design to patient enrollment and treatment, through data collection and analysis) build on the strong contributions of medical oncologists, radiologists, surgeons, and Biostatisticians. Integrative approaches are being carried out including radiogenomics, liquid biopsies, whole-genome and single-cell sequencing, big data interrogation, model building and clinical trial design. The goal is to harmonize diverse skills and institutional needs into a common finalized effort (see figure ...).

Mission

Initially established to share knowledge about NGS solutions available at our Institute, the group readily evolved to foster cross-fertilization, collaboration, and integration among projects and participants. Presently we focus on the immense challenge of making precision medicine technically feasible and applicable to real-life oncology.

Biotechnology

Not everything is in tumor DNA. Besides genomics, transcriptomics and epigenetics are applied altogether to discover cancer biomarkers and improve their use, particularly when they are actionable. Studies are carried out routinely including genome-wide (e.g. whole-exome) sequencing, targeted NGS (panels spanning from a few genes to >500 genes), RNAseq, ChIP-Seq, ATAC-Seq, Hic-Seq, cDNA array technologies, single-cell sequencing, systematic miRNome assessment, studies on other non-coding RNAs, as well as techniques with limited multiplexing ability (PCR and digital PCR - dPCR) or mostly diagnostic (molecular cytogenetics). Bioinformatics finds application at several levels of complexity. For routine diagnosis we take advantage of comprehensive knowledgebase interrogation tools (mostly commercial and/or open source) running on the cloud and/or local computer clusters. These interrogate catalogues of actionable alterations and link them to annotated clinical trial registries. This is a practical route to semi-automated clinical reporting. On the other hand, as needs arise, a team of bioinformaticians elaborate fully customized software and analytical pipelines for specific queries, and supervise their use to address more complex issues, such as the deconvolution of cellular populations in RNA sequencing and the study of epigenome modulation. One important lesson we have learnt during the past few years (and in 2019 in particular) is that we have to do our best to stay as open-minded as possible. Nobody can really tell at first sight which NGS approach will be best for a given patient or project. But if one looks carefully, a solution may be at hand. This has become particularly evident in the context of the Molecular Tumor Board activities

The National and International Context

We are part of the strategic Italian anti-cancer alliance called Alleanza Contro il Cancro (ACC), a National Consortium under the auspices of the Ministry of Health devoted to coordinate research activities across a selected ensemble of comprehensive cancer centers. We actively collaborate in the pan-cancer subgroups of ACC-Genomics/Bioinformatics and ACC-Immunotherapy. These two horizontal WGs aim at empowering standardized routines, an Italian Clinical Bioinformatics infrastructure, and a framework for Cancer Immunotherapy. During 2019, the IRE Genomics Translational Group has been particularly active in the ACC sub-sections of Lung cancer and Sarcoma. We have beta-tested the ACC Lung Chip. This targeted NGS panel (about 200 genes) has been developed by ACC Genomics, and is being validated for the assignment of target therapies through expanded DNA profiling. ACC sarcoma has created a shared NGS platform dedicated to the diagnostic testing of fusion transcripts. This is an important attempt to achieve standardization and emanate diagnostic guidelines in a neglected area (rare tumors) of

unmet medical need. A comparison of several available NGS platforms has been published in April 2019 on 150 clinical tissue specimens. Also in the context of the ACC collaborative efforts, our WG has been involved in OncNGS (www.oncngs.eu), a pan-European collaborative effort that aims at building an innovative liquid biopsy NGS panel using the novel procurement scheme, e.g. the academia will set basic needs, minimum standards, requirements and rules. Then, private biotech companies will competitively propose (in a EU tender) alternative technical solutions. The motto of OncNGS is "better NGS for all European Citizens". The IRE WG Genomics is a staunch supporter of clinical genomics for all cancer patients since early disease stages, and we are proud to collaborate in this important endeavor.

Clinical Application

Our patients are both the study subject and the commissioners of better therapy. The NGS group aims at banning empiricism from cancer therapy and resorting to innovative trial schemes based on molecular knowledge. During 2019, the trend toward complexification of the diagnostic NGS panels has been consolidated. NGS panels of increasing complexity have been employed to reflect the expansion of the druggable genome. In parallel, we have witnessed a considerable increase in the number of NGS-based diagnostic tests performed, as follows: 1160 patients (colorectal, lung, thyroid, gastric carcinomas, brain tumors, sarcoma and melanoma), 830 of whom displayed pathogenetic or likely pathogenetic alterations, and 750 had targetable or potentially targetable alterations either in the standard of care setting or in the context of ongoing clinical trials. More in general, rather than adopting the one-size-fits-all scheme so common to commercial outsourcing models, we find it most useful to tailor different NGS solutions for different clinical-pathological patient groups.

The Genomics WG entertains a close collaboration with the institutional BioBank. Whether occurring in the context of standard of care, or during a clinical trial, we do our best to biobank tissue, blood, and other body fluids for future reference, molecular 'second look', and retrospective analysis.

The WG Genomics includes members of our Genetic Testing Unit, focusing on the most frequent Hereditary Cancer syndromes (HCS) such as the Lynch syndrome (LS), the Peutz-Jeghers syndrome (PJS), the Juvenile polyposis syndrome (JPS), The Cowden syndrome (CS) the Hereditary Breast and Ovary Cancer syndrome (HBOC), APC-associated polyposis and MUTYH-associated polyposis (AAP and MAP), and the Multiple Endocrine Neoplasia syndrome type 1 and type 2 (MENl and MEN2). Molecular testing is performed in the framework of genetic interview/counseling through the activities of our outpatient's clinics. Moreover, a substantial fraction of cases are referred from other institutions all over the country. During 2019, testing 412 probands resulted in the discovery of 69 affected patients.

Hereditary Cancer testing allows an in-depth cancer risk assessment for each patient, leading to improvements in health outcomes of both carriers and family members. Whereas we do remain faithful to this basic mission, in 2019 we have introduced a significant methodological novelty by establishing a logistic link between germ line and somatic DNA. BRACness testing used to be carried out independently at our Institution depending on whether it occurred in the context of genetic counseling (PBMCs) or tissue NGS (tumor DNA). The WG Genomics has facilitated merging expertise and facilities. As known, BRACness is now recognized as a common actionable feature of familial and 'sporadic' cancer, e.g. for platinum chemotherapy, poly-ADP ribose polymerase (PARP) PARP inhibitors etc. We have re-modelled the entire patient admission scheme and diagnostic workflow to optimize the complex set of diagnostic activities aimed at assessing genomic instability. This general reorganization of BRACness testing will have a positive impact on accurate diagnosis, and the rationale allocation of resources, and will ultimately help the WG to approach more ambitious research goals in this area.

As to Non Small Cell Lung Carcinoma (NSCLC), liquid biopsy is now a consolidated practice to detect EGFR mutations. With the advent of new generations of EGFR-targeted therapies (e.g. erlotinib, afatinib, osimertinib etc) this is an area of rapid progress. Liquid biopsy in these patients is in need for technological update (in progress) and validation. During the past year we have increasingly applied multigene NGS panels to detect

pathological gene rearrangements and resistance mutations in blood. During 2019 we have assigned an EGFR mutational status in 91 different blood samples from 67 patients, providing a minimally invasive tool to monitor and assign target therapy in NSCLC patients.

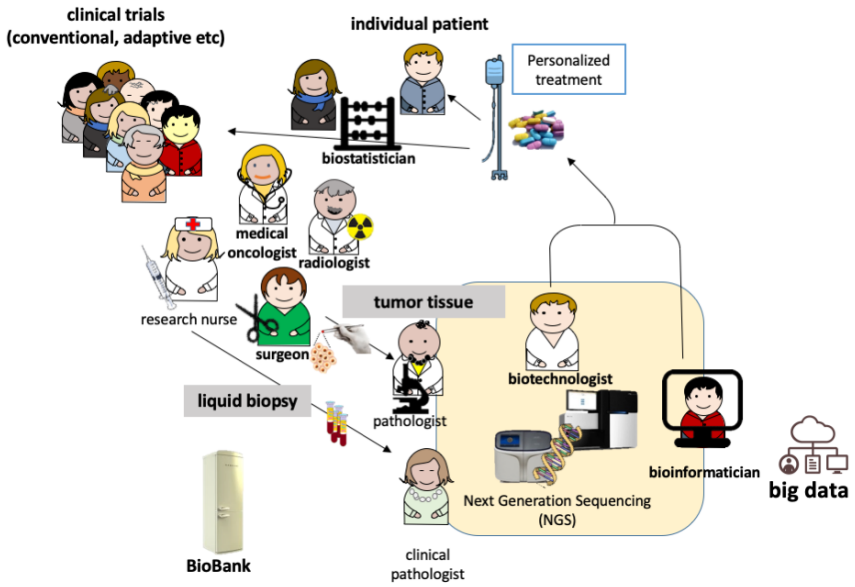
Research Activities

Research activities are focused on the identification and validation of cancer-related molecular targets, the use of new technical approaches for tumor diagnosis and prognosis, and monitoring in the context of innovative cancer therapies, in one word bench-to-bedside. At the same time, the activities of the working group are also focused on characterizing the heterogeneity of tumor population and its microenvironment. Furthermore, several exploratory studies are conducted to identify epigenetic mechanisms involved in tumor transformation, including miRNA signatures in melanoma, head and neck cancer, and hematological malignancies. Overarching miRNA regulatory mechanisms are ideal targets to reprogram cancer cells, and there are active efforts to exploit this therapeutic opportunity. Big data are explored to detect co-vulnerabilities and find inspiration for novel drug indications, as well as drug repositioning/repurposing. During 2019 we have made several observations that suggest the possibility to explore this issue in phase I clinical trials, that will hopefully be run in the intramural Phase I facility in the near future.

Seminars

The Group promotes a rich seminarial activity, and holds regular meetings and round tables with distinguished international guests from both the academia and the biotech world, including big pharma and small/medium enterprises (SMEs).

IRE Working Group Genomics



NCR TRANSLATIONAL GROUP

Recent studies have revealed that about 901X1 of the eukaryotic genome is transcribed. Interestingly, only 1-2% of these transcripts encode for proteins, the majority are transcribed as non-coding RNAs (ncRNAs).

During the past few years ncRNAs, previously thought as transcriptional junk, have become a research goldmine. The functions of ncRNAs are likely diverse, and their underlying mechanisms are just beginning to be understood. For sure ncRNAs are important regulatory molecules of many cellular processes in development and diseases, among which cancer, and have been identified as the key gene expression regulators.

The NCR group is mainly focused on three classes of ncRNA: microRNAs (miRNAs) long-non-coding RNAs (lncRNAs) and circular RNAs (circRNAs).

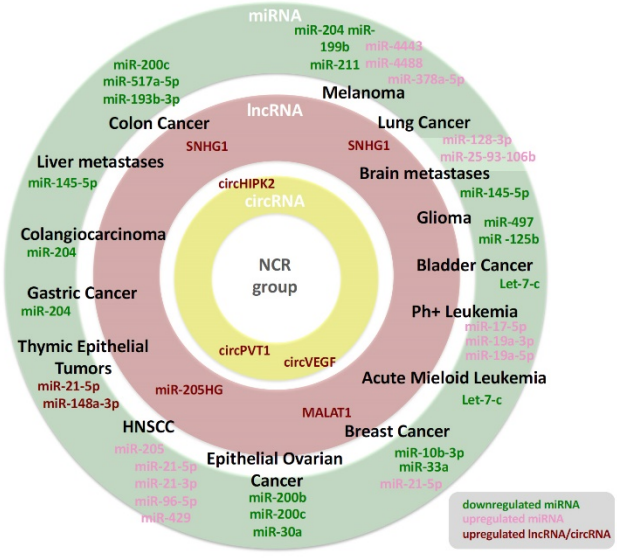
MiRNAs are small single-stranded molecules (20-24 nt) that derive from transcripts with distinctive hairpin structures. The hairpin is processed into mature miRNA by two endonucleases, Drosha and Dicer, and forms the RNA induced silencing complex (RISC). The miRNAs will pair with complementary sequences on target mRNAs transcripts through the 3'UTR, leading to gene silencing of the target.

LncRNAs are non-protein coding transcripts >200 nt in length that have been shown to control every level of the multi-level regulated gene expression pathway. For example, they are implicated in post-transcriptional gene regulation through controlling protein synthesis, RNA maturation and transport, the amount of available functional miRNAs, and in transcriptional gene silencing through regulating the chromatin structure.

CircRNAs are a large class of endogenous RNAs formed by exon skipping or back-splicing events as covalently closed loops, which are expressed abundantly in mammalian cells. CircRNAs can regulate transcription, RNA splicing and, as for lncRNAs, they can function as miRNA sponges.

The studies conducted by the NCR group are based on two principal approaches: a) one of more basic research approach that is intent to discovery the molecular mechanisms at the basis of rniRNAs, lnRNAs and circRNAs deregulation and functions in cancer cells; b) the other one is based on translational research approaches aimed to identify, by genome-wide screening, rniRNA, lncRNAs and circRNAs deregulated in tissue and liquid biopsies derived from cancer patients of our Institute, in way to discovery novel molecular biomarkers with clinical-prognostic impact and to develop innovative and more effective therapeutic approaches.

The research activity of NCR group, conducted in the last year, allowed to the identification of an intricate network between the three different classes of non- coding factors in several cancer types (Figure). Moreover, several studies focused on circulating ncRNAs in cancer patients, underling their promising use as novel powerful biomarkers. The obtained results lead to a deeper understanding of the molecular pathways involved in tumorigenesis and represent the basis for the identification of novel powerful biomarkers.



THE JOINT IRE – ISG MELANOMA TRANSLATIONAL GROUP

During year 2019, the group has built on a pre-existing collaborative network and has implemented a strategic methodological approach. A common limit of many clinical-molecular groups of this kind, bringing together very different pieces of expertise (conveyed by personnel from the clinic, surgery, laboratory and support units) is that they get quite widespread in the attempt to monitor patients at very different stages, with different needs, and who may benefit from very different models of assistance and care. Rather than attempting to follow individual patients, the Group has decided to focus most of its efforts in the context of a common all-inclusive framework. We call this framework Melanoma 4P. 4P stands for Precision, Predictive, Personalized and Participated. Precision means not only 'precision oncology' but also molecular, diagnostic, surgical and dermatological precision (individualized treatments and healthcare). Prediction means that the biomarkers are investigated that may help anticipating outcome and response to therapy. Personalized is to stress individual differences, but also underscores unpredictable and unanticipated evolution of the disease in certain patients. Finally, participated means that the patient is integral part of the study. From informed consent to enrolment in specific branches of melanoma 4P, there must be a continuous bi-directional data flow (communication) between the patient and the Melanoma 4P team. The idea behind all that is that no matter who takes care of whom, and whichever the patient needs or investigational goals, the activities are perceived as common, and must be informed by the 4Ps.

Obviously, one cannot incorporate these features ex-post. If the 4Ps have to be captured in full, one must be foresighted and make an effort to systematically collect clinical, biological, molecular info at preferred "stations" during the natural history of the disease. These stations must be representative of early and late stages altogether, and must be located at crucial railroad switches, those that route the patient toward certain treatments and not others. To optimize the chances to identify routers and switches, the analytes being searched are in both tissue and blood (liquid biopsy). This resulted in the sampling/biobanking scheme depicted in the picture. To date, n. 90 patients were enrolled, 65 from the cohort at early stages, and 30 from the late-stage cohort. Five patients are common to the two cohorts, e.g. they are fast progressors. The point is being approached when we will be able to cover the entire natural history of the disease in selected patients. The analysis and molecular characterization has not yet started, but hopefully we will be able to backward reconstruct clinical and molecular histories of our patients and their melanoma tumors. Hopefully, recurrent patterns may emerge for improved classification and stratification. Although melanoma 4P started essentially as a non-hypothesis-driven project, extensive biobanking makes it possible to carry out second-round analyses of biobanked materials, which will hopefully lead to hypothesis-driven theories and validation. It will be of interest to see how the different professionals participating in Melanoma 4P will use the platform to ask specific questions and link their own expertise to the complementary expertise of their colleagues. The project is run under the supervision of Professors Gennaro Ciliberto and Aldo Morrone, Scientific Directors of the Regina Elena National Cancer Institute and S. Gallicano Dermatological Institutes, respectively. Collaboration of our twin Institutes is a plus enabling Melanoma 4P to span from prevention and Dermatology to Medical and Molecular Oncology in a single uninterrupted flowchart.

RARE TUMORS TRANSLATIONAL GROUP

Tumors are for definition considered rare when incidence is less than 6 cases in 100.000 people per year, but altogether rare tumors account for approximately 25%, of all cancers (approximately 18% solid rare cancers and 7% rare hematological diseases). Rare tumors are almost invariably associated with 5-year overall survival rates globally less than 50% as compared to 65% in common cancers. This overall worse prognosis is substantially linked to the limited medical expertise and the lack of evidence-based treatment guidelines that ultimately result from low frequency with scanty tissue banks and registries, few clinical trials, misdiagnosis (both clinical and pathological) and delayed diagnosis, all of which are serious obstacles to clinical decisions.

The estimates of incidence, prevalence and survival of rare cancers in Italy are based on the pool of the AIRTUM cancer registries (years 2000-2010) and it was estimated that about 360.000 people were diagnosed with new cancers in Italy in 2011, with an annual incidence rate of about 200 rare cancers per 100,000 corresponding to about 89,0000 new diagnoses annually.

With a yearly admittance of 1,000 new cases and 3,000 total patients being followed per year, IRCCS Regina Elena represents one recognized center for the diagnosis and treatment of rare solid tumors.

Over the past 10 years, IFO played an active role in the collaborative efforts of the national network on rare tumors (Rete Tumori Rari, RTR). Since 2016 IFO are involved in EURACAN (EUropean network for Rare Adult solid CANcer) and have become a European Referral Center for eight rare tumors (soft tissue, viscerae and bone sarcomas, rare neoplasm of the male genital organs, and of the urinary tract, neuroendocrine tumors, rare neoplasm if the digestive tract, rare neoplasm of endocrine organs, rare neoplasm of the thorax, rare neoplasm of the skin and eye melanoma, rare neoplasm of the brain and spinal cords). Main objectives of EURACAN are to improve the quality of care of all European patients affected with rare cancers enabling a major improvement in the access to centers of excellence for diagnosis and treatment and unifying the availability of optimal clinical practices in the EU by centralizing knowledge and experience, medical research, training, and resources. A European Collaborative Platform and a Clinical Patient Management System (CPMS) are actually in development in order to discuss and to share clinical cases of patients with rare tumors all over the European centers of the network. In 2019, IFO domain leaders have been involved in virtual meetings and asked to participate in panel of experts

Our Institute is actively involved in International collaboration and revision of specific guidelines of various type of rare tumors and is engaged in national and international clinical trials. Since 2018, the Rare Tumors Translational Group has been participating in the European trial ARCAGEN (EORTC-SPECTA) whose aim is to perform a molecular characterization of rare cancers on retrospective and prospective biological samples. Retrospective cases have been collected and the accrual of prospective cases is actively ongoing.

Clinical cases of rare tumors having access to our institute are discussed in meeting, scheduled on weekly or biweekly basis, by dedicated multidisciplinary disease management teams in order to assure an adequate clinical, radiological and pathological assessment leading to a correct diagnosis and an appropriate treatment inside or outside national or international experimental trials. In 2019, integrate care pathways in rare tumors have been moreover elaborated in order to assure timely taking charge of the patients

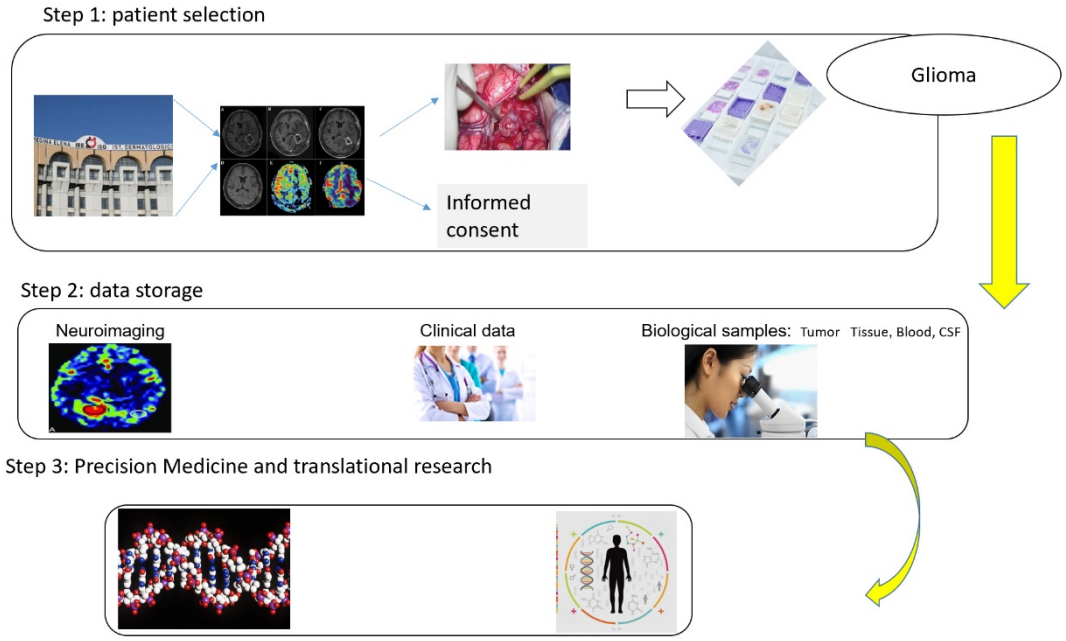
A dedicated group of data managers is actively involved in the prospective registration of all case of rare tumors accessing to our Institute on a database including all relevant clinical information and follow up updates. For some rare tum or s (for example soft tissue and bone sarcomas) a regular process of institutional biobanking of blood and pathologic specimens is ongoing.

In order to facilitate the access of patients with rare tumors and diseases and to offer them dedicated diagnostic and therapeutic pathways, a specifically addresses desk is being activated.

Increasing emphasis is moreover given to the collaboration with basic researchers to identify, as for more common cancers, molecular diagnostic, prognostic or predictive biomarkers and regular translational meetings, under the supervision of our Scientific Direction, are organized on bimonthly basis.

EURACAN Network distribution

BRAIN TUMORS TRANSLATIONAL GROUP



Despite standard multimodality treatment including surgical ablation followed by radiotherapy plus concomitant and adjuvant chemotherapy with temozolomide, the prognosis of malignant gliomas remains unsatisfactory. Median survival in Glioblastoma Multiforme (GBM) patients is of 14.6 months and the average 5-years survival rate is less than 9.8%, with very few cases of long-term survivor, thus justifying the research on novel more effective therapies. The understanding of the molecular mechanisms of Glioma tumors has significantly evolved over the last decade and translational programs based on a large clinicobiological database are required to improve our understanding of GB biology, potentially facilitating the development of personalized and specifically targeted therapies and research applications. Successful biomaterial collection is a key requirement for the application of contemporary methodologies for the validation of candidate prognostic factors, discovery of new biomarkers and clinical implementation of precision medicine (eg, target therapies and immunotherapies).

Recent progress has been made possible by using advanced molecular analysis of brain tissue specimens systematically collected and stored in tissue repositories, including bioinformatics analysis of molecular data and integration with clinical information.

In the last years , the Regina Elena Cancer Institute promoted the Glioma Translatonal Group through multidisciplimnary collaboration between clinicians and researchers.

The primary aim of this collaborative group was to create a joint repository of tumor tissue, blood and CSF samples developing and mantaining a neuroncological biobank.

Collection and storage of biospecimens are offered to all patients undergoing surgery or submitted to neuroncological treatments including those obtained not only at disease onset but also at recurrence. In general, brain tumor patients are followed longitudinally from diagnosis throughout their disease course. An imaging repository is annexed to the clinical data and specimens that include MRI studies following a standardized protocol with pre- and postcontrast T1, T2, diffusion and non-morphological sequences.

With tissue specimens and pertinent clinical information the database has a role in both clinical and research development: at an individual level a personalized approach to precision medicine allows direct patient treatment

At present, several translational studies are ongoing:

- Radiomic imaging studies are under development to align patterns in MR images with molecular and clinical features (Glioma Project);

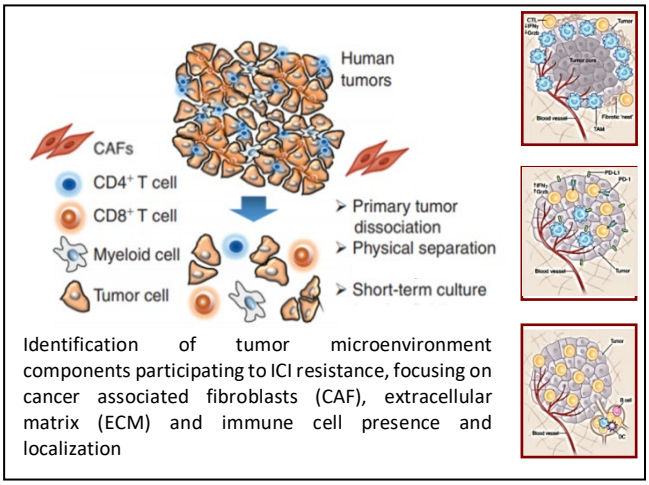
- In the framework of glioma's group, target diagnostic panels of tumor-specific mutations, including the most characteristic mutations of proto-oncogenes and suppressors, as well as circulating miRNA profiling, are being developed for primary preclinical diagnosis based on NGS using platforms, already available in our institute, such as Ion-AmpliSeq (Thermo Fisher Scientific) for DNA and Illumina for miRNA sequencing.
- To investigate if circulating miRNAs could mirror the mutational status of IDH1 we explored, through genome-wide methodologies, the miRNA expression profile in serum samples of a discovery cohort of IDH1 mutant and IDH1wt glioma patients. We found, on the basis of prognostic value and IDH1 status, a serum signature of 10 miRNAs with a promising diagnostic and prognostic value as non-invasive tool to stratify gliomas according to IDH1 status and useful to complement the molecular analyses routinely carried out on formalin-fixed paraffin-embedded tissue biopsies.

Translational approach and the development of dedicated biobank are critical to promote translational researches in neuroncology..

IMMUNOTHERAPY TRANSLATIONAL GROUP

Over the past few years, novel anticancer immunotherapy strategies, such as immune checkpoint inhibitors (ICI) and adoptive T-cell therapies, have shown remarkable clinical success across several tumor types, generating a wave of optimism in the oncology field. However, the durable regression of the disease achieved by immunotherapy approaches is currently limited to a subset of patients. The variability in patient response to cancer immunotherapies is due to the dynamic and complex nature of anticancer immunity, the existence of multiple immune-regulatory receptors/ligands and the heterogeneity in immunological composition, localization and function of the tumor immune microenvironment (TIME) cells.

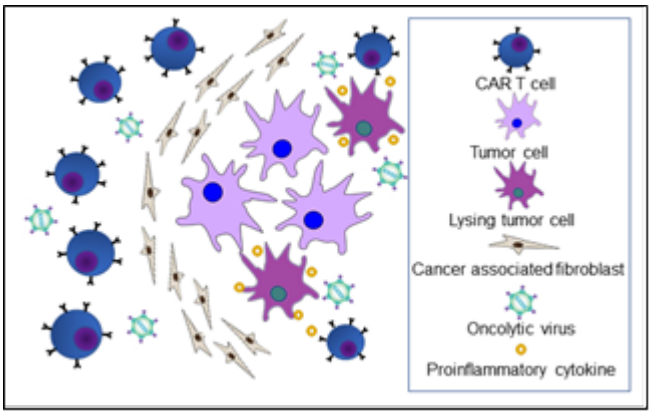
The group is developing a platform comprising of bioinformatics workflows and models that will stem from patient multi-omics integration. This asset will be exploited in future studies to guide optimal selection of best immunotherapeutic strategies for NSCLC patients, also in the framework of ongoing Alliance Against Cancer network clinical trials.



Identification of tumor microenvironment components participating to ICI resistance, focusing on cancer associated fibroblasts (CAF), extracellular matrix (ECM) and immune cell presence and localization

In particular, several lines of actions are in motion to this purpose:

- The application of deconvolution algorithms to bulk high-throughput screenings in order to dissect stromal cell populations in ICI responder vs. non-responder patients.
- The identification of mechanisms of resistance in ICI non responder patients to design strategies to stimulate a non-immunogenic microenvironment TIME, e.g. radiotherapy



CAR T-cell therapy is based on the administration of genetically modified T-lymphocytes specifically redirected to the tumor target by the expression on the lymphocyte cell surface of Chimeric Antigen Receptors (CARs). This therapy has been particularly effective in the context of B-cell lymphoproliferative diseases, while in other hematological malignancies and in solid tumors, so far, the efficacy has been much more limited. CAR T-cells therapy remains a challenge in solid tumors due to the presence of a TIME that may act as a physical barrier hampering CAR T-cell trafficking. The group is involved in a research project promoted by the Ministry of Health and developed under the aegis of Alliance Against Cancer. In particular, we are focused on the development of different strategies aiming at modulating the immunosuppressive elements to overcome the inhibition exerted by TIME to CAR T-cell therapy. The group currently carries out the following tasks:

- Development of bioinformatics methods to identify mechanisms of T-cell exclusion in solid tumors, such as Cancer Associated Fibroblasts RNA signatures, focusing on NSCLC and HNSCC.
- Implementation of a strategy to support CAR T-cell penetration into the solid tumors via the delivery of oncolytic viruses in a murine model of head and neck cancer.
- Identification of innovative biomarkers predicting CAR T-cell therapeutic response in human sarcomas

DISEASE SPECIFIC UNITS

BREAST UNIT

Coordinator: Dr. Roy De Vita, MD

Mission

To offer an integrated and quality program to guarantee the care of patients with a diagnosis of suspected or ascertained breast cancer in the various phases of diagnostic confirmation and therapy, in order to improve the continuity of care, consistent with the lines guide based on the available evidence and with the most current scientific research lines.

All patients will be offered the same entry possibilities into clinical trials that may be underway at the Institute for each individual case.

The program also aims to:

- Improve waiting times for the therapeutic diagnostic process, by setting company standards;
- Improve the information and communication aspects with the patient,
- Optimize and monitor the quality levels of the care provided, through the identification of process and outcome indicators and the development of a data collection and analysis system.

Moreover the program intends to consolidate the relationships with voluntary associations through systematic participation, scientific dissemination initiatives, with the General Practitioners Association and with the Medical Association of Rome.

The program also implements the systematic data collection for patient monitoring using the EUSOMA software and according with EUSOMA requirements and standards in order to be able to compete at European level.

Clinical Activities

The program is divided into the following phases:

A) Organization of activities: the assistance model
B) Patient access
C) Diagnostic phase: diagnostic therapeutic evaluation of the multidisciplinary team
D) Therapeutic phase
E) Follow-up
F) Advanced treatment of cancer

Research Activities

Developing strategies for permanent professional training and information addressed to the citizens are part of the scientific/informative activities of the Breast Unit

.

HPV UNIT

Coordinator: Dr. Aldo Venuti, MD

Mission

Main mission is to formalize an organizational model of a "unified and coordinated space" in which originate jointly initiatives related to the topic of HPV This organizational model is a tool to inform, train and network both patients and health workers involved in HPV-related pathologies, from gynecological area to the skin, comprising ENT, urological and proctologic diseases. Finally, HPV-Unit is organized to deliver HPV vaccines to women and men.

Clinical Activities

The primary activity was focused on coordinating diagnostic interventions by clinical interpretation of molecular data from assay tests, ad vice in evaluation of clinical cases by clinical teams, outpatients counseling and advising in preventive actions like individual screening or HPV vaccination. As a specific clinical activity of HPV-Unit, HPV vaccination to women as adjuvant therapy after conization was further improved indicating clinical effectiveness in disease relapse prevention up to 2years with beneficial effect as an adjuvant treatment additional to surgery. A large multicentric study will start in 2019/20 in which HPV-Unit/IRE will be involved as coordinatingCenter.

Research Activities

Developing strategies for permanent professional training and information addressed to the citizens are part of the scientific/informative activities of HPV- UNIT. In particular, information about HPV-UNIT (the organizational model) to health workers was presented in many National and International Meetings. HPV-Unit was also involved in translational researches on: *New immunotherapies of HPV-associated cancers A* genetic vaccines is patent pending (Patent is expected in 2019- 2020); *Molecular carcinogenesis.* Analysis of available data regarding modulation of TLRs and cytokines in HPV-associated cancer; HPV *molecular epidemiology.* For the first time, HPV-Unit data showed that latent infection by HPV16 is widespread in normal oropharyngeal tissues suggesting that the altered ability to eliminate latent infection could be risk factor for recurrent disease

SPECIAL EVENTS

INTERNATIONAL WORKSHOP ON CANCER GENOMICS – 8/9 APRIL 2019

The IRCCS National Cancer Institute Regina Elena organized the 2nd International Workshop on Cancer Genomics which took place at the IFO Multimedia Center on 8-9 April 2019.

The Workshop opened with welcome speeches by Dr. Armando Bartolazzi (Under Secretary of the Italian Ministry of Health in 2019), Dr. Francesco Ripa Di Meana (General Director of IFO) and Prof. Gennaro Ciliberto (Scientific Director of IRE).

The Workshop was divided into two sessions:

1. Identification of oncogenic drivers and personalized therapy
2. Clinical implementation of precision cancer medicine

This Workshop was an intensive 2 day forum that brought together a distinguished faculty of scientists and clinical oncologists, who work at the forefront of cancer research, in order to discuss the following objectives which aim to a) discuss some of the most pressing clinical and pre-clinical issues in genomics-oriented cancer research; b) present a realistic view regarding the scientific, financial and regulatory hurdles faced by the soon-to-be diffused implementation of precision cancer medicine.

The advent of massive parallel DNA sequencing has made it possible to investigate the genomic abnormalities of cancer cells to an unprecedented level of complexity. This, in turn, has allowed genetically altered oncogenic drivers to be identified and exploited for therapeutic targeting in a sizeable fraction of human cancers. Persistent technological advancements have also made NGS implementation in the routine clinical pathology setting not only cost-effective, but also feasible. Finally, joint efforts by the academia and pharmaceutical industry have led to increasingly rapid development, clinical testing and eventual approval of a host of innovative, genomics-based, cancer therapeutics. Together, the above factors have ushered precision cancer medicine in routine clinical care, effectively producing a paradigm shift in clinical oncology. It must be recognized though, that the successful clinical exploitation of cancer genomics still remains a challenging issue in a large fraction of tumor types, which, inevitably, conflicts with the ever-increasing optimistic expectations of patients and physicians.

The Workshop ended with closing remarks from Prof. Gennaro Ciliberto.

RESIDENTIAL SEMINAR AT VILLA MONDRAGONE – FRASCATI, ROME 17/18 MAY 2019

The National Cancer Institute Regina Elena organized a Residential Seminar regarding the strategic research plan and the integration between research and assistance at the IRE Institute.

The seminar took place at Villa Mondragone (Frascati, Rome),17/18 Maggio 2019.

The conference opened with welcome greetings from Gennaro Ciliberto, IRE Scientific Director, Francesco Ripa di Meana, IFO General Manager, Aldo Morrone ISG Scientific Director.

Speakers

Maria Novella Luciani (Ministry of Health) presented the strategic lines of the Ministry of Health: a new path for the health researcher

Francesco Ripa di Meana presented the strategic plan of IFO and its impact on research

Gennaro Ciliberto presented IRE's strategic research plan

Paolo Marchetti (University of Rome "Sapienza") explained the purpose of the Virtual Consultation and the Molecular Tumor Board of the IRE.

Sandro Pignata (Pascale of Naples) presented the Oncology Network for research in Campania

Gerry Melino (University of Rome "Tor Vergata") exposed the values of science and the quality of research in Italy.

Giuseppe Sanguineti (IRE) exposed the implications that clinical research has had from the technological innovations that have been achieved in radiotherapy.

Roberto Biagini (IRE) presented the role of IRE as an assistance and research hub for rare tumors in the Lazio Region

Alessio D'Amato (Ministry of Health) exposed the role of IFO within the research strategy of the Lazio Region

Meeting

The meeting was attended by Administrators, Clinical and Experimental Researchers who shared and discussed the IRE projects belonging to the five research lines:

Line 1: Prevention and early diagnosis of cancer (Dr. Rita Falcioni and Dr. Vittoria Stigliano)

Line 2: Cancer Immunotherapy (Dr. Virginia Ferraresi and Dr. Aldo Venuti))

Line 3: Personalized and precision medicine in oncology (Dr. Francesco Marchesi and Dr. Patrizio Giacomini)

Line 4: Innovative approaches and technologies in the diagnostics and integrated therapies of tumors (Dr. Antonello Vidiri and Dr. Giuseppe Simone).

Line 5: Quality of life of the neoplastic patient (Dr. Andrea Pace and Dr. Marco Paggi)

Each of those in charge of the research lines presented the projects pertaining to their own research line.

Line 1. The projects of this line aim to identify new biomarkers for the diagnosis and prognosis of tumors with the final objective of programming new therapeutic strategies.

The 13 projects were sub-divided in two sub-groups of projects: 1) early markers of diagnosis and prognosis; 2) epigenetic biomarkers of development and neoplastic progression. This research line has the primary purpose of identifying a tumor at an early stage, when it has not yet spread to other

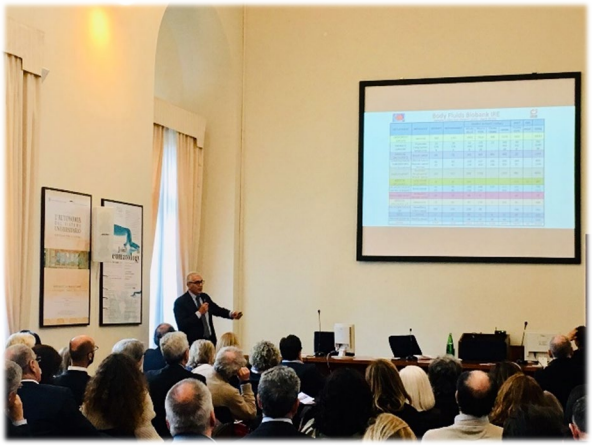
organs by metastasis. This can be done by screening tests or as part of a population screening program.

1. The existence of innovative molecular and instrumental diagnostic techniques makes it possible to carry out an early diagnosis of the tumor and to define its molecular characteristics that influence the therapeutic approach and the prognosis. This part of the research line predicts on one hand the access to biological materials coming from subjects predisposed to the onset of tumors due to hereditary-family causes, or environmental factors and on the other a multidisciplinary approach that takes into account bio-molecular competences, epidemiological, nutritional, virologic, radio diagnostic, endoscopic, clinical and surgical. These skills present at IFO will certainly have a positive influence to achieve the objectives set by the project.

2. The epigenetic aberrations play a crucial role in the development and progression of cancer. Indeed, alterations (loss or gain of function) of proteins able to influence transcription, translation and stability of the genome are frequently associated with transformation, both in solid and hematological tumors. The connection between the altered chromatin state and the development of the neoplastic pathology has yet to be functionally characterized and still requires a lot of effort.

The projects aim to identify new biomarkers for the diagnosis and prognosis of tumors with the final objective of programming new therapeutic strategies.

Line 2. The "Cancer Immunotherapy" Line includes the activity of translational research, both pre-clinical and clinical, aimed at improving the knowledge of the patient's basic anti-tumor immunological mechanisms and optimizing the generation of vaccines, engineered T cells and use of new molecules and immunomodulatory strategies. The line includes 11 projects, 7 of which are translational and 4 predominantly clinical. The 7 translational projects are directed towards the study of the mechanisms of immune evasion and on the analysis of the molecular and immune profile of the individual patient ("Immuno-profiling") and of the possible approaches to modifying / modulating the tumor microenvironment as well as to the identification of response biomarkers. The 4 clinical projects are aimed at combining immunotherapy and target therapy, local immunomodulatory approaches such as radiotherapy, and therapeutic vaccines, as well as identifying biomarkers able to select patients both for the purpose of achieving maximum effectiveness and to minimize toxicity from various therapeutic strategies in view of an increasingly personalized therapy also with regard to immunotherapeutic approaches.



Line 3. The qualifying elements of this line of research are to identify new cancer vulnerabilities and develop new pharmacological approaches to selectively target them. In this perspective, the projects aim to investigate and strike vulnerabilities in cells where DNA repair is defective; the identification of molecular "signatures" associated with susceptibility or pharmacological resistance through cellular and animal models; through liquid biopsy, a noninvasive method, part of the research is trying to understand the vulnerability of tumors in biological fluids. Many of the clinical studies published in 2018 follow the same strands of translational research as above. For example, among the results of this research study, there is the promotion and participation of IRE clinical researchers in mono- and multi-centric protocols for evaluating the efficacy and improvement of treatments for various types of neoplasms. A separate chapter deserves the activities of the newly established (in 2018) Molecular Tumor Board (MTB) in which the Institute began to use advanced genomic tools and an 'agnostic' perspective of the tumor histotype to assign out-of-indication therapies to patients who have not therapeutic chance. However, they are in general conditions such that they can take advantage of a repositioning of antineoplastic drugs known to be effective in different indications. These studies will greatly expand the indications of many drugs in use and explore the impact of new molecular metrics on therapeutic efficacy.

Line 4. The projects pertaining to this line of research have the main purpose to: i) use diagnostic approaches and innovative technologies of functional imaging and/or molecular methodologies; ii) use mini-invasive and multimodal/integrated treatments.

Specifically, these projects will translate the most recent experimental acquisitions from the research to the patient bedside in the shortest possible time; will implement and innovate standard therapies through advanced diagnostic/therapeutic technologies; will optimize outcomes by validating preclinical and clinical models.

This is possible through the integration of synergistic and complementary skills of molecular biology, pathological anatomy, endoscopy, surgery, radiotherapy, radiology, nuclear medicine, medical physics.

Line 5. In oncology patients the benefits of extended survival and/or progression delay have to be carefully balanced against the side effects of treatments and their potential negative impact on functioning and quality of life. Hence, the concept of health-related quality of life (HRQOL) should be included as an outcome measure supplementing traditional endpoints such as (progression-free) survival time in clinical trials evaluating the effect of treatment. The research projects included in this line are focused on several issues related to HR – QOL: QOL assessment in different settings of care (elderly patients, long survivors); central and peripheral neurotoxicities of anticancer treatments; oncology rehabilitation; gender issues (fertility preservation); Patient Reported Outcome (PRO) tools of assessment; rare tumors therapeutic pathways.

4TH MEETING OF THE ALLIANCE AGAINST CANCER (ACC) – 20/22 NOVEMBER 2019

The National Cancer Institute Regina Elena organized the 4th Meeting of the Alliance Against Cancer (ACC) Conference which was held in Rome, at the Aula Magna of the Rectorate of the "Sapienza" University, on 20-22 November 2019.

The meeting entitled: "New Technologies and Strategies to Fight Cancer", was held to discuss relevant issues concerning the diagnosis, prognosis and treatment of tumors. Forging a pathway from genomics to clinical care to create new opportunities and challenges for precision medicine. The meeting opened with the session reserved for discussing the reports of the Working Groups (Immunotherapy, Lung, Breast, Glioblastoma, Genomics / Bioinformatics, Melanoma, Colon, Onco-hematology and Pathology/Biobanks). In this session, the secretaries of each working group presented a data summary of the projects financed in 2016/2018; followed by three symposia ("Preclinical and Clinical Challenges in Cancer Immunotherapy", "Cancer Genome Driven Oncology" and "Tumor Progression and Metastasis") where prominent scientists and clinical oncologists who work at the forefront of cancer research met to discuss some of the most pressing clinical and pre-clinical issues on cancer research and on the current progress in improving therapy of many cancers.

The conference was addressed with a welcome speech from Prof. Ruggero De Maria, President of ACC; from Prof. Carlo Della Rocca, University of Rome "Sapienza", who brought greetings and best wishes from the Magnificent Rector of the University Prof. Eugenio Gaudio; Dr. Giovanni Leonardi, Director General of Research and Innovation of the Ministry of Health; Dr. Alessio D'Amato, Councilor for Health and Innovation; Dr. Maria Novella Luciani, Manager at the Cabinet office of the Ministry of Labor of Health and Social Policies and finally greetings and best wishes from Prof. Francesco Ripa di Meana, General Director of the IFO.

The first session on immunotherapy addressed issues existing in innovative therapies in pediatric neoplasms through the use of CAR-T cells. The molecular mechanisms underlying radiation-induced immune modulation and immunomodulatory antibody therapy were also investigated. In addition, the use of a test called "Tumor Mutational Burden" (TMB) was discussed. It is an innovative test that will guide the correct use of immunotherapy.

Prof. Gennaro Ciliberto opened the second session by introducing Prof. Alberto Bardelli's Lectio Magistralis who uncovered the evolution of colorectal cancers and the consequent change in the "target" therapies that are administered in this type of pathology.

The second session was dedicated to Onco-genomics in which liquid biopsy, a new generation diagnostic approach that allows us to understand which tumors will progress after the first therapeutic approach was discussed. Next, two reports regarding a pilot study that analyzed 100,000 genes for each patient to decide which drug and administration schedule was the most appropriate way to treat the tumor. This project, funded by the British Ministry of Health, is extended to other pathologies besides cancer and involves the most important Research and Care Institutes in England.

The third session addressed the problem of tumor heterogeneity and the control of the transcription of the genome during tumor progression. In particular, new integrative analysis were discussed to study the metastatic spread and ways on how to improve therapy targeting of the tumor-associated macrophages instead of tumor.

530 participants attended the conference, and more than 100 abstracts were presented among which 4 15-minute presentations were selected from young researchers who applied for the oral presentation.

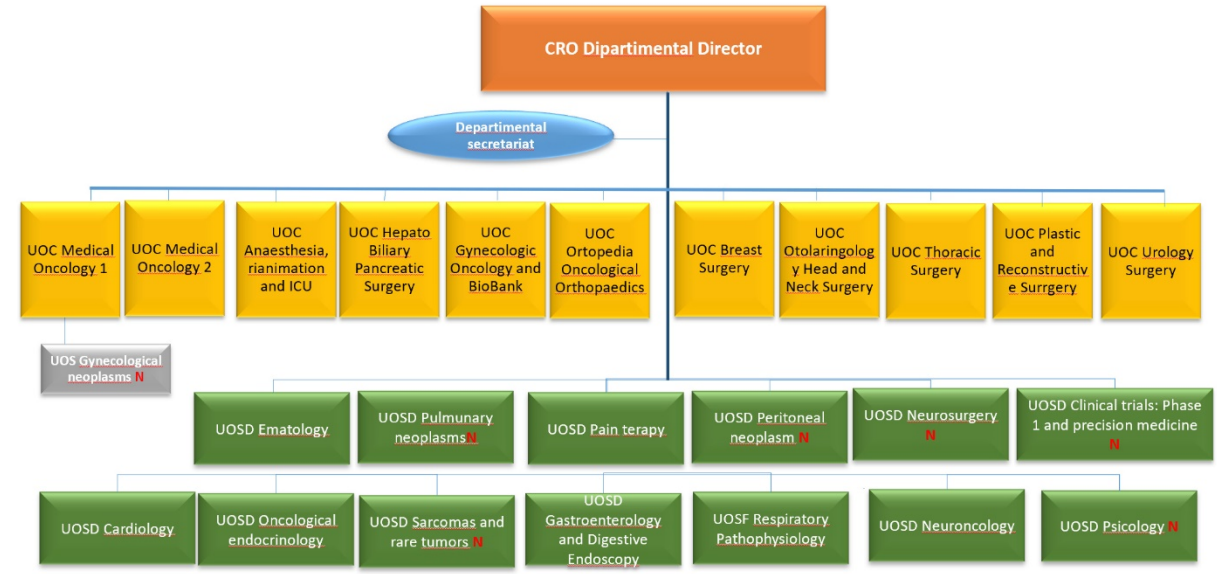
In addition, 5 interventions by the pharmaceutical industries revealed innovative techniques that allow to improve the diagnosis and prognosis of tumors.

During the three days conference, the different working groups met in separate sessions to discuss future projects related to period 2019/2020. These working sessions were open to meeting participants who were interested in the tumor pathology under discussion.

At the end of the conference, there was an intervention by Prof. Federico Calligaris Cappio, Scientific Director of AIRC, who spoke about AIRC funding for cancer research in Italy. Next, Prof. Pier Giuseppe Pelicci, Director of Research of the European Oncological Institute, presented the future strategies of the ACC consortium and Dr. Paolo Pronzato, Director of the Oncology Department of the San Martino Hospital, who presented a report on Personalized Oncology.

The conference was closed with greetings and thanks from Prof. Ruggero De Maria.

DEPARTMENT OF CLINICAL AND ONCOLOGICAL RESEARCH



N = New institution

DEPARTMENT OF CLINICAL AND EXPERIMENTAL ONCOLOGY

Director: Dr. Roberto Biagini

DIGESTIVE SURGERY UNIT
Head: Dr. Mario Valle, MD

Staff

Fabio Carboni, MD
Orietta Federici, MD
Settimio Zazza, MD
Manuel Gioffrè, MD fellow
Vincenzo Farina, MD trainees

Clinical Activity

A research protocol of treatment has been started in 2019: multicentric study on pressurized intraperitoneal aerosol chemotherapy (PIPAC) in patients with peritoneal carcinomatosis of colorectal, ovarian, gastric and primary peritoneal origin, not suitable for peritonectomy with HIPEC. The technique is a new approach of chemotherapy delivery in the abdominal cavity first described at the Rhur University of Bochum, Germany.

It allows a more homogeneous and concentrated diffusion of the chemotherapic agent in the closed space of the abdominal cavity. Drug doses are ten times lower than those used ijn HIPEC, since the increased intraperitoneal pressure seems to improve the intratumoral spreading of the drug.

PIPAC does not replaces HIPEC, which is a curative treatment, but it may limit the progression of carcinoisis and improve patient prognosis and quality of life. PI: Dr O.Federici

Peritoneal Carcinosis: The Unit has become, from experience and case studies, one of the two reference centres for pathology in Italy. A collaboration is underway with the Oncoteam SICO Peritoneal Carcinosis for the establishment of a National Register sponsored by the Italian Society of Oncological Surgery. A national survey on ovarian cancer carcinosis-derived is underway. In the Institute is ongoing: Pilot study of association between expression and heterogeneity of DNA damage markers and clinical outcomes in patients undergoing peritonectomy and hipec for peritoneal carcinosis from ovarian cancer. PI: Dr Valle; Dr.Carboni

AMAD - Multidisciplinary Outpatient Clinic for the Digestive System, Activity Report 4/10/2016 - 5/12/2017

AMAD was activated the 1st October 2016. The activities are under the direct responsibility of Dr.

Zazza and carried out by an Oncologist Surgeon and a Medical Oncologist, who evaluate in a multidisciplinary way all patients affected by Neoplasms of the Digestive System, especially patients with Colo-Rectal cancers, providing initial visits and follow up visits, applying the paths described in the relevant PDTA and reporting to DMT, with the support of a Case Manager and making use of spaces specially created by all the other UOC, UOSD and Services.

Research Activity

Peritoneal Disease: Translational research of micro-RNA modifications induced by HIPEC.

Minimally Invasive Techniques in Surgical Oncology: The experts are well aware of the work published by our group on laparoscopic diagnosis of peritoneal carcinosis and hyper-thermal antiblastic perfusion of the abdomen in refractory neoplastic ascite with mini-invasive access (Cancer Journal 2009, EJSO 2009). The group's experience in advanced minimally invasive surgery in over 20 years of activity also includes colon and rectum resection, wedge resections of the stomach and small intestine, distal pancreasectomy, splenectomy for haematological diseases, adrenalectomy. PI: Dr. Mario Valle - Dr. Orietta Federici

Rectal Cancer: Screening and Early Diagnosis of anus cancer by high-resolu8on cytology and anoscopy (HRA). Pilot study in collaboration between this Unit and the Infectious Dermatology UNIT of the San Gallicano Institute. PI: Dr Settimio Zazza. Colorectal Tumors and Rare tumors of the Colon: Patients are being recruited to test the new device

ULTRAPLACAD (ULTRAsensitve PLAsmonic devices for early Cancer Diagnosis) within the framework of the European project (funds 15/07/R/33) headed by Dr Giacomini (Oncogenomics Laboratory). From the preliminary results, the possibility of identfying circulating neoplastic DNA, which could be of great useful in the early diagnosis of primary tumors and relapses after treatment. The indications for front line chemotherapy, appears very promising. PI: Dr Fabio Carboni; Dr Settimio Zazza.

Retro Peritoneal Sarcoma: This topic is discussed within sarcoma DMT activity. PI: Dr.Valle

Publications

1. Gastric hybrid schwannoma/perineurioma. Carboni F, Valle M, Covello R. Cir Esp. 2019 May;97(5):292-294. doi: 10.1016/j.ciresp.2018.06.022. Epub 2018 Oct 26. English, Spanish. No abstract available. PMID:31068255
2. Unusual incidental finding: Azygos vein continuation. Carboni F, Bertini L, Valle M. Surgery. 2019 May; 165(5):p1050-1051.
3. Response to Lee et al. 'Addressing the empty pelvic syndrome following total pelvic exenteration: does mesh reconstruction help?' Carboni F, Federici O, Valle M. Colorectal Dis. 2019 Apr;21(4):490. doi: 10.1111/codi.14577. Epub 2019 Feb 26. No abstract available. PMID:30724458
4. Emergency Surgery for Small Bowel Metastasis from Melanoma: Report of Three Cases. Carboni F, Valle M, Giofrè M. Am Surg. 2019 Mar 1;85(3):e135-e136. No abstract available. PMID:30947787
5. Recurrence of gallbladder carcinoma 12 years after laparoscopic cholecystectomy Carboni F, Federici O, Giofrè M, Diodoro M, Valle M. Clin Res Hepatol Gastroenterol. 2019 Feb;43(1):e1-e3. doi: 10.1016/j.clinre.2018.08.002. Epub 2018 Aug 30. No abstract available. PMID:30174266
6. An 18-Year Experience in Diagnostic Laparoscopy of Peritoneal Carcinomatosis: Results from 744 Patients. Carboni F, Federici O, Giofrè M, Valle M. J Gastrointest Surg. 2019 Aug 20. doi: 10.1007/s11605-019-04368-w. [Epub ahead of print] PMID:31432327
7. Giant Primary Retroperitoneal Dedifferentiated Liposarcoma. Carboni F, Valle M, Federici O, Covello R, Garofalo A. J Gastrointest Surg. 2019 Jul;23(7):1521-1523. doi: 10.1007/s11605-018-3851-5. Epub 2018 Jun 29. No abstract available. PMID: 29959642
8. Upfront debulking surgery versus interval debulking surgery for advanced tubo-ovarian high-grade serous carcinoma and diffuse peritoneal metastases treated with peritonectomy procedures plus HIPEC. Biacchi D, Accarpio F, Ansaloni L, Macrì A, Ciardi A, Federici O, Spagnoli A, Cavaliere D, Vaira M, Sapienza P,

Sammartino P. J Surg Oncol. 2019 Dec;120(7):1208-1219. doi: 10.1002/jso.25703. Epub 2019 Sep 17. PMID:31531879

9. Letter to Sullivan BJ et al. "Diaphragmatic Peritoneal Stripping Versus Full-Thickness Resection in CRS/HIPEC: Is There a Difference?" Carboni F, Valle M. Ann Surg Oncol. 2019 Dec;26(Suppl 3):871. doi: 10.1245/s10434-019-07949-w. Epub 2019 Oct 18. No abstract available. PMID:31691108
10. Uncommon retroperitoneal tumour: follicular dendritic cell sarcoma. Carboni F, Covello R, Bertini L, Valle M. Acta Chir Belg. 2019 Nov 12:1-3. doi: 10.1080/00015458.2019.1689646. [Epub ahead of print] PMID:31690245
11. Late isolated subcutaneous metastasis from colon cancer. Carboni F, Marandino F, Valle M. ANZ J Surg. 2019 Nov;89(11):E523-E524. doi: 10.1111/ans.14837. Epub 2018 Oct 22. No abstract available. PMID:30347521
12. Mixed adenoneuroendocrine carcinoma of the cecum. Carboni F, Valle M, Russo A. Clin Res Hepatol Gastroenterol. 2019 Nov;43(6):627-629. doi: 10.1016/j.clinre.2019.02.002. Epub 2019 Mar 8. No abstract available. PMID:30853491
13. Empty pelvis syndrome: the use of breast prosthesis in the prevention of complications. Carboni F, Federici O, Giofre' M, Zazza S, Valle M. Colorectal Dis. 2019 Nov;21(11):1321-1325. doi: 10.1111/codi.14737. Epub 2019 Jul 9. PMID:31230404

HEPATO BILIARY PANCREATIC SURGERY UNIT

Head: Dr. Gian Luca Grazi, MD, PhD

Staff

Marco D'Annibale, MD
Giovanna Grazioli, Chief Nurse
Andrea Oddi, MD
Pasquale Perri, MD

Mission

To increase the knowledge for hepatobiliarypancreatic diseases surgically treatable. To treat, to propose innovation in the evaluation and in the cure and to study neoplastic diseases of the liver, pancreas and biliary tree. To evaluate the application of newly proposed surgical techniques, such as laparoscopy and robotics. To improve the postoperative approach of the patients with specific protocols of enhanced recovery after surgery

To offer surgical treatment for neoplastic colorectal diseases in a multidisciplinary setting. To define specific paths, from first suspected diagnosis to the appropriate treatment. To establish a stable network for referral and management of patients with hepatobiliary, pancreatic and colorectal tumors, in the view of the Regina Elena National Cancer Institute acting as a tertiary referring center for patients carrying such neoplasms.

Clinical Activity

This is a General Surgery Unit with the main task of treating diseases of the liver, pancreas and o biliary tract. The vast majority of these surgical procedures are performed for malignant diseases, but also complex operations needed for benign diseases are carried out. Liver metastases from colorectal cancer are the condition for which the larger portion of the surgical procedures are performed. The second most frequent disease is hepatocellular carcinoma, which can arise in cirrhotic and non-cirrhotic patients. The remaining portion of liver resection are performed for cholangiocarcinomas, both in intrahepatic and in perihilar locations. The Unit is among the four of the Lazio Region Health System which constantly perform more than 50 surgical procedures for primary liver tumor each year.

There are a consistent number of procedures performed for pancreatic cancers, either for pancreas head or tail. Furthermore, the unit provides treatment for patients with colorectal neoplastic diseases. A multimodal approach for rectal cancers is usually offered to the patients.

A mini-invasive surgical program based on the laparoscopic and on the robotic techniques is fully active for hepatobiliary, pancreatic and colorectal procedures.

The average value of the DRG's produced by the Unit is 2.60.

Research Activity

The Units collaborates with the following national or international registries:

- LiverGroup.org
  a collaborative of international liver surgeons to study the outcomes of liver surgery
- Euro-Cholangio-Net
  The European Cholangiocarcinoma Network
- I Go MILS
  prospective national database of mini-invasive liver resections
- IGOMIPS
  Italian registry of mini-invasive pancreatic surgery
- HeRCOLEStudy Group
  Hepatocarcinoma Recurrence on the Liver Study Group

PUBLICATION

1. Bacalini MG, Franceschi C, Gentilini D, Ravaioli F, Zhou X, Remondini D, Pirazzini C, Giuliani C, Marasco E, Gensous N, Di Blasio AM, Ellis E, Gramignoli R, Castellani G, Capri M, Strom S, Nardini C, Cescon M, Grazi GL, Garagnani P.
   Molecular Aging of Human Liver: An Epigenetic/Transcriptomic Signature. J Gerontol A Biol Sci Med Sci. 2019 Jan 1;74(1):1-8. doi: 10.1093/gerona/gly048.
2. Di Leo L, Vegliante R, Ciccarone F, Salvatori I, Scimeca M, Bonanno E, Sagnotta A, Grazi GL, Aquilano K, Ciriolo MR.
   Forcing ATGL expression in hepatocarcinoma cells imposes glycolytic rewiring through PPAR-α/p300-mediated acetylation of p53.
   Oncogene. 2019 Mar;38(11):1860-1875. doi:10.1038/s41388-018-0545-0.
3. Levi Sandri GB, Ettorre GM, Aldrighetti L, Cillo U, Dalla Valle R, Guglielmi A, Mazzaferro V, Ferrero A, Di Benedetto F, Gruttadauria S, De Carlis L, Vennarecci G; I Go MILS Group on HCC.
   Laparoscopic liver resection of hepatocellular carcinoma located in unfavorable segments: a propensity score-matched analysis from the I Go MILS (Italian Group of Minimally Invasive Liver Surgery) Registry. Surg Endosc. 2019 May;33(5):1451-1458. doi: 10.1007/s00464-018-6426-3.
4. Ruzzenente A, Bagante F, Bertuzzo F, Aldrighetti L, Campagnaro T, Ercolani G, Conci S, Giuliante F, Dore A, Ferrero A, Torzilli G, Grazi GL, Ratti F, Cucchetti A, De Rose AM, Russolillo N, Cimino M, Perri P, Guglielmi A, Iacono C.
   Liver Resection for Neuroendocrine Tumor Liver Metastases Within Milan Criteria for Liver Transplantation.
   J Gastrointest Surg. 2019 Jan;23(1):93-100. doi: 10.1007/s11605-018-3973-9.
5. Di Matteo S, Nevi L, Costantini D, Overi D, Carpino G, Safarikia S, Giulitti F, Napoletano C, Manzi E, De Rose AM, Melandro F, Bragazzi M, Berloco PB, Giuliante F, Grazi G, Giorgi A, Cardinale V, Adorini L, Gaudio E, Alvaro D.
   The FXR agonist obeticholic acid inhibits the cancerogenic potential of human cholangiocarcinoma. PLoS One. 2019 Jan 24;14(1):e0210077. doi: 10.1371/journal.pone.0210077.
6. Morsiani C, Bacalini MG, Santoro A, Garagnani P, Collura S, D'Errico A, de Eguileor M, Grazi GL, Cescon M, Franceschi C, Capri M.
   The peculiar aging of human liver: A geroscience perspective within transplant context.
   Ageing Res Rev. 2019 May;51:24-34. doi: 10.1016/j.arr.2019.02.002.
7. Cosimelli M, Ursi P, Mancini R, Pattaro G, Perri P, Parrino C, De Peppo V, Diodoro MG, Balla A, Grazi GL.
   Organ-saving surgery for rectal cancer after neoadjuvant chemoradiation: Analysis of failures and long-term results. J Surg Oncol. 2019 Dec 1. doi: 10.1002/jso.25794.

THORACIC SURGERY UNIT
Head: Dr. Francesco Facciolo, MD

Staff

Sandro Carlini, MD
Edoardo Mercadante, MD
Gabriele Alessandrini, MD
Virna Cerasoli, MD
Felicita Corzani, MD
Daniele Forcella, MD
Enrico Melis, MD
Filippo Tommaso Gallina, MD
Luigi Mosillo, MD
Nicoletta De Bello, Nurse
Adriana Ciacci, Case Manager
Simona Molinaro, Nurse
Antonio Ricciuti, Nurse
Alessio Calabretta, Nurse
Valeria Simonetti, Nurse
Vincenzo Lodico, Nurse
Silvia Fiorillo, Nurse
Chiara Spadavecchia, Nurse
Rossella Amato, Nurse
Raffaele Tomasone, Nurse

Mission

Surgical management of primary and secondary malignancies of the thorax (lung, mediastinum, pleura, chest wall, thoracic inlet, esophagus, trachea) with radical/ palliative / diagnostic intent.

Clinical Activity

Mainly focused on Locally Advanced Lung Cancer, Malignant Pleural Mesothelioma, Thymic Malignancies, Primary Tumors of the Chest Wall. Routinary employment of minimally-invasive techniques for major operations - Robot-Assisted Thoracoscopic Surgery (RATS); Video-Assisted Thoracoscopic Surgery (VATS) - and minimally-invasive diagnostic techniques - Fiber- Optic Bronchoscopy, EUS and EBUS. Implementation of protocols for early extubation after surgery, post-operative fast-track rehab, management of post-operative pain. Active cooperation with basic science departments for translational research.

Research Activity

Coordinator center of two multicentric studies of new prognostic factors of early stage NSCLC and sarcoma pulmonary metastases. Contributor center of a prospective multicentric study about the prognostic impact o the kind of lymphadenectomy and lymph node characteristics on node positive patients underwent anatomical lung resection. Contributor center of a prospective multicentric study about the robotic approach in the treatment of locally advanced NSCLC after induction therapy. Collection and banking of tumoral and healthy tissue from lung cancers, thymomas, mesotheliomas for study of tumor's microenvironment and growth factors, cancer stem cells isolation and colture, identification of genomic signatures (miRNAs) and molecular prognostic factors; collection and banking of blood / serum / plasma samples from patients with malignancies of lung, thymus, pleura as circulating counterparts of tissutal samples for identification of peripheral diagnostic I prognostic markers. Active collaboration with ITMIG

Publication

1. Chiappetta M, Leuzzi G, Sperduti I, Bria E, Mucilli F, Lococo F, Spaggiari L, Ratto GB, Filosso PL, Facciolo F . Lymph-node ratio predicts survival among the different stages of non-small-cell lung cancer: a multicentre analysis†. Eur J Cardiothorac Surg. 2019;55(3):405-412.
2. Chiappetta M, Marino M, Facciolo F. Unique case of atypical type A thymoma with vertebral metastasis and high 18-fluorodeoxyglucose avidity. ANZ J Surg. 2019;89(10):E450-E451.

3. Thorsson V, Gibbs DL, Brown SD, Wolf D, Bortone DS, Yang TO, Porta-Pardo E, Gao GF, Plaisier CL, Eddy JA, Ziv E, Culhane AC, Paull EO, Ashok Sivakumar IK, Gentles AJ, Malhotra R, Farshidfar F, Colaprico A, Parker JS, Mose LE, Sy Vo N, Liu J, Liu Y, Rader J, Dhankani V, Reynolds SM, Bowlby R, Califano A, Cherniack AD, AnastassiouD, Bedognetti D, Mokrab Y, Newman AM, Rao A, Chen K, Krasnitz A, Hu H, Malta TM, Noushmehr H, Sekhar Pedamallu C, Bullman S, Ojesina AI, Lamb A, Zhou W, Shen H, Choueiri TK, Weinstein JN, Guinney J, Saltz J, Holt RA, Rabkin CS, Cancer Genome Atlas Research Network; Lazar AJ, Serody JS, Demicco EG, Disis ML, Vincent BG, Shmulevich I. The Immune Landscape of Cancer. Immunity. 2019;51(2):411-412.

GYNECOLOGIC ONCOLOGY AND ONCOFERTILITY CENTER UNIT

Head: Dr. Enrico Vizza, MD, PhD

Staff

Ermelinda Baiocco, MD
Valentina Bruno, MD
Benito Chiofalo, MD
Giuseppe Cutillo, MD
Emanuela Mancini, MD
Luciano Mariani, MD
Cristina Vincenzoni, MD
Giuseppe Vocaturo, MD
Lucia Cicchillitti, Biologist
Marcello Iacobelli, Biologist
Anna Maria Lobascio, Biologist
Livia Ronchetti, Biologist
Arabella Bufalo, Admin
Ashanti Zampa, Data Entry
Rossella Leonardi, Head nurse
Tatiana Chierichetti, Nurse
Fabiana Cipriani, Nurse
Rosaria De Domenico, Nurse
Valeria Fiumara, Nurse
Alessandra Gullo, Nurse
Francesca Parrini, Nurse
Catalina Partenie, Nurse
Sabrina Santini, Nurse
Flavia Gallo, Ward health worker
Cinzia Cicerone, Ward health worker
Eros Floridi, Head outpatient clinic nurse
Aurora De Leo, Outpatient clinic nurse
Claudia Di Frischia, Outpatient clinc nurse
Sonia Girasole; Outpatient clinc nurse
Marianna La Vaccara, Outpatient clinc nurse
Emiliana Marinucci, Outpatient clinc nurse
Giuliana Panico, Outpatient clinc nurse
Cristina Patone, Outpatient clinc nurse
Enrica Ruffo, Outpatient clinc nurse
Maria Di Luccio, Outpatient clinic health worker
Francesco Malci, Outpatient clinic health worker

Mission

To improve even more the standard of care for women with confirmed or suspected tumors of the genital tract and for young women with cancer that desire to preserve their fertility. To ensure the most recent diagnostic pathways and to reduce even more the surgical invasiveness. To provide high-quality standard of research in the field of gynecologal oncology and fertility preservation strategies for young oncologic patients.

Clinical Activity

The Division has 18 in-patient beds, ten of which dedicated to the week-surgery activities, four to the day-surgery and four for the long-stay. We have available 2 full-day surgical rooms every week and one morning for day-surgery procedures. During 2018 more than 740 surgical operations were performed: 267 in day-surgery setting and 476 (64%) for suspect or histological confirmed tumor of the female reproductive tract. More than 90% of procedures were performed with a minimally invasive technique (laparoscopic or robotic). Some laparoscopic procedures were performed with percutaneous instruments. All complex oncological cases and all adjuvants treatments are discussed in a weekly multidisciplinary meeting that include surgeons, medical oncologists, radiotherapists, pathologists and radiologists to identify the correct tailored treatment program. State-of-the-art surgery, including ICG (indocyanine green) guided surgery, minimally invasive approaches (robotic and laparoscopic surgery) and fertility-preserving surgery is offered to our patients. The Division also includes an outpatient clinic dedicated to the diagnosis and staging of cancer, to the care of young patients with cancer for fertility preservation purposes and to the treatment of genital cancer precursor with a multidisciplinary HPV unit.

Research Activity

The main fields of research include: 1) minimally invasive surgery (MIS) for the treatment of gynecological tumors, 2) bio-molecular characterization of endometrial cancer, 3) immunologic pathway of endometrial tumors, 4) ovarian tissue cryopreservation (bank of ovarian tissue), 5) diagnostic accuracy of hysteroscopy in

gynecological diseases. In the recent years all most innovative surgical tools in the field of MIS have been tested and adopted in our Division, including single-site incision laparoscopic and robotic surgery The biggest multicenter study focused on evaluating the incidence of endometrial cancer in breast cancer patients receiving different types of hormonal treatments has been published. Sentinel-node biopsy is commonly used in our division for endometrial and cervical cancer, regarding ovarian cancern some data have been published and a big multicenter trial is ongoing. A study aimed to understand immune escape mechanisms of endometrial adenocarcinomas is ready for publication. Research of the bank of ovarian tissue is mainly focused on: 1) in vitro maturation of immature antral oocytes retrieved from the ovarian cortex, 2) validation of the procedures of freezing and thawing of the ovarian tissue, 3) extraction of genomic DNA from cancer patients for mutational analysis

Publication

1. Aceto P, Beretta L, Cariello C, Claroni C, Esposito C, Forastiere EM, Guarracino F, Perucca R, Romagnoli S, Sollazzi L, Cela V, Ercoli A, Scambia G, Vizza E, Ludovico GM, Sacco E, Vespasiani G, Scudeller L, Corcione A, Societa Italiana di Anestesia Analgesia Rianimazione e Terapia Intensiva (SIAARTI), Societa Italiana di Ginecologia e Ostetricia (SIGO), and Societa Italiana di Urologia (SIU). Joint Consensus on Anesthesia in Urologic and Gynecologic Robotic Surgery: Specific Issues in Management from a Task Force of the SIAARTI, SIGO, and SIU. Minerva Anestesiol. 2019 Mar 29; 85(8): 871a IF:2.840.
2. Bottari F, Iacobone AD, Boveri S, Preti EP, Franchi D, Mariani L, Preti M, Landoni F, Passerini R, Sandri MT. Onclarity Human Papillomavirus Extended Genotyping in the Management of Cervical Intraepithelial Neoplasia 2+ Lesions. J.Low Genit Tract Dis. 2019 Jan; 23(1): 39a IF:1.458.
3. Chiofalo B, Bruni S, Certelli C, Sperduti I, Baiocco E, Vizza E. Primary Debulking Surgery Vs. Interval Debulking Surgery for Advanced Ovarian Cancer: Review of the Literature and Meta-Analysis. Minerva Med. 2019 Aug; 110(4): 330a IF:2.475.
4. Chiofalo B, Mazzon I, Di Angelo Antonio S, Amadore D, Vizza E, Lagana AS, Vocaturo G, Calagna G, Favilli A, Palmara V, Maranto M, Vitale SG, Cucinella G, Granese R, Ghezzi F, Sperduti I, Triolo O. Hysteroscopic Evaluation of Endometrial Changes in Breast Cancer Women with Or without Hormone Therapies: Results from a Large Multicenter Cohort Study. J.Minim Invasive Gynecol. 2019 Aug 16; a IF:2.547.
5. Cianci S, Abatini C, Fagotti A, Chiofalo B, Tropea A, Biondi A, Scambia G, Pacelli F. Hyperthermic Intraperitoneal Chemotherapy (HIPEC) for Peritoneal Malignancies using New Hybrid CO(2) System: Preliminary Experience in Referral Center. Updates in Surgery. 2019 09; 71(3): 555a IF:2.476.
6. Corrado, G., Bruni, S., Vizza,E. Robotic Surgery in Early-Stage Endometrial Cancer. Transl Androl Urol 2019 8(6)S573-S576 IF:2.113
7. Corrado G, Zoccali C, Salducca N, Oddi A, Vizza E, Biagini R. Anterior Robotic Approach in En-Bloc Sacrectomy: A Preliminary Experience. J.Robot.Surg. 2019 Feb; 13(1): 53a IF:No IF.
8. De Angeli M, Carosi M, Vizza E, Corrado G. Sister Mary Joseph's Nodule in Endometrial Cancer: A Case Report and Review of the Literature. Journal of Cancer Research and Therapeutics. 2019 Oct; 15(6): 1408a IF:1.392.
9. Di Benedetto A, Ercolani C, Pizzuti L, Angelucci D, Sergi D, Marinelli C, Iezzi L, Sperati F, Terrenato I, Mazzotta M, Mariani L, Vizza E, Paoletti G, Tomao S, Maugeri-Sacca M, Barba M, Tinari N, Natoli C, Ciliberto G, Grassadonia A, Vici P. Prognostic Relevance of DNA Damage and Repair Biomarkers in Elderly Patients with Hormone-Receptor-Positive Breast Cancer Treated with Neoadjuvant Hormone Therapy: Evidence from the Real-World Setting. Ther.Adv.Med.Oncol. 2019 Aug 18; 11: 1758835919853192a IF:5.670.
10. Fabi A, Lanzetta G, Vizza E, Corsi D, Moscetti L, Spinelli G, Mentuccia L, Lalle M, Perrone M, Baiocco L, Falcicchio C, Milani A, Giannarelli D, Cognetti F, Pugliese P. The Unmet Need for Oncofertility

Preservation in Women: Results of a Survey by Different Oncological Specialists in Lazio, Italy. Curr.Probl.Cancer. 2019 May 17; a IF:3.698.

11. Fagotti A, Gueli Alletti S, Corrado G, Cola E, Vizza E, Vieira M, Andrade CE, Tsunoda A, Favero G, Zapardiel I, Pasciuto T, Scambia G. The INTERNATIONAL MISSION Study: Minimally Invasive Surgery in Ovarian Neoplasms After Neoadjuvant Chemotherapy. Int.J.Gynecol.Cancer. 2019 Jan; 29(1): 5a IF:1.746.
12. Gamucci T, Pizzuti L, Natoli C, Mentuccia L, Sperduti I, Barba M, Sergi D, Iezzi L, Maugeri-Sacca M, Vaccaro A, Magnolfi E, Gelibter A, Barchiesi G, Magri V, D'Onofrio L, Cassano A, Rossi E, Botticelli A, Moscetti L, Omarini C, Fabbri MA, Scinto AF, Corsi D, Carbognin L, Mazzotta M, Bria E, Foglietta J, Samaritani R, Garufi C, Mariani L, Barni S, Mirabelli R, Sarmiento R, Graziano V, Santini D, Marchetti P, Tonini G, Di Lauro L, Sanguineti G, Paoletti G, Tomao S, De Maria R, Veltri E, Paris I, Giotta F, Latorre A, Giordano A, Ciliberto G, Vici P. A Multicenter REtrospective Observational Study of First-Line Treatment with PERtuzumab, Trastuzumab and Taxanes for Advanced HER2 Positive Breast Cancer Patients. RePer Study. Cancer.Biol.Ther. 2019 20(2): 192-200a IF:2.879.
13. Giampaolino P, Della Corte L, Foreste V, Vitale SG, Chiofalo B, Cianci S, Zullo F, Bifulco G. Unraveling a Difficult Diagnosis: The Tricks for Early Recognition of Ovarian Cancer. Minerva Med. 2019 Aug; 110(4): 279a IF:2.475.
14. Mete LS, Vocaturo G, Martayan A, Casini B, Diodoro M, Mannisi E, Vizza E, Stigliano V. P.02.21 Early- Onset Endometrial Cancer Patients are at High Risk for Lynch Syndrome Regardless of Family History. Digestive and Liver Disease. 2019 03/25; 2020/01; 51: e156a IF: 3.287 3.037
15. Passaro N, Casagrande A, Chiara M, Fosso B, Manzari C, D'Erchia AM, Iesari S, Pisani F, Famulari A, Tulissi P, Mastrosimone S, Maresca MC, Mercante G, Spriano G, Corrado G, Vizza E, Garbuglia AR, Capobianchi MR, Mottini C, Cenci A, Tartaglia M, Costa AN, Pesole G, Crescenzi M. No Metagenomic Evidence of Tumorigenic Viruses in Cancers from a Selected Cohort of Immunosuppressed Subjects. Scientific Reports. 2019 12/24; 9(1): 19815a IF:4.011.
16. Pizzuti L, Krasniqi E, Barchiesi G, Mazzotta M, Barba M, Amodio A, Massimiani G, Pelle F, Kayal R, Vizza E, Grassadonia A, Tomao S, Venuti A, Gamucci T, Marchetti P, Natoli C, Sanguineti G, Ciliberto G, Vici P. Eribulin in Triple Negative Metastatic Breast Cancer: Critic Interpretation of Current Evidence and Projection for Future Scenarios. . Journal of Cancer. 2019 10(24): 5903a IF:3.182.
17. Pizzuti L, Giordano A, Michelotti A, Mazzotta M, Natoli C, Gamucci T, De Angelis C, Landucci E, Diodati L, Iezzi L, Mentuccia L, Fabbri A, Barba M, Sanguineti G, Marchetti P, Tomao S, Mariani L, Paris I, Lorusso V, Vallarelli S, Cassano A, Airoldi F, Orlandi A, Moscetti L, Sergi D, Sarobba MG, Tonini G, Santini D, Sini V, Veltri E, Vaccaro A, Ferrari L, De Tursi M, Tinari N, Grassadonia A, Greco F, Botticelli A, La Verde N, Zamagni C, Rubino D, Cortesi E, Magri V, Pomati G, Scagnoli S, Capomolla E, Kayal R, Scinto AF, Corsi D, Cazzaniga M, Laudadio L, Forciniti S, Mancini M, Carbognin L, Seminara P, Barni S, Samaritani R, Roselli M, Portarena I, Russo A, Ficorella C, Cannita K, Carpano S, Pistelli M, Berardi R, De Maria R, Sperduti I, Ciliberto G, Vici P. Palbociclib Plus Endocrine Therapy in HER2 Negative, Hormonal Receptor-Positive, Advanced Breast Cancer: A Real-World Experience. J.Cell.Physiol. 2019 Jun; 234(6): 7708a IF:4.522.
18. Sartori E, Ghezzi F, Cromi A, Lagana AS, Garzon S, Raffaelli R, Scambia G, Franchi M, Italian Society of Gynecology and Obstetrics (SIGO). Learning Climate and Quality of Italian Training Courses in Gynecology and Obstetrics. Eur.J.Obstet.Gynecol.Reprod.Biol. 2019 Oct; 241: 13a IF:2.024.
19. Scambia G, Nero C, Uccella S, Vizza E, Ghezzi F, Cosentino F, Chiantera V, Fagotti A. Sentinel-Node Biopsy in Early Stage Ovarian Cancer: A Prospective Multicentre Study (SELLY). International Journal of Gynecological Cancer: Official Journal of the International Gynecological Cancer Society. 2019 11; 29(9): 1437a IF:1.746.
20. Tocci P, Cianfrocca R, Di Castro V, Rosano L, Sacconi A, Donzelli S, Bonfiglio S, Bucci G, Vizza E, Ferrandina G, Scambia G, Tonon G, Blandino G, Bagnato A. Beta-arrestin1/YAP/mutant p53 Complexes Orchestrate the Endothelin A Receptor Signaling in High-Grade Serous Ovarian Cancer. Nat.Commun. 2019 Jul 19; 10(1): 3196a IF:11.878.

21. Uccella S, Nero C, Vizza E, Vargiu V, Corrado G, Bizzarri N, Ghezzi F, Cosentino F, Turco LC, Fagotti A, Scambia G. Sentinel-Node Biopsy in Early-Stage Ovarian Cancer: Preliminary Results of a Prospective Multicentre Study (SELLY). Am.J.Obstet.Gynecol. 2019 Oct; 221(4): 324.e1a IF:6.120.
22. Vizza E, Mancini E, Laquintana V, Loria R, Carosi M, Baiocco E, Cicchillitti L, Piaggio G, Patrizi L, Sperduti I, Zampa A, Cutillo G, Falcioni R, Corrado G. The Prognostic Significance of Positive Peritoneal Cytology in Endometrial Cancer and its Correlations with L1-CAM Biomarker. Surg.Oncol. 2019 Mar; 28: 151a IF:3.000.
23. Scambia G, Scollo P, Vizza E, Ghezzi A. Trattato di chirurgia ostetrica e ginecologica. Edra Edizioni. Ottobre 2019; 560 pp; ISBN:882144869X, EAN:9788821448690

UROLOGY UNIT

Head: Dr. Simone Giuseppe, MD, PhD

Staff

Ruggiero Cantiani MD
Luciano Lamanna MD
Vincenzo Pompeo MD
Maria Consiglia Ferriero MD, PhD
Umberto Anceschi MD
Gabriele Tuderti MD
Aldo Brassetti MD
Manuela Costantini MD, PhD
Alfredo Bove, MD
Ashanti Zampa, Data Manager

Mission

Providing the highest quality of medical and surgical care to uro-oncology patients. Developing and standardizing complex surgical procedures in uro-oncology; expanding indications of minimally invasive and robotic procedures; developing of clinical and translational research in the field of prostate cancer, kidney cancer and bladder cancer.

Clinical Activity

The urological clinical activity mainly concerns minimally invasive surgery, especially robot-assisted and laparoscopic procedures. We have particularly expanded our expertise and gained experience in robotic radical cystectomy with totally intracorporeal reconstruction of orthotopic and etherotopic diversions, robot assisted radical nephrectomy with inferior vena cava tumor thrombectomy and in minimally invasive off clamp partial nephrectomy. All these complex surgical procedures are today a standard of care in our Institution.

Research Activity

Clinical research on new minimally invasive surgical techniques, imaging advances in early cancer detection or imaging-guided surgery and oncologic outcomes after surgical treatments are our main research objectives. Translational research on molecular biomarkers, genetic and microenvironment tumor profiling, stem cells investigation, together with new precision medicine diagnostic and prognostic not invasive tools in urological malignancies as liquid biopsy are additional research activities that our Unit carries out in cooperation with dedicated departments of the Regina Elena National Cancer Institute and other prestigious national and international Institutions. The Urology Unit has been national site coordinator of observational studies and it is involved in multiple clinical trials on prostate cancer treatments, renal cancer and urothelial cancer

Publications

1. Anceschi U, Tuderti G, Lugnani F, Biava PM, Malossini G, Luciani L, Cai T, Marsiliani D, Filianoti A, Mattevi D, Costantini M, Misuraca L, Simone G. Novel Diagnostic Biomarkers of Prostate Cancer: An Update. Curr.Med.Chem. 2019 26(6): 1045a IF 3.894.
2. Anele UA, Marchioni M, Yang B, Simone G, Uzzo RG, Lau C, Mir MC, Capitanio U, Porter J, Jacobsohn K, de Luyk N, Mari A, Chang K, Fiori C, Sulek J, Mottrie A, White W, Perdona S, Quarto G, Bindayi A, Ashrafi A, Schips L, Berardinelli F, Zhang C, Gallucci M, Ramirez-Backhaus M, Larcher A, Kilday P, Liao M, Langenstroer P, Dasgupta P, Challacombe B, Kutikov A, Minervini A, Rha KH, Sundaram CP, Hampton LJ, Porpiglia F, Aron M, Derweesh I, Autorino R. Robotic Versus Laparoscopic Radical Nephrectomy: A Large Multi-Institutional Analysis (ROSULA Collaborative Group). World J.Urol. 2019 Feb 7; a IF 2.761.
3. Barchetti G, Simone G, Ceravolo I, Salvo V, Campa R, Del Giudice F, De Berardinis E, Buccilli D, Catalano C, Gallucci M, Catto JWF, Panebianco V. Multiparametric MRI of the Bladder: Inter-Observer

Agreement and Accuracy with the Vesical Imaging-Reporting and Data System (VI-RADS) at a Single Reference Center. Eur.Radiol. 2019 Mar 18; IF 4.01.

4. De Nunzio C, Brassetti A, Simone G, Lombardo R, Mastroianni R, Collura D, Muto G, Gallucci M, Tubaro A. Correction: Metabolic Syndrome Increases the Risk of Upgrading and Upstaging in Patients with Prostate Cancer on Biopsy: A Radical Prostatectomy Multicenter Cohort Study. Prostate Cancer.Prostatic Dis. 2019 Feb 1; IF 4.60.
5. Diamand R, Oderda M, Al Hajj Obeid W, Albisinni S, Van Velthoven R, Fasolis G, Simone G, Ferriero M, Roche JB, Piechaud T, Pastore A, Carbone A, Fiard G, Descotes JL, Marra G, Gontero P, Altobelli E, Papalia R, Kumar P, Eldred-Evans D, Giacobbe A, Muto G, Lacetera V, Beatrici V, Roumeguere T, Peltier A. A Multicentric Study on Accurate Grading of Prostate Cancer with Systematic and MRI/US Fusion Targeted Biopsies: Comparison with Final Histopathology After Radical Prostatectomy. World J.Urol. 2019 Jan 16; a IF 2.761.
6. Grassi L, Alfonsi R, Francescangeli F, Signore M, De Angelis ML, Addario A, Costantini M, Flex E, Ciolfi A, Pizzi S, Bruselles A, Pallocca M, Simone G, Haoui M, Falchi M, Milella M, Sentinelli S, Di Matteo P, Stellacci E, Gallucci M, Muto G, Tartaglia M, De Maria R, Bonci D. Organoids as a New Model for Improving Regenerative Medicine and Cancer Personalized Therapy in Renal Diseases. Cell.Death Dis. 2019 Feb 27; 10(3): 201a IF 5.959.
7. Moschini M, Soria F, Mathieu R, Xylinas E, D'Andrea D, Tan WS, Kelly JD, Simone G, Tuderti G, Meraney A, Krishna S, Konety B, Zamboni S, Baumeister P, Mattei A, Briganti A, Montorsi F, Galucci M, Rink M, Karakiewicz PI, Roupret M, Aziz A, Perry M, Rowe E, Koupparis A, Kassouf W, Scherr DS, Ploussard G, Boorjian SA, Sooriakumaran P, Shariat SF, European Association of Urology - Young Academic Urologists (EAU-YAU), Urothelial Carcinoma Working Group. Propensity-Score-Matched Comparison of Soft Tissue Surgical Margins Status between Open and Robotic-Assisted Radical Cystectomy. Urol.Oncol. 2019 Mar; 37(3): 179.e1a IF 2.863.
8. Simone G, Misuraca L, Anceschi U, Minisola F, Ferriero M, Guaglianone S, Tuderti G, Gallucci M. Urethra and Ejaculation Preserving Robot-Assisted Simple Prostatectomy: Near-Infrared Fluorescence Imaging-Guided Madigan Technique. Eur.Urol. 2019 Mar; 75(3): 492a IF 17.928.
9. Zamboni S, Foerster B, Abufaraj M, Seisen T, Roupret M, Colin P, De la Taille A, Di Bona C, Peyronnet B, Bensalah K, Herout R, Wirth MP, Novotny V, Soria F, Chlosta P, Antonelli A, Simeone C, Baumeister P, Mattei A, Montorsi F, Simone G, Gallucci M, Matsumoto K, Karakiewicz PI, Briganti A, Xylinas E, Shariat SF, Moschini M, Upper Tract Urothelial Carcinoma Collaboration Group, European Association of Urology - Young Academic Urologists (EAU-YAU), Urothelial carcinoma working group. Incidence and Survival Outcomes in Patients with Upper Urinary Tract Urothelial Carcinoma Diagnosed with Variant Histology and Treated with Nephroureterectomy. BJU Int. 2019 Mar 25; IF 4.524.
10. Brassetti A, Cacciamani G, Anceschi U, Ferriero M, Tuderti G, Miranda G, Mastroianni R, Desai M, Aron M, Gill I, Gallucci M, Simone G. Long-term oncologic outcomes of robot-assisted radical cystectomy (RARC) with totally intracorporeal urinary diversion (ICUD): a multi-center study. World J Urol. 2019 Jun 12. doi: 10.1007/s00345-019-02842-3. [Epub ahead of print] PMID:31190152 IF 2.761
11. Zamboni S, Soria F, Mathieu R, Xylinas E, Abufaraj M, D Andrea D, Tan WS, Kelly JD, Simone G, Gallucci M, Meraney A, Krishna S, Konety BR, Antonelli A, Simeone C, Baumeister P, Mattei A, Briganti A, Gallina A, Montorsi F, Rink M, Aziz A, Karakiewicz PI, Rouprêt M, Koupparis A, Scherr DS, Ploussard G, Sooriakumaran P, Shariat SF, Moschini M. Differences in trends in the use of robot-assisted and open radical cystectomy and changes over time in peri-operative outcomes among selected centres in North America and Europe: an international multicentre collaboration. European Association of Urology - Young Academic Urologists (EAU-YAU), Urothelial carcinoma working group. BJU Int. 2019 May 4. doi: 10.1111/bju.14791. [Epub ahead of print] PMID:31055865 IF 4.524
12. Papalia R, Panebianco V, Mastroianni R, Del Monte M, Altobelli E, Faiella E, Grasso FR, Bellangino M, Simone G, Ciccozzi M, Angeletti S, D'ovidio G, Catalano C, Gallucci M, Scarpa RM, Muto G. Accuracy of magnetic resonance imaging to identify pseudocapsule invasion in renal tumors. World J Urol. 2019 Apr 25. doi: 10.1007/s00345-019-02755-1. [Epub ahead of print] PMID:31025082 IF 2.761
13. Costantini M, Tuderti G, Minisola F, Pompeo V, Sentinelli S, Amoreo CA, Vallati G, Poeta ML, Gallucci M, Simone G. Metachronous Isolated Splenic Metastasis in a Young Patient with Renal Cell

Carcinoma: Case Report and Literature Review. Urology. 2019 May; 127:13-18. doi: 10.1016/j.urology.2019.01.007. Epub 2019 Jan 16. Review. PMID:30659899 IF 1.861

14. Bertolo R, Simone G, Garisto J, Nakhoul G, Armanyous S, Agudelo J, Costantini M, Tuderti G, Gallucci M, Kaouk J. Off-clamp vs on-clamp robotic partial nephrectomy: Perioperative, functional and oncological outcomes from a propensity-score matching between two high-volume centers. Eur J Surg Oncol. 2019 Jul;45(7):1232-1237. doi: 10.1016/j.ejso.2018.12.005. PMID:30553632 IF 3.379
15. Simone G, Tuderti G, Anceschi U, Ferriero M, Costantini M, Minisola F, Vallati G, Pizzi G, Guaglianone S, Misuraca L, Gallucci M. "Ride the Green Light": Indocyanine Green-marked Off-clamp Robotic Partial Nephrectomy for Totally Endophytic Renal Masses. Eur Urol. 2019 Jun;75(6):1008-1014. doi: 10.1016/j.eururo.2018.09.015. PMID:30262342 IF 17.58
16. Simone G, Anceschi U, Tuderti G, Misuraca L, Celia A, De Concilio B, Costantini M, Stigliano A, Minisola F, Ferriero M, Guaglianone S, Gallucci M. Robot-assisted Partial Adrenalectomy for the Treatment of Conn's Syndrome: Surgical Technique, and Perioperative and Functional Outcomes. Eur Urol. 2019 May;75(5):811-816. doi: 10.1016/j.eururo.2018.07.030. PMID:30077398 IF 17.58
17. Mastroianni R, Brassetti A, Costantini M, Simone G. Predicting biological behaviour of newly diagnosed renal masses: a possible role of cell proliferation biomarkers? Ann Transl Med. 2019 Jul;7(Suppl3): S143. doi: 10.21037/atm.2019.06.22. PMID: 31576350. IF 3.68
18. Moschini M, Zamboni S, Soria F, Mathieu R, Xylinas E, Tan WS, Kelly JD, Simone G, Meraney A, Krishna S, Konety B, Mattei A, Baumeister P, Mordasini L, Montorsi F, Briganti A, Gallina A, Stabile A, Sanchez-Salas R, Cathelineau X, Rink M, Necchi A, Karakiewicz PI, Rouprêt M, Koupparis A, Kassouf W, Scherr DS, Ploussard G, Boorjian SA, Lotan Y, Sooriakumaran P, Shariat SF. Open Versus Robotic Cystectomy: A Propensity Score Matched Analysis Comparing Survival Outcomes. J Clin Med. 2019 Aug 9;8(8). pii: E1192. doi: 10.3390/jcm8081192. PMID:31395826 IF 5.68
19. Veccia A, Dell'oglio P, Antonelli A, Minervini A, Simone G, Challacombe B, Perdoná S, Porter J, Zhang C, Capitanio U, Sundaram CP, Cacciamani G, Aron M, Anele U, Hampton LJ, Simeone C, de Naeyer G, Bradshawh A, Mari A, Campi R, Carini M, Fiori C, Gallucci M, Jacobsohn K, Eun D, Lau C, Kaouk J, Derweesh IH, Porpiglia F, Mottrie A, Autorino R. Robotic partial nephrectomy versus radical nephrectomy in elderly patients with large renal masses. Minerva Urol Nefrol. 2019 Sep 13. doi: 10.23736/S0393-2249.19.03583-5.PMID:31527571 IF 2.47
20. Covotta M, Claroni C, Costantini M, Torregiani G, Pelagalli L, Zinilli A, Forastiere E. The Effects of Ultrasound-Guided Transversus Abdominis Plane Block on Acute and Chronic Postsurgical Pain After Robotic Partial Nephrectomy: A Prospective Randomized Clinical Trial. Pain Med. 2019 Aug 29. pii: pnz214. doi: 10.1093/pm/pnz214. PMID: 31504875 IF 2.76
21. Claroni C, Covotta M, Torregiani G, Marcelli ME, Tuderti G, Simone G, Scotto di Uccio A, Zinilli A, Forastiere E. Recovery from Anesthesia after Robotic-Assisted Radical Cystectomy: Two Different Reversals of Neuromuscular Blockade. J Clin Med. 2019 Oct 24;8(11). pii: E1774. doi: 10.3390/jcm8111774. PMID: 31653003 IF 5.68
22. Simone G, Capitanio U, Tuderti G, Presicce F, Leonardo C, Ferriero M, Misuraca L, Costantini M, Larcher A, Minisola F, Guaglianone S, Anceschi U, Muttin F, Nini A, Trevisani F, Montorsi F, Bertini R, Gallucci M.
23. On-clamp versus off-clamp partial nephrectomy: Propensity score-matched comparison of long-term functional outcomes. Int J Urol. 2019 Oct;26(10):985-991. doi: 10.1111/iju.14079. PMID:31342589 IF 2.10
24. Ferriero M, Mastroianni R, De Nunzio C, Cindolo L, Calabrò F, Tema G, Leonardo C, Flammia RS, Tuderti G, Anceschi U, Brassetti A, Giacinti S, Guaglianone S, Ghahhari J, Schips L, Tubaro A, Gallucci M, Simone G. Managing lines of therapy in castration-resistant prostate cancer: real-life snapshot from a multicenter cohort. World J Urol. 2019 Oct 12. doi: 10.1007/s00345-019-02974-6. PMID: 31605196 IF 2.76
25. De Nunzio C, Cicione A, Izquierdo L, Lombardo R, Tema G, Lotrecchiano G, Minervini A, Simone G, Cindolo L, D'Orta C, Ajami T, Antonelli A, Dellabella M, Alcaraz A, Tubaro A. Multicenter Analysis of Postoperative Complications in Octogenarians After Radical Cystectomy and Ureterocutaneostomy:

The Role of the Frailty Index. Clin Genitourin Cancer. 2019 Oct;17(5):402-407. doi: 10.1016/j.clgc.2019.07.002. PMID:31402279 IF 2.45

26. Tuderti G, Brassetti A, Minisola F, Anceschi U, Ferriero M, Leonardo C, Misuraca L, Vallati G, Guaglianone S, Gallucci M, Simone G. Transnephrostomic Indocyanine Green-Guided Robotic Ureteral Reimplantation for Benign Ureteroileal Strictures After Robotic Cystectomy and Intracorporeal Neobladder: Step-By-Step Surgical Technique, Perioperative and Functional Outcomes. J Endourol. 2019 Oct;33(10):823-828. doi: 10.1089/end.2019.0376. PMID:31397180 IF 2.03
27. Petrozza V, Costantini M, Tito C, Giammusso LM, Sorrentino V, Cacciotti J, Porta N, Iaiza A, Pastore AL, Di Carlo A, Simone G, Carbone A, Gallucci M, Fazi F. Emerging role of secreted miR-210-3p as potential biomarker for clear cell Renal Cell Carcinoma metastasis. Cancer Biomark. 2019 Nov 13. doi: 10.3233/CBM-190242. PMID:31771042 IF 2.85
28. Anceschi U, Simone G. Reply to Franco Gaboardi, Guglielmo Mantica, and Nazareno Suardi's Letter to the Editor re: Giuseppe Simone, Umberto Anceschi, Gabriele Tuderti, et al. Robot-assisted Partial Adrenalectomy for the Treatment of Conn's Syndrome: Surgical Technique, and Perioperative and Functional Outcomes. Eur Urol 2019;75:811-6. Eur Urol. 2019 Nov;76(5): e144-e145. doi: 10.1016/j.eururo.2019.08.002. PMID:31526607 IF 17.58
29. Brassetti A, Anceschi U, Bertolo R, Ferriero M, Tuderti G, Capitanio U, Larcher A, Garisto J, Antonelli A, Mottire A, Minervini A, Dell'oglio P, Veccia A, Amparore D, Flammia RS, Mari A, Porpiglia F, Montorsi F, Kaouk J, Autorino R, Carini M, Gallucci M, Simone G. Surgical quality, cancer control and functional preservation: introducing a novel Trifecta for robot-assisted partial nephrectomy. Minerva Urol Nefrol. 2019 Dec 12. doi: 10.23736/S0393-2249.19.03570-7. PMID:31833720 IF 2.44
30. Brassetti A, Tuderti G, Anceschi U, Ferriero M, Guaglianone S, Gallucci M, Simone G. Combined reporting of surgical quality, cancer control and functional outcomes of robot-assisted radical cystectomy with intracorporeal orthotopic neobladder into a novel trifecta. Minerva Urol Nefrol. 2019 Dec;71(6):590-596. doi: 10.23736/S0393-2249.19.03566-5. PMID: 31619034 IF 2.44
31. Brassetti A, Mastroianni R, Simone G.Are we really seeking for equivalence?-The virtue of the robot is in technology. Transl Androl Urol. 2019 Dec;8(Suppl 5):S502-S504. doi: 10.21037/tau.2019.08.19. PMID:32042631 IF 2.113
32. Anceschi U, Simone G.Reply to Franco Gaboardi, Guglielmo Mantica, and Nazareno Suardi's Letter to the Editor re: Giuseppe Simone, Umberto Anceschi, Gabriele Tuderti, et al. Robot-assisted Partial Adrenalectomy for the Treatment of Conn's Syndrome: Surgical Technique, and Perioperative and Functional Outcomes. Eur Urol 2019;75:811-6. Eur Urol. 2019 Nov;76(5):e144-e145. doi: 10.1016/j.eururo.2019.08.002. Epub 2019 Sep 13. PMID:31526607 IF 17.56

NEUROSURGERY UNIT
Head: Dr. Stefano Telera, MD

Staff

Fabio Cattani, MD
Laura Raus, MD
Piero Oppido, MD
Roberto Gazzeri, MD
Francesco Crispo, MD
Cinzia Mori- Nurse Coordinator and Case Manager
Angelocola Anna, Nurse
Balzano Silvana, Nurse
De Martino Stefania, Nurse
Lauro Gerarda, Nurse
Rinaldi Sabrina, Nurse
Fabiana Rosini, Nurse
Valentina Joseph, Nurse
Francesca Mastropietro, Nurse
Marzia Piccoli- Administrative Assistant

Mission

The activity of Neurosurgical Unit is devoted to research, diagnosis and treatment of nervous system tumors, with a prevalent interest in malignant primary and secondary lesions. Our activity is deeply embedded in the multidisciplinary group of Neuro-Oncology, with the primary aim of defining more specific diagnostic and therapeutic strategies for the most relevant brain and spine tumors.

The research activity of the Unit of Neurosurgery is focused on several relevant topics, regarding translational and clinical studies on new bio-molecular characterization and therapeutic approaches in the integrated diagnosis and treatment of primitive and secondary tumors of the nervous system. As such, we take active part either to national and international cooperative groups or to relevant academic and sponsored clinical trials.

In the field of secondary CNS lesions, we cooperate with the Hematologic, Oncologic and Radiotherapy Units, offering important support into diagnostic and therapeutic processes of systemic and hematologic tumor diseases.

Clinical Activity

In 2019 the Unit of Neurosurgery performed 120 surgical procedures, for intracranial pathologies,

spine lesions and tumors of the peripheral nervous system.

Our activity is devoted to increase the efficacy of therapeutic strategies for primitive brain tumors: fluorescence guided microsurgical resection, neurophysiologic monitoring, intra-operative ecography, conformal RT, adjuvant chemotherapy.

The Italian Society of Neurosurgery (SINCH) have recently created a Task Force (ST is a member of this group), to draw consensus review of evidence and recommendation for diagnosis, staging, and treatment options of cerebral metastases.

The endoscopic activity, both intraventricular and transphenoidal, has been maintained and developed.

Patients affected by metastatic spinal tumors are treated with separation surgery consisting of vertebro/kyphoplasty, open decompression and percutaneous stabilization, followed by Radiosurgery. The introduction of silicon products allowed to perform complex cases with an increased margin of safety and efficacy.

For intradural-extramedullary tumors the unilateral mini-invasive approach has become the standard of care, reducing surgical aggressiveness and time of hospitalization. Neurophysiologic monitoring of the motor and sensory function is commonly employed during surgery of all intradural tumors.

A large experience on treatment of peripheral nerve sheath tumors like schwannomas, has been also developed in the last twenty years.

Research Activity

Research activity has been oriented either toward translational neuro-oncological projects as well as toward new, innovative, more effective surgical techniques.

The aim of our multi-specialist translational group was to identify new molecular glioma biomarkers useful for better determine the diagnosis, prognosis and/or therapeutic response. To accomplish these goal we take advantage of an extensive database including retrospective as well prospective case series collected at IRE.

A relevant issue is related to research and identification of circulating biomarkers for detection and prognosis of primary brain tumors. We are evaluating eleven circulating serum microRNAs, previously associated with brain tumors, as potential non-invasive diagnostic biomarkers for glioma patients.

The role of microRNA has been also investigated in brain metastases. In particular, it has been assessed whether aberrant expression of specific microRNAs could contribute to brain metastases. Comparison of primary lung tumors and their matched metastatic brain disseminations identified shared patterns of several microRNAs, including common down-regulation of miR-145-5p, which appeared to play a pivotal roles in malignancy progression and in metastasis.

The potential contributes of CSF cytometry analysis for early detection and characterization of tumor cells in the presence of leptomeningeal carcinomatosis and lymphomas, is also under investigation.

Fluorescence-guided resection with 5-ALA, can reliably increase the extent of surgery in primitive brain tumors. Our experience regarding more than 120 patients has been presented in several scientific meetings.

With regard to spinal tumors, vertebral pathological fractures represent one of the most challenging issues. The emerging role and integration of minimally invasive surgery with Radiosurgery, the so called “separation surgery” has been investigated by the Neurosurgical and Radiotherapy Units with the purpose to present a combined protocol of treatment.

The results of our innovative mini-invasive approaches have been published in 2019 in World Neurosurgery.

Publications

1. Matteoni S, Abbruzzese C, Matarrese P, De Luca G, Mileo AM, Miccadei S, Schenone S, Musumeci F, Haas TL, Sette G, Carapella CM, Amato R, Perrotti N, Signore M, Paggi MG. The Kinase Inhibitor SI113 Induces Autophagy and Synergizes with Quinacrine in Hindering the Growth of Human Glioblastoma Multiforme Cells. J.Exp.Clin.Cancer Res. 2019 May 17; 38(1): 202a IF:5.646.
2. Policicchio D, Dipellegrini G, Muggianu G, Pintus A, Sgaramella E, Veneziani Santonio F, Boccaletti R. Flexible Fiber CO2 Laser in Microsurgical Treatment of Intraventricular Tumors: Usefulness and Limitations. World Neurosurg. 2019 Feb; 122: e427a IF:1.723.
3. Policicchio D, Doda A, Muggianu G, Dipellegrini G, Boccaletti R. Ethical and Therapeutic Dilemmas in Glioblastoma Management during Pregnancy: Two Case Reports and Review of the Literature. Surg.Neurol.Int. 2019 Mar 26; 10: 41a IF:NO IF.
4. Rudà R, Pellerino A, Pace A, Carapella CM, Dealis C, Caroli M, Faedi M, Bello L, Migliore E, Marchese G, Bertero L, Cassoni P, Soffietti R. Efficacy of Initial Temozolomide for High-Risk Low Grade Gliomas in a Phase II AINO (Italian Association for Neuro-Oncology) Study: A Post-Hoc Analysis within Molecular Subgroups of WHO 2016. J.Neurooncol. 2019 Oct; 145(1): 115a IF:3.129.
5. Solari D, Zenga F, Angileri FF, Barbanera A, Berlucchi S, Bernucci C, Carapella C, Catapano D, Catapano G, Cavallo LM, D'Arrigo C, de Angelis M, Denaro L, Desogus N, Ferroli P, Fontanella MM, Galzio RJ, Gianfreda CD, Iacoangeli M, Lauretti L, Locatelli D, Locatelli M, Luglietto D, Mazzatenta D, Menniti A, Milani D, Nasi MT, Romano A, Ruggeri AG, Saladino A, Santonocito O, Schwarz A, Skrap M, Stefini R, Volpin L, Wembagher GC, Zoia C, Zona G, Cappabianca P. A Survey on Pituitary Surgery in Italy. World Neurosurg. 2019 Mar; a IF:17.298.
6. Tanzilli A, Pace A, Fabi A, Telera S, Vidiri A, Carosi M, Terrenato I, Koudriavtseva T, Boccaletti R, Villani V. Neurocognitive Evaluation in Older Adult Patients Affected by Glioma. J Geriatr Oncol. 2019 a IF:3.164 .
7. Telera S, Gorgoglione N, Raus L, Vidiri A, Villani V, Pace A, Fabi A, Crispo F, Castiglione M, Sperduti I, Boccaletti R. Open Kyphoplasty for Metastatic Spine Disease: A Retrospective Clinical Series. World Neurosurg. 2019 Jul; 127: e751a IF:1.723.
8. Villani V, Fabi A, Tanzilli A, Pasqualetti F, Lombardi G, Vidiri A, Gonnelli A, Molinari A, Cantarella M, Bellu L, Terrenato I, Carosi M, Maschio M, Telera SM, Carapella CM, Cognetti F, Paiar F, Zagonel V, Pace A. A Multicenter Real-World Study of Bevacizumab in Heavily Pretreated Malignant Gliomas: Clinical Benefit is a Plausible End Point? Future Oncol. 2019 Apr 12; 15(15): 1717-1727a IF:2.279.
9. Villani V, Tanzilli A, Telera SM, Terrenato I, Vidiri A, Fabi A, Zucchella C, Carapella CM, Marucci L, Casini B, Carosi M, Oppido PM, Pace A. Comorbidities in Elderly Patients with Glioblastoma: A Field-Practice Study. Future Oncol. 2019 Jan 18; a IF:2.279.
10. Spinal Cord and Spinal Column Tumors. Alessandro Landi, MD, PhD, Fabrizio Gregori, MD and Roberto Delfini (Editors) University of Rome “La Sapienza”, Department of Neurology and Psychiatry, Rome, Italy Neuroscience Research Progress, Cancer Etiology, Diagnosis and Treatments BISAC: MED062000, Nova Science Publishers, Inc.
11. Chapter 23. Unilateral Approach for the Resection of Filum Terminale Tumors. Alfredo Pompili, MD, Stefano Telera MD, Laura Raus MD, Department of Neurosurgery, IRCSS National Cancer Institute, “Regina Elena”, Rome, Italy)
12. Chapter 24. Retroperitoneal Lombotomic Approach for Spinal Extradural Tumors. Stefano Telera, MD, Alfredo Pompili, MD, Laura Raus, MD, and Fabrizio Caroli, MD, Department of Neurosurgery, IRCSS National Cancer Institute, “Regina Elena”, Rome, Italy)

OTOLARYNGOLOGY HEAD AND NECK SURGERY UNIT

Head: Dr. Raul Pellini, MD

Staff

Valentina Manciocco, MD, PhD
Barbara Pichi, MD
Paolo Marchesi, MD
Jacopo Zocchi, MD
Petruzzi Gerardo, MD, Resident
Silvia Moretto, MD, Resident
Alberto Daniele Arosio MD, Resident
Andrea Colizza MD, Resident
Pierluigi Mastino MD, Resident
Flaminia Campo MD, Resident
Roberta Colangeli MD, Resident
Francesco Bianco, Audiometrist
Sonia Gambardella, Audiometrist
Alessandra Masiello, Speech Therapist
Cinzia Mori, Nurse Coordinator
Alba Ara Pina, Nurse
Bruna Boldrini, Nurse
Serena Cucchiella, Nurse
Anna Ferrante, Nurse
Fernando Golino, Nurse
Maria Teresa Imperi, Nurse
Marina Macis, Nurse
Iolanda Mantuano, Nurse
Francesco Mautone, Nurse
Attilio Santolamazza, Nurse
Debora Cacciato, Nurse Case Manager

Mission

We are committed to maintaining our status as leader in the discovery, innovation and implementation of the best practices, research and clinical care in otolaryngology-head & neck surgery.

We contribute to improve the health of individuals and populations through innovation and excellence in otolaryngology-head & neck surgical practice and research. Our program has a strong multidisciplinary translational approach focused on different aspects of Head and Neck Oncology.

Clinical Activity

Ear, nose and throat and maxillofacial oncological surgery. Treating of fairly common head and neck cancers to more complicated and difficult cases. Highly specialized surgical protocols and/or procedures are performed by the staff and every decision regarding clinical cases is submitted to the Head and Neck Disease Management Team, which includes specialists in surgery, radiation oncology, medical oncology, endocrinology, radiology, pathology, speech therapy, plastic and reconstructive surgery, dental and maxillofacial prosthetics, nutrition, and pain management. The group meets weekly and works together to meet their patients' diverse needs. The Unit of Otolaryngology Head and Neck Surgery provides a complete spectrum of head and neck services including Endocrine, Microvascular surgery and minimally invasive approaches including Robotics.

Research Activity

1. Human papillomavirus involvement in Head and Neck cancer.
2. Feasibility and efficacy of electrochemotherapy in Head Neck Cancer
3. mRNA expression profiling in Head Neck Cancer

Publications

1. Vidiri A, Gangemi E, Ruberto E, Pasqualoni R, Sciuto R, Sanguineti G, Farneti A, Benevolo M, Rollo F, Sperati F, Spasiano F, Pellini R, Marzi S. Correlation between histogram-based DCE-MRI parameters and 18F-FDG PET values in oropharyngeal squamous cell carcinoma: Evaluation in primary tumors and metastatic nodes. PLoS One. 2020 Mar 2;15(3):e0229611. doi: 10.1371/journal.pone.0229611. I.F. 2.776
2. De Virgilio A, Iocca O, Di Maio P, Mercante G, Mondello T, Yiu P, Malvezzi L, Pellini R, Ferreli F, Spriano G.Free flap microvascular anastomosis in head and neck reconstruction using a 4K three-dimensional exoscope system (VITOM 3D). Int J Oral Maxillofac Surg. 2020 Feb 10 doi: 10.1016/j.ijom.2020.01.022. I.F. 1,521

3. Giuliani M, Rollo F, Vescio MF, Pichi B, Latini A, Benevolo M, Pellini R, Cristaudo A, Dona' MG Oral human papillomavirus infection in HIV-infected and HIV-uninfected MSM: the OHMAR prospective cohort study. Sex Transm Infect. 2020 Jan 30. pii: sextrans-2019-054301. doi: 10.1136/sextrans-2019-054301. I.F. 3.346
4. F. Ganci, C Pulito, S Valsoni, A Sacconi, C Turco, M. Vahabi, V Manciocco, E M C Mazza, J Meens, C Karamboulas, A Nichols, R Covello, R Pellini, G Spriano, G Sanguineti, P Muti, S Bicciato, L Ailles, S Strano, G Fontemagg and G Blandino. PI3K inhibitors curtail MYC-dependent mutant p53 gain-of-function in head and neck squamous cell carcinoma. Clinical Cancer Research: January 23, 2020; doi:1078-0432.CCR-19-2485. I.F. 8.9
5. J. Zocchi, G. Pietrobon, I. Campomagnani, E. Riggi, G. Veronesi, R. Borchini, R. Pellini, L. Volpi, M. Bignami, P. Castelnuovo. The role of a post therapeutic surveillance program for sinonasal malignancies: Analysis of 417 patients. Head and Neck- December 2019 1-11 doi.org 10.1002hed.26069 I.F. 2.442
6. Di Maio P, Iocca O, De Virgilo A, Giudice M, Pellini R, D'Ascanio L, Golusiński P, Ricci G, Spriano G. Narrow band imaging in head and neck unknown primary carcinoma: A systematic review and meta-analysis. The Laryngoscope 12 November 2019 doi.org/10.1002/lary.28350 I.F 2,343
7. De Virgilio A, Kim S, Magnuson JS, Holsinger C, Remacle M, Lawson G, Wang C, Mercante G, Malvezzi L, Iocca O, Di Maio P, Ferreli F, Pellini R, Spriano G. Anatomical-based classification for transoral lateral oropharyngectomy. November 2019 Oral Oncology doi: 10.1016/j.oraloncology.2019.104450 I.F 3,730
8. De Virgilio A, Mercante G, Gaino F, Yiu P, Mondello T, Malvezzi L, Colombo G, Pellini R, Spriano G. Preliminary clinical experience with the 4 K3-dimensional microvideoscope (VITOM 3D) system for free flap head and neck reconstruction. Head and Neck 30 October 2019 doi.org/10.1002/hed.25979 I.F. 2.442
9. Rollo F, Donà MG, Pichi B, Pellini R, Covello R, Benevolo M. Evaluation of the Anyplex II HPV28 Assay in the Detection of Human Papillomavirus in Archival Samples of Oropharyngeal Carcinomas. Arch Pathol Lab Med. 2019 Sep 11. doi: 10.5858/arpa.2019-0199-OA. I.F. 4,151
10. Mercante G, Anelli A, Giannarelli D, Giordano D, Sinopoli I, Ferreli F, Digiesi G, Appetecchia ML, Barnabei A, Cristalli G, Conti L, Pellini R, Fabio P, Lombardi D, De Virgilio A, Spriano G. Cost-effectiveness in transient hypocalcemia post-thyroidectomy. Head Neck. 2019 41 (11) 3940-47 doi: 10.1002/hed.25934. I.F. 2,442
11. Vidiri A, Marzi S, Gangemi E, Benevolo M, Rollo F, Farneti A, Marucci L, Spasiano F, Sperati F, Di Giuliano F, Pellini R, Sanguineti G. Intravoxel incoherent motion diffusion-weighted imaging for oropharyngeal squamous cell carcinoma: Correlation with human papillomavirus status. Eur J Radiol. 2019 Aug 13;119:108640. doi: 10.1016/j.ejrad.2019.08.009. I.F. 2.948
12. De Virgilio A, Iocca O, Di Maio P, Malvezzi L, Pellini R, Mercante G, Spriano G. Head and neck soft tissue reconstruction with anterolateral thigh flaps with various components: Development of an algorithm for flap selection in different clinical scenarios. Microsurgery. 2019 39 (7) 590-597. doi: 10.1002/micr.30495 I.F. 1,945
13. Pellini R., De Virgilio A., Petruzzi G, Pichi B, Mercante G, Malvezzi L, Vidiri A, Spriano G. Low-grade fibromyxoid sarcoma of the tongue: a rare nosological entity. Otorinolaringologia 2019 September;69(3):188-91
14. Petruzzi G, Zocchi J, Moretto S, Pichi B, Cristalli G, Mercante G, Spriano G, De Virgilio A, Pellini R. Transoral robotic retropharyngeal lymph node dissection in a recurrent head and neck carcinoma. Head Neck. 2019, 41 (11) 4051-53. doi: 10.1002/hed.25874. I.F. 2.442
15. Vidiri A, Panfili M, Boellis A, Cristalli G, Gangemi G, Pellini R, Marzi S, Covello R. The role of MRI-derived depth of invasion in staging oral tongue squamous cell carcinoma: inter reader and radiological–pathological agreement. Acta Radiologica 0(0) 1–9 The Foundation Acta Radiologica 2019 doi: 10.1177/0284185119862946 I.F. 1,586
16. Grammatica A, Piazza C, Pellini R, Montalto N, Lancini D, Vural A, Barbara F, Ferrari M, Nicolai P. Free Flaps for Advanced Oral Cancer in the "Older Old" and "Oldest Old": A Retrospective Multi-Institutional Study. Front. Oncol., 03 July 2019 I.F. 4,137

17. Latini A, Alei L, Covello R, Cristaudo A, Colafigli M, Donà MG, Orsini D, Morrone A, Pellini R, Pichi B. Tonsillar Kaposi sarcoma in an HIV-negative patient. AIDS. 2019 Jun 1;33(7):1263-1264. I.F. 4,499
18. Rollo F, Pichi B, Benevolo M, Giuliani M, Latini A, Lorenzon L, Colafigli M, Frasca M, Pellini R, Cristaudo A, Donà MG. Oral testing for high-risk human papillomavirus DNA and E6/E7 messenger RNA in healthy individuals at risk for oral infection. Cancer. 2019 125(15) 2587-93. I.F. 6,102
19. Donà MG, Pichi B, Rollo F, Benevolo M, Latini A, Laquintana V, Pellini R, Colafigli M, Frasca M, Giuliani M, Cristaudo A. Human papillomavirus detection in matched oral rinses, oropharyngeal and oral brushings of cancer-free high-risk individuals. Oral Oncol. 2019 Apr;91:1-6. I.F. 3,730
20. Vahabi M, Pulito C, Sacconi A, Donzelli S, D'Andrea M, Manciocco V, Pellini R, Paci P, Sanguineti G, Strigari L, Spriano G, Muti P, Pandolfi PP, Strano S, Safarian S, Ganci F, Blandino G. miR-96-5p targets PTEN expression affecting radio-chemosensitivity of HNSCC cells. J Exp Clin Cancer Res. 2019 Mar 29;38(1):141. I.F. 5,646
21. De Virgilio A., Iocca O., Malvezzi L., , Di Maio P., Pellini R., Ferreli F., Cugini G., Colombo G., Spriano G., The Emerging Role of Robotic Surgery among Minimally Invasive Surgical Approaches in the Treatment of Hypopharyngeal Carcinoma: Systematic Review and Meta-Analysis. J. Clin. Med. 2019, 8(2), 256; I.F. 5,688
22. Iocca, O., Farcomeni, A., De Virgilio, A.,Di maio P., Golusinski P., Malvezzi L., Pellini R., Golusinski W., Rassekh, C.H., Spriano, G. Prognostic significance of lymph node yield and lymph node ratio in patients affected by squamous cell carcinoma of the oral cavity and oropharynx: Study protocol for a prospective, multicenter, observational study. Contemporary Clinical Trials Communications 2019 14,100324
23. Galiè E, Villani V, Ferreli F, Pace A, Pellini R. Vastus lateralis myofascial free flap for tongue reconstruction and hypoglossal-femoral anastomosis: neurophysiological study. Neurol Sci. 2019 Jan 2. doi: 10.1007/s10072-018-3687-5. I.F. 2.484
24. Di Maio P, Iocca O, De Virgilio A, Ferreli F., Cristalli G., Pellini R., Golusinski P., Ricci G., Spriano G. Role of palatine tonsillectomy in the diagnostic workup of head and neck squamous cell carcinoma of unknown primary origin: A systematic review and meta-analysis. Head & Neck. 2019; April 41; Pag 1112-1121 I.F. 2,442
25. Pichi B, Pellini R, Spriano G. Electrochemotherapy - A locoregional therapy with well-established palliative effect in patient with large recurrent lesion of head and neck. J Craniomaxillofac Surg. 2019 Jan 47. Pag 41-46 I.F. 1,942
26. Vidiri A, Minosse S, Piludu F, Pellini R, Cristalli G, Kayal R, Carlino G, Renzi D, Covello R, Marzi S.Cervical lymphadenopathy: can the histogram analysis of apparent diffusion coefficient help to differentiate between lymphoma and squamous cell carcinoma in patients with unknown clinical primary tumor. Radiol Med 2019 Jan 124, pag 19-26 I.F. 1,420
27. Book: Pellini R., Molteni . Atlas of Free Flap in Head and Neck Reconstruction. Springer 2019

PLASTIC & RECONSTRUCTIVE SURGERY UNIT

Head: Dr. Roy De Vita, MD

Staff

Maurizio Costantini, MD Assistant
Stefano Feliciano, MD Assistant
Pierpaolo Gullo, MD Assistant
Massimo Panimolle, MD Assistant
Marcello Pozzi, MD Assistant
Antonio Varanese MD Assistant
Veronica Vietti Michelina MD Assistant
Fortunata Bonfà, Nurse, Head

Mission

Plastic and Reconstructive Surgery is very important in the general management of oncologic patients of the Regina Elena National Cancer Institute and plays a seminal role in the therapeutic course of patients affected with breast cancer.

Our Unit is actively involved in the definition and use of innovative therapeutic protocols. In particular, the expertise obtained our Unit is cooperating with most representative national structures.

Clinical Activity

- Breast reconstruction
  Biological Mesh in implant-based breast reconstruction surgery
  Microsurgery Breast recontructions
  Perforator flap recontructions
- The Plastic Surgery Unit deals with all types of skin cancers (epitheliomas, melanomas, other skin cancers locations) that focus especially on craniofacial locations that require complex reconstructions and together with the Dermatology Unit are dedicated on preventing skin cancer diseases.
  In collaboration with the General and Orthopedic Surgery Unit, the activities are aimed against sarcomas of the limbs through the morpho-functional microsurgical reconstruction of the structures involved.
- Extravasation of anticancer drugs m Oncology: Prevention, treatment and outcomes. The incidence of extravasation of antineoplastic drugs reported in the literature, ranges from3'X, to 6%. This percentage, however, is increasing for introducing new chemotherapeutic drugs such as Vinorelvina and Taxanes. While these drugs certainly represent an important therapeutic alternative in the treatment of solid tumors, particularly breast cancer, local toxicity levels are higher in these drugs than those that preceded them.

Publications

1. International Expert Panel Consensus on Fat Grafting of the Breast. Nava MB, Blondeel P, Botti G, Casabona F, Catanuto G, Clemens MW, De Fazio D, De Vita R, Grotting J, Hammond DC, Harris P, Montemurro P, Mendonça Munhoz A, Nahabedian M, Pompei S, Rancati A, Rigotti G, Salgarello M, Scaperrotta G, Spano A, Stan C, Rocco N. Plast Reconstr Surg Glob Open. 2019 Oct 28;7(10):e2426. doi: 10.1097/GOX.0000000000002426. eCollection 2019 Oct. PMID: 31772879
2. Invited Response on: Breast Asymmetry, Classification and Algorithm of Treatment-Our Experience. De Vita R, Buccheri EM. Aesthetic Plast Surg. 2020 Feb;44(1):249-250. doi: 10.1007/s00266-019-01524-0. Epub 2019 Oct 25. No abstract available. PMID: 31654090
3. Clarification About "Expert Consensus on the Use of a New Bioengineered, Cell-Friendly, Smooth Surface Breast Implant". Nava MB, Rancati A, De Vita R, Catanuto G, Rocco N. Aesthet Surg J. 2019 Nov 13;39(12):NP538-NP539. doi: 10.1093/asj/sjz176. No abstract available. PMID: 31617890
4. Breast Asymmetry, Classification, and Algorithm of Treatment: Our Experience. De Vita R, Buccheri EM, Villanucci A, Ragusa LA. Aesthetic Plast Surg. 2019 Dec;43(6):1439-1450. doi: 10.1007/s00266-019-01489-0. Epub 2019 Sep 4. PMID: 31485764

5. International multidisciplinary expert panel consensus on breast reconstruction and radiotherapy. Nava MB, Benson JR, Audretsch W, Blondeel P, Catanuto G, Clemens MW, Cordeiro PG, De Vita R, Hammond DC, Jassem J, Lozza L, Orecchia R, Pusic AL, Rancati A, Rezai M, Scaperrotta G, Spano A, Winters ZE, Rocco N. Br J Surg. 2019 Sep;106(10):1327-1340. doi: 10.1002/bjs.11256. Epub 2019 Jul 18. PMID: 31318456
6. Breast Reconstruction Actualized in Nipple-sparing Mastectomy and Direct-to-implant, Prepectoral Polyurethane Positioning: Early Experience and Preliminary Results. De Vita R, Buccheri EM, Villanucci A, Pozzi M. Clin Breast Cancer. 2019 Apr;19(2):e358-e363. doi: 10.1016/j.clbc.2018.12.015. Epub 2018 Dec 27. PMID: 30691930

ORTHOPAEDICS UNIT
HEAD: DR, ROBERTO BIAGINI, MD

STAFF

Leonardo Favale, MD
Nicola Salducca, MD
Carmine Zoccali, MD
Jacopo Baldi, MD
Wioletta Faltyn, Case Manager
Elisa Checcucci, Data Manager
Giovanni Meogrossi, Nurse
Grazia Amato, Nurse
Paolo Asquini, Nurse
Daniele Cacciarelli, Nurse
Fabio Conti, Nurse
Antonella Cutini, Nurse
Carolina Destito, Nurse
Monica Barrucci, Nurse
Sabrina Ganzenua, Nurse
Stefano Landi, Nurse
Alessia Milotti, Nurse

MISSION

Aim of the division is to diagnose and care primary and secondary tumors of bone and soft tissue in pediatric and adult patients and to perform translational and clinical research in this field.

The unit performs every kind of orthopedic oncological operation for primitive and metastatic muscular-skeletal tumors in adults and pediatric patients.

During 2019, the unit has perfected computer assisted navigated techniques and reconstruction with titanium 3D-printing prostheses after bone tumor removal.

CLINICAL ACTIVITY

Patients who need surgery for primary or secondary tumors of the bone and soft tissue are hosted in the ward (12 regular beds). The ward has a fully furnished (and painted) pediatric room with telematic-teaching service (available for long-term patients), videogames, books and comics. Five rooms out of seven are decorated with the intent of improving the patient's hospitalization experience.

Surgery in performed twice a week, every month, in one of the eight operating room of the operating block. The number of surgical interventions during 2019 accounts a total of 232 procedures.

Biopsies for bony or soft tissue lesions are performed, once a week, in a dedicated small operating room (a total number of 133 were performed in 2019).

There are a total of three orthopedic clinics for outpatients: on Monday for benign and low-grade malignant tumors; on Wednesday for high grade sarcomas (multidisciplinary clinic in collaboration with Oncologist and Psychologist); on Friday for metastatic disease involving muskulskeletal system. On the first Friday of every month there is a dedicated outpatient clinic for exostoses and cartilaginous tumors (benign to low-grade malignant). In 2019 a total number of 2834 visits (787 first visits) was made divided as follows: 1006 for benign and low-grade malignant (525 first visits); 1157 for high grade sarcomas (83 first visits); 671 for metastatic disease (180 first visits).

Once a week, on Wednesday, there is dedicated clinic for wound care (496 medications) and withdrawal of biopsy reports.

Twice a week takes place the Disease Management Team (DMT) meeting for the discussion of clinical cases. A Biobank collects biological samples from patients with musculoskeletal tumors, visceral sarcomas and muscular-skeletal metastasis.

RESEARCH ACTIVITY

- SARCOMA TROBS Trabectedin in Soft Tissue Sarcomas a retrospective analysis.
- Observational study: ISG-STS 10.01 Localized high-risk soft tissue sarcomas of the extremities and trunk wall in adults: an integrating approach comprising standard vs histotype-tailored neoadjuvant Chemotherapy.
- Phase III: closed at the moment jun-2016 2 19 ISG-OS-02 Multicentric, prospective,

randomized clinical trial in patients with recurrence of osteosarcoma.

- Phase III: open 5 - 15 ISG/AIEOP EW1 Phase III trial on the efficacy of dose intensification in patients with non-metastatic Ewing Sarcoma.
- Phase III : open 2 -8 RECURR International Randomised controlled trial of Chemotherapy for the treatment of recurrent and primary refractory Ewing Sarcoma Phase II/III.
- Sacral Chordoma – IT – IREStudio randomizzato e osservazionale sulla CHIRURGIA in confronto alla RADIOTERAPIA nella malattia primitiva localizzata (SACRO).
- Naobiotix n. 301: Studio multicentrico, randomizzato, in aperto, di fase II/III per confrontare l'efficacia di NBTXR3, impiantato con iniezione intratumorale e ttivo mediante radioterapia, risposto alla sola radioterapia, in pazienti affetti da Sarcoma della parete dei tessuti molli degli arti e del tronco, localmente avanzato.
- EORTC-1553-SPECTA: invitation to join SPECTA for rare cancers
  (in collaboration with EURACAN/ROCHE)
- SPECTA: Screening Cancer Patients for Efficient Clinical Trial Access

Publications

1. Sarcoma patients' quality of life from diagnosis to yearly follow-up: experience from an Italian tertiary care center. Maggi G, Terrenato I, Giacomelli L, Zoccali C, Condoleo MF, Falcicchio C, Baldi J, Vari S, Ferraresi V, Biagini R, Pugliese P. Future Oncol. 2019 Sep;15(27):3125-3134. doi: 10.2217/fon-2019-0237. Epub 2019 Sep 12.
2. En bloc spondylectomy in patients older than 60 years: indications, results and complications in a series of 37 patients. Zoccali C, Scotto G, Cannavò L, Baldi J, Scaffidi-Argentina U, Luzzati A. Eur Spine J. 2019 Jun;28(6):1512-1519. doi: 10.1007/s00586-019-05970-x. Epub 2019 Apr 10.
3. The giant aggressive chondroma: A rare entity, a difficult approach. Zoccali C, Baldi J, Anelli V, Annovazzi A, Scotto di Uccio A, Arrigoni F, Barile A, Masciocchi C. J Orthop. 2019 Sep 11;18:181-184. doi: 10.1016/j.jor.2019.09.001. eCollection 2020 Mar-Apr. PMID:32042223
4. Evolution of the imaging features of osteoid osteoma treated with RFA or MRgFUS during a long-term follow-up: a pictorial review with clinical correlations. Arrigoni F, Bruno F, Gianneramo C, Palumbo P, Zugaro L, Zoccali C, Barile A, Masciocchi C. Radiol Med. 2020 Feb 10. doi: 10.1007/s11547-020-01134-w. [Epub ahead of print] PMID:32040718
5. A Rare Case of First Metatarsal Extrusion: Results of Treatment After 12 Months. Basile A, Liuni FM, Guidi M, Perugia D, Zoccali C, Baldi J. J Foot Ankle Surg. 2019 Dec 14. pii: S1067-2516(19)30429-6. doi: 10.1053/j.jfas.2018.12.045. [Epub ahead of print]PMID:31848041
6. Magnetic resonance-guided focused ultrasound surgery treatment of non-spinal intra-articular osteoblastoma: feasibility, safety, and outcomes in a single-center retrospective analysis. Arrigoni F, Bruno F, Palumbo P, Zugaro L, Zoccali C, Barile A, Masciocchi C. Int J Hyperthermia. 2019;36(1):768-775. doi: 10.1080/02656736.2019.1639833. PMID:31431150
7. Magnetic-resonance-guided focused ultrasound treatment of non-spinal osteoid osteoma in children: multicentre experience. Arrigoni F, Napoli A, Bazzocchi A, Zugaro L, Scipione R, Bruno F, Palumbo P, Anzidei M, Mercatelli D, Gravina GL, Zoccali C, Ghanouni P, Barile A, Catalano C, Masciocchi C. Pediatr Radiol. 2019 Aug;49(9):1209-1216. doi: 10.1007/s00247-019-04426-0. Epub 2019 May 25. PMID: 31129699
8. Tendon Tissue Engineering: Effects of Mechanical and Biochemical Stimulation on Stem Cell Alignment on Cell-Laden Hydrogel Yarns. Rinoldi C, Costantini M, Kijeńska-Gawrońska E, Testa S, Fornetti E, Heljak M, Ćwiklińska M, Buda R, Baldi J, Cannata S, Guzowski J, Gargioli C, Khademhosseini A, Swieszkowski W. Adv Healthc Mater. 2019 Apr;8(7):e1801218. doi: 10.1002/adhm.201801218. Epub 2019 Feb 6. PMID:30725521
9. Cervical en-block spondilectomy: planning, results and failures (19 cases) Alessandro Luzzati, Gennaro Scotto, Luca Cannavò, Fontanella Walter, Biagini Roberto, Zoccali Carmine ISOLS 2019, 20th General Meeting of the International Society of Limb Salvage, Athens, Greece, September 11-14, 2019

10. Children en block spondilectomies for malignant tumors: Review of 20 cases Alessandro Luzzati, Gennaro Scotto, Luca Cannavò, Biagini Roberto, Zoccali Carmine, Fontanella Walter ISOLS 2019, 20th General Meeting of the International Society of Limb Salvage, Athens, Greece, September 11-14, 2019
11. En-bloc spondylectomy in patients older than 60 years: Indications, results and complications in a series of 37 patients Carmine Zoccali, Alessandro Luzzati, Luca Cannavò, Jacopo Baldi, Roberto Biagini, Gennaro Scotto ISOLS 2019, 20th General Meeting of the International Society of Limb Salvage, Athens, Greece, September 11-14, 2019
12. 3D-printed titanium custom-made prostheses in reconstruction after resection of pelvic tumors: Results at medium follow-up Carmine Zoccali, Jacopo Baldi, Luca Cannavò, Alessandra Scotto Di Uccio, Roberto Biagini1, Alessandro Luzzati, Gennaro Scotto ISOLS 2019, 20th General Meeting of the International Society of Limb Salvage, Athens, Greece, September 11-14, 2019
13. A computer assisted navigation technique to perform bone tumor resection without dedicated software Carmine Zoccali, Jacopo Baldi, Nicola Salducca, Leonardo Favale, Roberto Biagini, Virginia Ferraresi ISOLS 2019, 20th General Meeting of the International Society of Limb Salvage, Athens, Greece, September 11-14, 2019

BREAST AND SOFT TISSUE SURGERY UNIT

Head: Dr. Claudio Botti, MD

Staff

Franco Graziano, MD
Loredana Piarulli, MD
Sonia Cappelli, MD
Fabio Pelle, MD
Fortunata Bonfà, Head nurse
Francesco Caldarola, Nurse
Mariapaola Decrestina, Nurse
Andrea Esposito, Nurse
Alessio Garga, Nurse
Giampiero Giansanti, Nurse
Monica Iorio, Nurse
Zacharie Mushengezi, Nurse
Silvia Ronchi, Nurse
Massimo Colasante, Health care
Giuseppe Crescenzi, Health care

Mission

To take care of patients with tumors of the breast and melanomas providing high-quality, patient oriented treatments according to the multidisciplinary evaluations (disease management team, DMT) aimed to improve survival and quality of life.

Clinical Activity

The activity is divided into: multidisciplinary evaluation at the breast unit and other pathology oriented DMT, outpatient surgery, day surgery, hospitalization.

Type of surgery performed:

- Conservative and radical surgery of breast tumors with particular reference to oncoplastic surgery (volume displacement techniques, volume replacement and innovative propeller flaps), choice of personalized and innovative techniques of immediate reconstruction after nipple sparing mastectomy in the context of the multidisciplinary treatments (chemo, immunologic and radiation therapies).
- Complex demolitive surgery in locoregionally recurrent cases.
- In selected cases intraoperative radiotherapy (IORT) is performed.
- Locoregional treatment of primitive and recurrent melanoma (wide excision, sentinel lymph node biopsy, radical regional lymphadenectomy, hyperthermic-antiblastic perfusion in selected cases, electrochemotherapy).

Research Activity

Main research lines:

- Identification of signature responsiveness to innovative drugs
- Identification of new imaging techniques in senology (CESM)
- Indocyanine green as a unique method for sentinel lymph node biopsy after neoadjuvant chemotherapy.
- Innovative technical application of conservative volume replacement oncoplasty by fascio--adipose propeller flaps set up by microsurgical anatomical dissection
- Development of personalized algorithm of breast reconstruction after mastectomy (optimize do not compromise)
- Precision surgery approach to generate living biobank (organoid) from primary breast cancer, metastases, adjacent tissues and benign tumors in order to identify innovative molecular vulnerabilities of metastatic disease and markers of early tumor progression

Collaborative studies ongoing:

- Prospective validation of TAZ score as a pathological complete response biomarker in patients with luminal B / HER2 positive breast cancer treated with trastuzumab based neo adjuvant therapy TRISKELE Trial
- Impact of expression of Hippo pathway components in patients with breast cancer treated or candidate for neoadjuvant chemotherapy
- Efficacy and Tolerability of Cario Patient Neopardive Chemotherapy in Patients with Triple Negative Breast Cancer: Multicenter Observational Study. NeoCarbo study

- Predictidicve / Prognostic Biomarkers IdentificaMon in Triple Negative Breast Cancer. NeoTAZ study
- TAZ as a prognostic biomarker in patients with early breast cancer. PHOBOS Trial
- Atorvastatin vs Observation in Patients with Initial Breast Cancer with High Ki-67 and Positivity for TAZ: randomized, non-comparative Phase II pre-surgical study
- Neo-Adjuvant Chemotherapy in Patients with Breast Cancer: Retrospective Evaluation of Effectiveness and Tolerability
- Analysis of the predictive value of efficacy of anti-neoplastic therapies based on the evaluation of molecular pathways associated with tumor stem cells: multi-¬setting and multi-tumor study. HIERARCHY Study
- Accuracy Diagnostics of Dual-¬-Energy Digital Mammography (CESM) and Magnetic Resonance Imaging 3 Tesla Compared to Digital Mammography (FFDM) plus Ecography (US) in Detection and Characterization of Mammary Lesions: Results from an OpenStudy Pilot, monocentric, prospective Molecular mechanism of quadruplex targeted drugs: towards clinical candidate selection
- MetORg: a living biobank of human breast cancer metastases

MEDICAL ONCOLOGY 1 UNIT
HEAD: PROF. FRANCESCO COGNETTI, MD

STAFF

Paolo Carlini, MD Assistant
Michele Milella, MD Assistant
Elvira Colella, MD Assistant
Fabiana Cecere, MD Assistant
Consuelo D'Ambrosio, MD Assistant
Alessandra Fabi, MD Assistant
Virginia Ferraresi, MD Assistant
Gianluigi Ferretti, MD Assistant
Cecilia Nisticò, MD Assistant
Michelangelo Russillo, MD
Antonella Savarese, MD Assistant
Massimo Zeuli, MD Assistant
Simona Gasparro, MD Assistant
Paola Malaguti, MD Assistant
Vanja Vaccaro, MD Assistant
Sabrina Vari, MD Assistant
Domenica Pellegrini, MD Senior Fellows
Davide Renna, Resident
Barbieri Vittoria, Resident
Silvia Bastucci, Data Manager
Marianna Introna, Data Manager
Agnese Provenziani, Data Manager
Marianna Ferrara, Data Manager
Mariangela Lifrieri, Nurse Coordinator
Maria Di Santo, Nurse Coordinator
Massimo Zaratti, Nurse Coordinator
Pietro Calabretta, Nurse
Immacolata D'Orsi, Nurse
Giovanni Cortese, Nurse
Roberto Ferro, Nurse
Alessia Mariotti, Nurse
Gigliola Mammana, Nurse
Giuseppe Giambalvo, Nurse
Patrizia Minonne, Nurse
Wioletta Faltyn, Nurse
Maria Grazia Cioffi, Nurse
Arianna Cicerone, Nurse
Lorena Scarton, Nurse
Taraborelli Emanuela, Nurse
Anna Maria Biscu, Nurse
Antonella Gagliardo, Nurse
Emanuele Esposito, Nurse
Alessandro Mattia, Nurse
Anna Maria Barberini, Nurse
Ornella Barlone, Nurse
Massimo Colantoni, Nurse
Alessandra Pasqua, Nurse
Alessia Barassi, Secretariat
Francesca Sabbatini, Secretariat
Massimo Andaloro, Administrative Collaborator

MISSION

The Division of Medical Oncology 1 has a long standing commitment in improving the diagnosis detection and treatment of solid cancers. The Division's clinical activity guarantees evidence-based treatments and clinical assistance for cancer patients requiring therapy disease monitoring and follow up. Moreover, the Division has been developing clinical research and new treatment strategies on solid tumors using both new immunotherapeutic agents such as checkpoint inhibitors or targeted agents for different tumors in addition to the classic antineoplastic drugs. The work's strategy is based on a multidisciplinary approach to the clinical aspects so assuring a personalized and integrated approach to the disease in the respect of the patient centrality and quality of life. The medical team is strongly oriented in creating collaborative pathways with national and international working groups and scientific societies and in participation to the strategic aims of the IRE.

CLINICAL ACTIVITY

The Division of Medical Oncology 1 consists in 4 separate units: a) in-patient unit which includes 22 beds dedicated to highly complex diagnostic procedures, oncological treatments and management of severe toxicities; b) out-patient unit dedicated to the first visit of new patients and clinical follow up and oncologic genetic counseling; c) Day Hospital and Ambulatory Chemotherapy Services for administration of oral and intravenous antineoplastic drugs and supportive cares. d) Phase 1 Unit for early clinical trials.

Clinical activity is supported by weekly divisional meeting in order to share decisions on patients at first observation or critical clinical cases and

ameliorate the internal procedures. Physicians of the Medical Oncology 1 are the most actively involved in all the interdisciplinary Disease Management Team (DMT). In each DMT, a group of physicians is dedicated to the treatment and follow up of patients according to national and international guidelines. Team members provide state of the art diagnosis and treatment of patients with solid cancers, and are able to follow the patient by continually updating the database that tracks the patient.

Research Activity

The main research topics of the Division is the study of new drugs (targeted therapies, immunological checkpoint inhibitors, etc) their combinations and/or sequence and new strategies of integrated treatments in almost all solid tumors of the adult population. Some studies are also addressed to the treatment of pediatric bone sarcomas. The Division is committed to conducting national and international clinical trials in collaboration with industries or no-profit cooperative groups. During 2019, 64 clinical studies were ongoing in different tumors, with the enrolment of 509 patients. Field of interest of the Division is also the involvement in projects that investigate and promote patient's quality of life (such as integrated medicine and narrative medicine) in collaboration with patient associations. The clinical research activity of the Division is sustained by five fully trained data manager with expertise in conducting clinical trials in good clinical practice. Special emphasis is moreover given to the collaboration with basic researchers to identify molecular prognostic or predictive biomarkers. This latter activity is shared with the internal laboratories department and with the research branch of other national cancer institutes. The medical division is also involved in the basic research that is carried out within its own laboratory, equipped with research personnel and instruments suitable for cell cultures and molecular diagnostics. The main field of activity is aimed at understanding the mechanisms of signal transduction and phosphorylation of tumor cells. This activity is supported with founds provided by national research organization (AIRC). Most physicians of the Division are involved in scientific boards, guidelines editing groups and in national and international networks.

Publications

1. Dal Maso A, Lorenzi M, Roca E, Pilotto S, Macerelli M, Polo V, Cecere FL, Del Conte A, Nardo G, Buoro V, Scattolin D, Monteverdi S, Urso L, Zulato E, Frega S, Bonanno L, Indraccolo S, Calabrese F, Conte P, Pasello G.Clinical Features and Progression Pattern of Acquired T790M-positive Compared With T790M-negative EGFR Mutant Non-small-cell Lung Cancer: Catching Tumor and Clinical Heterogeneity Over Time Through Liquid Biopsy.Clin Lung Cancer. 2020 Jan;21(1):1-14.e3. doi: 10.1016/j.cllc.2019.07.009. IF = 4,117
2. Infante M, Fabi A, Cognetti F, Gorini S, Caprio M, Fabbri A. RANKL/RANK/OPG system beyond bone remodeling: involvement in breast cancer and clinical perspectives.J Exp Clin Cancer Res. 2019 Jan 8;38(1):12. doi: 10.1186/s13046-018-1001-2. Review IF=6,217
3. Iacorossi L, Gambalunga F, De Domenico R, Serra V, Marzo C, Carlini P. Qualitative study of patients with metastatic prostate cancer to adherence of hormone therapy.Eur J Oncol Nurs. 2019 Feb;38:8-12. doi: 10.1016/j.ejon.2018.11.004. Epub 2018 Nov 12. I.F. = 3,333
4. Cazzaniga ME, Verusio C, Ciccarese M, Fumagalli A, Sartori D, Valerio MR, Airoldi M, Moretti G, Ficorella C, Gianni L, Michelotti A, Zambelli A, Febbraro A, Generali D, Pistelli M, Garrone O, Musolino A, Vici P, Maur M, Mentuccia L, La Verde N, Bianchi GV, Artale S, Blasi L, De Laurentiis M, Atzori F, Turletti A, Porpiglia M, Santini D, Fabi A, Gebbia V, Schirone A, Palumbo R, Ferzi A, Frassoldati A, Scavelli C, Clivio L, Giordano M, Donadio M, Biganzoli L, Del Mastro L, Bisagni G, Livi L, Natoli C, Montemurro F, Riccardi F, Romagnoli E, Marchetti P, Torri V, Pronzato P, Mustacchi G. Is There Still a Role for Endocrine Therapy Alone in HR+/HER2- Advanced Breast Cancer Patients? Results from the Analysis of Two Data Sets of Patients Treated with High-Dose Fulvestrant as First-Line Therapy in the Real-World Setting: The EVA and GIM-13 AMBRA Studies. Breast Care (Basel). 2020 Feb;15(1):30-37. doi: 10.1159/000495469. Epub 2019 Apr 17. IF= 2.087
5. Cazzaniga ME, Ciruelos E, Fabi A, Garcia-Saenz J, Lindman H, Mavroudis D, Schem C, Steger G, Timotheadou E, Zaman K, Torri V; MACBETH Group Metastatic or locally advanced breast cancer

patients: towards an expert consensus on nab-paclitaxel treatment in HER2-negative tumours-the MACBETH project. Cancer Chemother Pharmacol. 2019 Feb;83(2):301-318. doi: 10.1007/s00280-018-3717-2. Epub 2018 Nov 20. IF= 3.008

6. Villani V, Tanzilli A, Telera SM, Terrenato I, Vidiri A, Fabi A, Zucchella C, Carapella CM, Marucci L, Casini B, Carosi M, Oppido PM, Pace A. Comorbidities in elderly patients with glioblastoma: a field-practice study.Future Oncol. 2019 Mar;15(8):841-850. doi: 10.2217/fon-2018-0524. Epub 2019 Jan 18. I.F. = 2,369
7. Roila F, Fumi G, Ruggeri B, Antonuzzo A, Ripamonti C, Fatigoni S, Cavanna L, Gori S, Fabi A, Marzano N, Graiff C, De Sanctis V, Mirabile A, Serpentini S, Bocci C, Pino MS, Cilenti G, Verusio C, Ballatori E; NICSO (Network Italiano per le Cure di Supporto in Oncologia). Prevalence, characteristics, and treatment of fatigue in oncological cancer patients in Italy: a cross-sectional study of the Italian Network for Supportive Care in Cancer (NICSO). Support Care Cancer. 2019 Mar;27(3):1041-1047. doi: 10.1007/s00520-018-4393-9. Epub 2018 Aug 6. IF = 2.754
8. Grisanti S, Bianchi S, Locati LD, Triggiani L, Vecchio S, Bonetta A, Bergamini C, Conte P, Airoldi M, Merlano M, Carlini P, Ibrahim T, Rossetto C, Alfieri S, Pronzato P, Tonoli S, Maroldi R, Nicolai P, Resteghini C, Magrini SM, Berruti A.Bone metastases from head and neck malignancies: Prognostic factors and skeletal-related events.PLoS One. 2019 Mar 20;14(3):e0213934. doi: 10.1371/journal.pone.0213934. eCollection 2019. IF = 2.776
9. Bazzichetto C, Conciatori F, Pallocca M, Falcone I, Fanciulli M, Cognetti F, Milella M, Ciuffreda L. PTEN as a Prognostic/Predictive Biomarker in Cancer: An Unfulfilled Promise? Cancers (Basel). 2019 Mar 28;11(4). pii: E435. doi: 10.3390/cancers11040435. Review. I.F.=5.326
10. Conte B, Fabi A, Poggio F, Blondeaux E, Dellepiane C, D'Alonzo A, Buono G, Arpino G, Magri V, Naso G, Presti D, Mura S, Fontana A, Cognetti F, Molinelli C, Pastorino S, Bighin C, Miglietta L, Boccardo F, Lambertini M, Del Mastro L; Gruppo Italiano Mammella (GIM) study group. T-DM1 Efficacy in Patients With HER2-positive Metastatic Breast Cancer Progressing After a Taxane Plus Pertuzumab and Trastuzumab: An Italian Multicenter Observational Study. Clin Breast Cancer. 2020 Apr;20(2):e181-e187. doi: 10.1016/j.clbc.2019.09.001. Epub 2019 Nov 14.3. IF= 2.762
11. Verzoni E, Cartenì G, Cortesi E, Giannarelli D, De Giglio A, Sabbatini R, Buti S, Rossetti S, Cognetti F, Rastelli F, Sobrero A, Turci D, Sternberg CN, Porta C, Cappuzzo F, Tortora G, Tassinari D, Panni S, Pazzola A, Surico G, Raimondi A, De Giorgi U, Procopio G; Italian Nivolumab Renal Cell Cancer Early Access Program group. Real-world efficacy and safety of nivolumab in previously-treated metastatic renal cell carcinoma, and association between immune-related adverse events and survival: the Italian expanded access program. J Immunother Cancer. 2019 Apr 3;7(1):99. doi: 10.1186/s40425-019-0579-z IF = 8.676
12. Cazzaniga ME, Biganzoli L, Cortesi L, De Placido S, Donadio M, Fabi A, Ferro A, Generali D, Lorusso V, Milani A, Montagna E, Munzone E, Orlando L, Pizzuti L, Simoncini E, Zamagni C, Pappagallo GL; "Metronomic Chemotherapy in Advanced Breast Cancer" Study Group. Treating advanced breast cancer with metronomic chemotherapy: what is known, what is new and what is the future?Onco Targets Ther. 2019 Apr 23;12:2989-2997. doi: 10.2147/OTT.S189163. eCollection 2019. IF= 3.064
13. Villani V, Fabi A, Tanzilli A, Pasqualetti F, Lombardi G, Vidiri A, Gonnelli A, Molinari A, Cantarella M, Bellu L, Terrenato I, Carosi M, Maschio M, Telera SM, Carapella CM, Cognetti F, Paiar F, Zagonel V, Pace A. A multicenter real-world study of bevacizumab in heavily pretreated malignant gliomas: clinical benefit is a plausible end point? Future Oncol. 2019 May;15(15):1717-1727. doi: 10.2217/fon-2018-0826. Epub 2019 Apr 12. I.F. = 2,369
14. Pignata S, Scambia G, Lorusso D, De Giorgi U, Nicoletto MO, Lauria R, Mosconi AM, Sacco C, Omarini C, Tagliaferri P, Ferrandina G, Cinieri S, Savarese A, Valabrega G, Pisano C, Salutari V, Raspagliesi F, Kopf B, Cecere SC, Amadio G, Maltese G, Di Napoli M, Greggi S, Signoriello S, Daniele G, Sacco A, Losito S, Normanno N, Perrone F, Gallo C, Piccirillo MC; MITO Investigators. The MITO CERV-2 trial: A randomized phase II study of cetuximab plus carboplatin and paclitaxel, in advanced or recurrent cervical cancer. Gynecol Oncol. 2019 Jun;153(3):535-540. doi: 10.1016/j.ygyno.2019.03.260. Epub 2019 Apr 9. I.F. = 4,54
15. Maschio M, Pauletto G, Zarabla A, Maialetti A, Ius T, Villani V, Fabi A, Koudriavtseva T, Giannarelli D. Perampanel in patients with brain tumor-related epilepsy in real-life clinical practice: a retrospective

analysis. Int J Neurosci. 2019 Jun;129(6):593-597. doi: 10.1080/00207454.2018.1555160. Epub 2018 Dec 26. IF= 1.852

16. Daniele G, Arenare L, Scambia G, Pisano C, Sorio R, Breda E, De Placido S, Savarese A, Ferrandina G, Raspagliesi F, Panici PB, Ferro A, Rimanti A, Cormio G, Lorusso D, Cecere SC, Scalone S, Marsico VA, Cardalesi C, Cognetti F, Salutari V, Attademo L, Guizzaro L, Schettino C, Piccirillo MC, Perrone F, Gallo C, Pignata S. Prognostic role of chemotherapy-induced neutropenia in first-line treatment of advanced ovarian cancer. A pooled analysis of MITO2 and MITO7 trials. Gynecol Oncol. 2019 Jul;154(1):83-88. doi: 10.1016/j.ygyno.2019.04.012. Epub 2019 Apr 24. I.F. = 4,54
17. Telera S, Gorgoglione N, Raus L, Vidiri A, Villani V, Pace A, Fabi A, Crispo F, Castiglione M, Sperduti I, Boccaletti R. Open Kyphoplasty for Metastatic Spine Disease: A Retrospective Clinical Series. World Neurosurg. 2019 Jul;127:e751-e760. doi: 10.1016/j.wneu.2019.03.258. Epub 2019 Apr 2. IF= 1.723
18. Fabi A, Catania G. [LHRH analogs: current role in early and advanced breast cancer treatment of premenopausal patients.]Recenti Prog Med. 2019 Jul-Aug;110(7):347-355. doi: 10.1701/3197.31747. Review. Italian. IF = 0,32
19. Iacorossi L, Gambalunga F, Molinaro S, De Domenico R, Giannarelli D, Fabi A. The Effectiveness of the Sport "Dragon Boat Racing" in Reducing the Risk of Lymphedema Incidence: An Observational Study. Cancer Nurs. 2019 Jul/Aug;42(4):323-331. doi: 10.1097/NCC.0000000000000615. IF= 2.022
20. Gori S, Puglisi F, Moroso S, Fabi A, La Verde N, Frassoldati A, Tarenzi E, Garrone O, Vici P, Laudadio L, Cretella E, Turazza M, Foglietta J, Leonardi V, Cavanna L, Barni S, Galanti D, Russo A, Marchetti F, Valerio M, Lunardi G, Alongi F, Inno A. The HERBA Study: A Retrospective Multi-Institutional Italian Study on Patients With Brain Metastases From HER2-Positive Breast Cancer Clin Breast Cancer. 2019 Aug;19(4):e501-e510. doi: 10.1016/j.clbc.2019.05.006. Epub 2019 May 18. IF= 2.762
21. Bergamini A, Cormio G, Ferrandina G, Lorusso D, Giorda G, Scarfone G, Bocciolone L, Raspagliesi F, Tateo S, Cassani C, Savarese A, Breda E, De Giorgi U, Mascilini F, Candiani M, Kardhashi A, Biglia N, Perrone AM, Pignata S, Mangili G. Conservative surgery in stage I adult type granulosa cells tumors of the ovary: Results from the MITO-9 study. Gynecol Oncol. 2019 Aug;154(2):323-327. doi: 10.1016/j.ygyno.2019.05.029. Epub 2019 Jun 10. I.F. = 4,54
22. Villani V, Pace A, Vidiri A, Tanzilli A, Sperati F, Terrenato I, Mariantonia C, Casini B, Metro G, Maschio M, Tatiana K, Cognetti F, Fabi A.Phase II study of weekly carboplatin in pretreated adult malignant gliomas. J Neurooncol. 2019 Aug;144(1):211-216. doi: 10.1007/s11060-019-03223-x. Epub 2019 Jul 4. J Neurooncol I.F. = 3,06
23. Cecere FL, Aguilar A, Rosell R. Lung cavitation in lung metastases of gastric and non-small-cell lung cancer patients treated with apatinib. Transl Lung Cancer Res. 2019 Aug;8(4):317-318. doi: 10.21037/tlcr.2019.08.20 IF= 4,806
24. Cortinovis D, Chiari R, Catino A, Grossi F, DE Marinis F, Sperandi F, Piantedosi F, Vitali M, Parra HJS, Migliorino MR, Tondini C, Tassinari D, Frassoldati A, Verderame F, Pazzola A, Cognetti F, Palmiotti G, Marchetti P, Santoro A, Giannarelli D, Colonese F, Delmonte A. Italian Cohort of the Nivolumab EAP in Squamous NSCLC: Efficacy and Safety in Patients With CNS Metastases. Anticancer Res. 2019 Aug;39(8):4265-4271. doi: 10.21873/anticanres.13590 I.F = 1,865
25. Eggermont AMM, Chiarion-Sileni V, Grob JJ, Dummer R, Wolchok JD, Schmidt H, Hamid O, Robert C, Ascierto PA, Richards JM, Lebbe C, Ferraresi V, Smylie M, Weber JS, Maio M, Hosein F, de Pril V, Kicinski M, Suciu S, Testori A. Adjuvant ipilimumab versus placebo after complete resection of stage III melanoma: long-term follow-up results of the European Organisation for Research and Treatment of Cancer 18071 double-blind phase 3 randomised trial. Eur J Cancer. 2019 Sep;119:1-10. doi: 10.1016/j.ejca.2019.07.001. Epub 2019 Aug 7.I.F. = 7,191
26. Maggi G, Terrenato I, Giacomelli L, Zoccali C, Condoleo MF, Falcicchio C, Baldi J, Vari S, Ferraresi V, Biagini R, Pugliese P. Sarcoma patients' quality of life from diagnosis to yearly follow-up: experience from an Italian tertiary care center. Future Oncol. 2019 Sep;15(27):3125-3134. doi: 10.2217/fon-2019-0237. Epub 2019 Sep 12. I.F. = 2,369

27. Villani V, Pace A, Vidiri A, Tanzilli A, Sperati F, Terrenato I, Carosi M, Casini B, Metro G, Maschio M, Koudriavtseva T, Cognetti F, Fabi A. *Correction to: Phase II study of weekly carboplatin in pretreated adult malignant gliomas. J Neurooncol. 2019 Sep 9. doi: 10.1007/s11060-019-03285-x I.F. = 3,06
28. Rossi V, Berchialla P, Giannarelli D, Nisticò C, Ferretti G, Gasparro S, Russillo M, Catania G, Vigna L, Mancusi RL, Bria E, Montemurro F, Cognetti F, Fabi A. Should All Patients With HR-Positive HER2-Negative Metastatic Breast Cancer Receive CDK 4/6 Inhibitor As First-Line Based Therapy? A Network Meta-Analysis of Data from the PALOMA 2, MONALEESA 2, MONALEESA 7, MONARCH 3, FALCON, SWOG and FACT Trials. Cancers (Basel). 2019 Oct 26;11(11). pii: E1661. doi: 10.3390/cancers11111661. I.F.=5.326
29. Conte B, Fabi A, Poggio F, Blondeaux E, Dellepiane C, D'Alonzo A, Buono G, Arpino G, Magri V, Naso G, Presti D, Mura S, Fontana A, Cognetti F, Molinelli C, Pastorino S, Bighin C, Miglietta L, Boccardo F, Lambertini M, Del Mastro L; Gruppo Italiano Mammella (GIM) study group.Clin T-DM1 Efficacy in Patients With HER2-positive Metastatic Breast Cancer Progressing After a Taxane Plus Pertuzumab and Trastuzumab: An Italian Multicenter Observational Study. Breast Cancer. 2019 Oct 24. pii: S1526-8209(19)30671-8. doi: 10.1016/j.clbc.2019.09.001. I.F.= 2.762
30. Procopio G, Apollonio G, Cognetti F, Miceli R, Milella M, Mosca A, Chiuri VE, Bearz A, Morelli F, Ortega C, Atzori F, Donini M, Ratta R, Raimondi A, Claps M, Martinetti A, Capitanio U, de Braud FG, Cappelletti V, Verzoni E. Sorafenib Versus Observation Following Radical Metastasectomy for Clear-cell Renal Cell Carcinoma: Results from the Phase 2 Randomized Open-label RESORT Study. Eur Urol Oncol. 2019 Nov;2(6):699-707. doi: 10.1016/j.euo.2019.08.011. Epub 2019 Sep 19. I.F = 17.298
31. Annovazzi A, Anelli V, Zoccali C, Rumi N, Persichetti A, Novello M, Sciuto R, Bertoni F, Ferraresi V, Biagini R. 18F-FDG PET/CT in the evaluation of cartilaginous bone neoplasms: the added value of tumor grading. Ann Nucl Med. 2019 Nov;33(11):813-821. doi: 10.1007/s12149-019-01392-3. Epub 2019 Aug 8. IF= 1.684
32. Lambertini M, Poggio F, Bruzzone M, Conte B, Bighin C, de Azambuja E, Giuliano M, De Laurentiis M, Cognetti F, Fabi A, Bisagni G, Durando A, Turletti A, Urracci Y, Garrone O, Puglisi F, Montemurro F, Ceppi M, Del Mastro L; GIM2 investigators. Dose-dense adjuvant chemotherapy in HER2-positive early breast cancer patients before and after the introduction of trastuzumab: Exploratory analysis of the GIM2 trial. Int J Cancer. 2019 Nov 13. doi: 10.1002/ijc.32789. [Epub ahead of print] I.F.=4.982
33. Colafigli M, Ciccullo A, Borghetti A, Fanti I, Melis F, Modica S, Uccella I, Bonadies A, Ferraresi V, Anzalone E, Pennica A, Migliano E, Rossetti B, Madeddu G, Cauda R, Cristaudo A, Di Giambenedetto S, Latini A. Impact of Antiretroviral Therapy on the Risk of Recurrence in HIV-1 Infected Patients with Kaposi Sarcoma: A Multicenter Cohort Experience. J Clin Med. 2019 Nov 23;8(12). pii: E2062. doi: 10.3390/jcm8122062.IF= 5.688
34. Long GV, Flaherty KT, Stroyakovskiy D, Gogas H, Levchenko E, de Braud F, Larkin J, Garbe C, Jouary T, Hauschild A, Chiarion-Sileni V, Lebbe C, Mandalá M, Millward M, Arance A, Bondarenko I, Haanen JBAG, Hansson J, Utikal J, Ferraresi V, Mohr P, Probachai V, Schadendorf D, Nathan P, Robert C, Ribas A, Davies MA, Lane SR, Legos JJ, Mookerjee B, Grob JJ. Dabrafenib plus trametinib versus dabrafenib monotherapy in patients with metastatic BRAF V600E/K-mutant melanoma: long-term survival and safety analysis of a phase 3 study. Ann Oncol. 2019 Nov 1;30(11):1848. doi: 10.1093/annonc/mdz221. No abstract available. IF= 14.196
35. Landi L, D'Incà F, Gelibter A, Chiari R, Grossi F, Delmonte A, Passaro A, Signorelli D, Gelsomino F, Galetta D, Giannarelli D, Soto Parra H, Minuti G, Tiseo M, Migliorino MR, Cognetti F, Toschi L, Bidoli P, Piantedosi F, Calabro' L, Cappuzzo F. Bone metastases and immunotherapy in patients with advanced non-small-cell lung cancer. J Immunother Cancer. 2019 Nov 21;7(1):316. doi: 10.1186/s40425-019-0793-8. I.F.= 8,728
36. Grossi F, Genova C, Crinò L, Delmonte A, Turci D, Signorelli D, Passaro A, Soto Parra H, Catino A, Landi L, Gelsomino F, Tiseo M, Puppo G, Roila F, Ricciardi S, Tonini G, Cognetti F, Toschi L, Tassinari D, Scoppola A, Giannarelli D, Cortesi E. Real-life results from the overall population and key subgroups within the Italian cohort of nivolumab expanded access program in non-squamous non-small cell lung cancer. Eur J Cancer. 2019 Dec;123:72-80. doi: 10.1016/j.ejca.2019.09.011. Epub 2019 Oct 28. I.F. = 7,191

37. Roberto M, Botticelli A, Cecere F, Cognetti F, Giusti R, Gelibter A, Lugini A, Nelli F, Nuti M, Santini D, Marchetti P. [Immunotherapy in non-small cell lung cancer patients: back to the future.]Recenti Prog Med. 2019 Dec;110(12):587-593. doi: 10.1701/3278.32517 IF = 0,32

38. Fabi A, Lanzetta G, Vizza E, Corsi D, Moscetti L, Spinelli G, Mentuccia L, Lalle M, Perrone M, Baiocco L, Falcicchio C, Milani A, Giannarelli D, Cognetti F, Pugliese P. The unmet need for oncofertility preservation in women: Results of a survey by different oncological specialists in Lazio, Italy. Curr Probl Cancer. 2019 Dec;43(6):100479. doi:10.1016/j.currproblcancer.2019.05.002. Epub 2019 May 17. I.F. = 3,690

39. Lorusso D, Ferrandina G, Colombo N, Pignata S, Pietragalla A, Sonetto C, Pisano C, Lapresa MT, Savarese A, Tagliaferri P, Lombardi D, Cinieri S, Breda E, Sabatucci I, Sabbatini R, Conte C, Cecere SC, Maltese G, Scambia G. Carboplatin-paclitaxel compared to Carboplatin-Paclitaxel-Bevacizumab in advanced or recurrent endometrial cancer: MITO END-2 - A randomized phase II trial. Gynecol Oncol. 2019 Dec;155(3):406-412. doi: 10.1016/j.ygyno.2019.10.013. Epub 2019 Oct I.F. = 4,54

MEDICAL ONCOLOGY 2 UNIT

Head: Dr. Patrizia Vici, MD

Staff

Antonella Amodio, MD Assistant
Silvia Carpano, MD Assistant
Francesca Conti, MD Assistant
Elisabetta Capomolla, MD Assistant
Marina Della Giulia, MD Assistant
Fiorentino Izzo, MD Assistant
Giancarlo Paoletti, MD Assistant
Domenico Sergi, MD Assistant
Laura Pizzuti, MD Assistant
Maddalena Barba, MD, PhD
Marcello Maugeri-Saccà, MD, PhD
Giacomo Barchiesi, MD Transient Staff
Eriseld Krasniqi, MD Transient Staff
Gioia Massimiani, MD Transient Staff
Stefania Di Paolantonio, Chief nurse
Valeria Colamartino, Chief nurse
Geolina Julita Amora, Nurse
Arianna Bassotti, Nurse
Paolo Bellucci, Nurse
Federica Bertini, Nurse
Viviana Boncristiano, Nurse
Emanuela Di Certo, Nurse
Francesca Gallina, Nurse
Marisia Soares, Nurse
Stefano Bucci, Nurse
Ana Cristina Cadaru, Nurse
Eleonora Peverini, Nurse
Sabrina Pieretti, Nurse
Massimiliano De Vecchis, Nurse
Katia Messana, Data manager
Ana Maria Edlisca, Administrative collaborator

Mission

The Division of Medical Oncology 2 (OM2) aims at gaining insights in the management of solid tumors in adult cancer patients. As cancer research is a primary mission, considerable attention is devoted to the design and conduct of several studies in collaboration with an increasingly growing pool of

National and International cancer centers. Our oncologists manage over 600 newly diagnosed cancer patients/year. Our medical personnel are "functionally" organized into subunits committed to a site-specific tumor for both the clinical and research activities. A multidisciplinary approach is systematically applied. Diagnostic and therapeutic decisions are constantly defined at an individual-patient level, which is refined over the course of weekly meetings called Disease Management Team (DMTs). The OM2 actively participate in the Molecular Tumor Board (MTB) of IRE, a multidisciplinary round-table aimed at identifying personalized therapeutic profiles for the treatment of cancer patients. Moreover, clinical cases are weekly discussed collectively. Participation in these meetings is extremely interactive. A relevant percentage of patients are enrolled in scientific studies. Whenever economically sustainable and scientifically plausible, these studies include both clinical and pre-clinical/translational tasks. Feasibility is always carefully considered.

Clinical Activity

The clinical activities of OM2 encompass an inpatient hospital service and outpatient clinics. The following performance are delivered to our patients, independently on the specific regimen: administration of anti-cancer treatments (i.e., chemotherapy, target therapy, immunotherapy) and/or supporting therapies, advice from medical oncologists and collaborating specialists, diagnostic examinations, psychological support, clinical trial procedures.

Clinics: the outpatient clinics activities are driven by the site of cancer origin, specific clinical performance and specific patient needs i.e., 1st-time visit, routine controls and oncological screenings. The 1st-time visits take place in a dedicated clinic, for both patients managed in routine practice and trials' participants. The waiting time for 1st-time visits or oncological screenings does not exceed 3 days.

Hospitalization: all hospitalized patients are admitted to the OM2 Ward Service. The waiting time for admittance is of about 3 days.

Day-Hospital: the waiting time for a patient 1st-time visit/admission does not exceed 4 days.

Research Activity

In 2019, our research pipeline focused mainly on genomic and clinical biomarkers of effectiveness and toxicity of anticancer treatments, with the aim of integrating clinical decisions for patients with solid tumors. All scientific activities are based on the active collaboration with other institutional units (clinical, preclinical, diagnostic) and with other national and international cancer centers.

Specifically, though not exclusively, our interest focused on breast cancer (Bca), covering all clinical settings; the OM2 coordinated the following multicentric trials:

1. In the neo/adjuvant setting: Hippo SAB, TRISKELE, NeoTAZ, NeoCarbo, PHOBOS and a study of prognostic relevance of DNA Damage biomarkers in elderly patients undergoing neoadjuvant hormone therapy (9).

2. In the advanced setting: the STEPP trial, focused on the therapeutic algorithm of HER2+ Bca, was awarded by the Ministry of Health; moreover, INDACO, PALBOSS (20), REPER (22), the TETRIS trial (under review), a retrospective study on the prognostic role of hormone receptor expression in HER2+ Bca (12) and the SePher study, coordinated together with a preclinical department (under review); we also set up the PANHER, a multicenter retrospective study to investigate the performance of available treatments for metastatic HER2+ Bca patients in recent years.

Furthermore, we actively adhered with a non-coordinating role to the following trials: NATALEE, HERMIONE 8, HERMIONE 9, DEDiCa, Neogene, VIP, a retrospective study on Trastuzumab-related cardiotoxicity (16), SEQUERPLUS, VasMUoss, MARIO, POSITIVE, BioItaLEE, VICTOR3, VICTOR6 (8) COMPLEEMENT-1, IMPASSION 131, EVA, ECHO, BRIDE, TiLT, GIM16-FEVEX, HERBA (14), ESEMPiO (15, 21), eve-exe study.

Our research activity has also produced numerous scientific papers regarding: treatments activity in specific patients' subset (2, 4, 6, 23, 24, 25), isto-pathological features or detection of blood-biomarkers (3, 11, 19), a review on long-term treatments toxicity and effectiveness (18).

Concerning solid tumors other than Bca, we also adhered to a phase I dose escalation and cohort

expansion trial of an anti-PD-1 agent in advanced solid tumors. We also focused on the HIPPO pathway within the HIERARCHY study, a spontaneous multicentric multi-tumor study coordinated by the OM2.

For gynecological tumors, we join several MITO projects, the in-ACTO study and participate to multicenter TRAMANT-01 trial; furthermore, our researches on gynecologic cancer yielded further publications (7,10). The study of miR signature in relapsed, high-grade serous ovarian cancer is nearing completion and the final manuscript will be produced shortly.

For thoracic cancer, we adhered to the prospective ACC LUNG project. Moreover, a study coordinated by the OM2 regarding the prognostic role of KEAP1/NFE2L2 in lung adenocarcinoma was published (13), as well as a multicentric investigation to assess a nomogram predicting survival in immunotherapy-treated patients (17).

Our trial on DNA damage and HIPPO biomarkers in locally advanced/metastatic gastric cancer, awarded by the Ministry of Health, is ongoing.

Additional activities have yielded further publications (1, 5, 26).

Publications

1. Grassadonia A, Di Marino P, Ficorella C, Cortellini A, Cannita K, Parisi A, Gamucci T, Zoratto F, Vici P, Barba M, Porreca E, Neri M, Veronese A, Natoli C, De Tursi M, Tinari N. Impact of primary tumor location in patients with RAS wild-type metastatic colon cancer treated with first-line chemotherapy plus anti-EGFR or anti-VEGF monoclonal antibodies: a retrospective multicenter study. J Cancer. 2019 Oct 15;10(24):5926-5934. doi: 10.7150/jca.34550. I.F. 3.182
2. Pizzuti L, Krasniqi E, Barchiesi G, Mazzotta M, Barba M, Amodio A, Massimiani G, Pelle F, Kayal R, Vizza E, Grassadonia A, Tomao S, Venuti A, Gamucci T, Marchetti P, Natoli C, Sanguineti G, Ciliberto G, Vici P. Eribulin in Triple Negative Metastatic Breast Cancer: Critic Interpretation of Current Evidence and Projection for Future Scenarios. J Cancer. 2019 Oct 12;10(24):5903-5914. doi: 10.7150/jca.35109. I.F. 3.182
3. Rossi L, Verrico M, Tomao S, Ricci F, Fontana A, Spinelli GP, Colonna M, Vici P, Tomao F. Expression of ER, PgR, HER-2, and Ki-67 in core biopsies and in definitive histological specimens in patients with locally advanced breast cancer treated with neoadjuvant chemotherapy. Cancer Chemother Pharmacol. 2019 Nov 21. doi: 10.1007/s00280-019-03981-5. I.F. 3.008
4. Krasniqi E, Barchiesi G, Pizzuti L, Mazzotta M, Venuti A, Maugeri-Saccà M, Sanguineti G, Massimiani G, Sergi D, Carpano S, Marchetti P, Tomao S, Gamucci T, De Maria R, Tomao F, Natoli C, Tinari N, Ciliberto G, Barba M, Vici P. Immunotherapy in HER2-positive breast cancer: state of the art and future perspectives. J Hematol Oncol. 2019 Oct 29;12(1):111. doi: 10.1186/s13045-019-0798-2. I.F. 8.731
5. Tomao F, Vici P, Tomao S. Fertility Preservation and Reproductive Health in Patients Undergoing Hematopoietic Stem Cell Transplantation. Biol Blood Marrow Transplant. 2019 Dec;25(12):e389-e390. doi: 10.1016/j.bbmt.2019.09.019. I.F. 3.599
6. Barchiesi G, Krasniqi E, Barba M, Della Giulia M, Pizzuti L, Massimiani G, Ciliberto G, Vici P. Highly durable response to capecitabine in patient with metastatic estrogen receptor positive breast cancer: A case report. Medicine (Baltimore). 2019 Sep;98(37):e17135. doi: 10.1097/MD.0000000000017135. I.F. 1.870
7. Angius G, Tomao S, Stati V, Vici P, Bianco V, Tomao F. Prexasertib, a checkpoint kinase inhibitor: from preclinical data to clinical development. Cancer Chemother Pharmacol. 2019 Sep 11. doi: 10.1007/s00280-019-03950-y. I.F. 3.008
8. Cazzaniga ME, Pinotti G, Montagna E, Amoroso D, Berardi R, Butera A, Cagossi K, Cavanna L, Ciccarese M, Cinieri S, Cretella E, De Conciliis E, Febbraro A, Ferraù F, Ferzi A, Fiorentini G, Fontana A, Gambaro AR, Garrone O, Gebbia V, Generali D, Gianni L, Giovanardi F, Grassadonia A, Leonardi V, Marchetti P, Melegari E, Musolino A, Nicolini M, Putzu C, Riccardi F, Santini D, Saracchini S,

Sarobba MG, Schintu MG, Scognamiglio G, Spadaro P, Taverniti C, Toniolo D, Tralongo P, Turletti A, Valenza R, Valerio MR, Vici P, Clivio L, Torri V; VICTOR Study Group. Metronomic chemotherapy for advanced breast cancer patients in the real world practice: Final results of the VICTOR-6 study. Breast. 2019 Dec; 48:7-16. doi: 10.1016/j.breast.2019.07.006. I.F. 3.494

9. Di Benedetto A, Ercolani C, Pizzuti L, Angelucci D, Sergi D, Marinelli C, Iezzi L, Sperati F, Terrenato I, Mazzotta M, Mariani L, Vizza E, Paoletti G, Tomao S, Maugeri-Saccà M, Barba M, Tinari N, Natoli C, Ciliberto G, Grassadonia A, Vici P. Prognostic relevance of DNA damage and repair biomarkers in elderly patients with hormone-receptor-positive breast cancer treated with neoadjuvant hormone therapy: evidence from the real-world setting. Ther Adv Med Oncol. 2019 Aug 18; 11: 1758835919853192. doi: 10.1177/1758835919853192. I.F. 5.670
10. Peri M, Grassadonia A, Iezzi L, Vici P, De Tursi M, Natoli C, Tinari N, Zilli M. A Case of Stage I Vulvar Squamous Cell Carcinoma with Early Relapse and Rapid Disease Progression. Case Rep Oncol Med. 2019 Jul 3; 2019:1018492. doi: 10.1155/2019/1018492.
11. Maselli A, Parlato S, Puglisi R, Raggi C, Spada M, Macchia D, Pontecorvi G, Iessi E, Pagano MT, Cirulli F, Gabriele L, Carè A, Vici P, Pizzuti L, Barba M, Matarrese P, Pierdominici M, Ortona E. Autoantibodies Specific to ERα are Involved in Tamoxifen Resistance in Hormone Receptor Positive Breast Cancer. Cells. 2019 Jul 19;8(7). pii: E750. doi: 10.3390/cells8070750. I.F. 5.656
12. Pizzuti L, Krasniqi E, Barchiesi G, Della Giulia M, Izzo F, Sanguineti G, Marchetti P, Mazzotta M, Giusti R, Botticelli A, Gamucci T, Natoli C, Grassadonia A, Tinari N, Iezzi L, Tomao S, Tomao F, Tonini G, Santini D, Astone A, Michelotti A, De Angelis C, Mentuccia L, Vaccaro A, Magnolfi E, Gelibter A, Magri V, Cortesi E, D'Onofrio L, Cassano A, Rossi E, Cazzaniga M, Moscetti L, Omarini C, Piacentini F, Fabbri MA, Scinto AF, Corsi D, Carbognin L, Bria E, La Verde N, Samaritani R, Garufi C, Barni S, Mirabelli R, Sarmiento R, Veltri EM, D'Auria G, Paris I, Giotta F, Lorusso V, Cardillo F, Landucci E, Mauri M, Ficorella C, Roselli M, Adamo V, Ricciardi GRR, Russo A, Berardi R, Pistelli M, Fiorio E, Cannita K, Sini V, D'Ostilio N, Foglietta J, Greco F, Zamagni C, Garrone O, Di Cocco B, Baldini E, Livi L, Desideri I, Meattini I, Sarobba G, Del Medico P, De Tursi M, Generali D, De Maria R, Risi E, Ciliberto G, Sperduti I, Villa A, Barba M, Di Leo A, Vici P. Distinct HR expression patterns significantly affect the clinical behavior of metastatic HER2+ breast cancer and degree of benefit from novel anti-HER2 agents in the real world setting. Int J Cancer. 2019 Jul 22. doi: 10.1002/ijc.32583. I.F. 4.982
13. Goeman F, De Nicola F, Scalera S, Sperati F, Gallo E, Ciuffreda L, Pallocca M, Pizzuti L, Krasniqi E, Barchiesi G, Vici P, Barba M, Buglioni S, Casini B, Visca P, Pescarmona E, Mazzotta M, De Maria R, Fanciulli M, Ciliberto G, Maugeri-Saccà M. Mutations in the KEAP1-NFE2L2 Pathway Define a Molecular Subset of Rapidly Progressing Lung Adenocarcinoma. J Thorac Oncol. 2019 Nov; 14(11): 1924-1934. doi: 10.1016/j.jtho.2019.07.003. I.F. 12.460
14. Gori S, Puglisi F, Moroso S, Fabi A, La Verde N, Frassoldati A, Tarenzi E, Garrone O, Vici P, Laudadio L, Cretella E, Turazza M, Foglietta J, Leonardi V, Cavanna L, Barni S, Galanti D, Russo A, Marchetti F, Valerio M, Lunardi G, Alongi F, Inno A. The HERBA Study: A Retrospective Multi-Institutional Italian Study on Patients With Brain Metastases From HER2-Positive Breast Cancer. Clin Breast Cancer. 2019 Aug;19(4): e501-e510. doi: 10.1016/j.clbc.2019.05.006. I.F. 2.762
15. Barni S, Livraghi L, Gravina A, Martella F, D'Onofrio L, Morritti M, Michelotti A, Vici P, Mentuccia L, Porcu L, Orditura M, Puglisi F; ESEMPiO Group. Feasibility of Eribulin Mesylate in older patients with locally advanced or metastatic breast cancer: A post-hoc analysis of the ESEMPiO study. J Geriatr Oncol. 2019 Nov;10(6):990-993. doi: 10.1016/j.jgo.2019.05.003. I.F. 3.164
16. Martinello R, Becco P, Vici P, Airoldi M, Del Mastro L, Garrone O, Barone C, Pizzuti L, D'Alonzo A, Bellini E, Milani A, Bonzano A, Montemurro F. Trastuzumab-related cardiotoxicity in patients with nonlimiting cardiac comorbidity. Breast J. 2019 May;25(3):444-449. doi: 10.1111/tbj.13240. I.F. 2.433
17. Botticelli A, Salati M, Di Pietro FR, Strigari L, Cerbelli B, Zizzari IG, Giusti R, Mazzotta M, Mazzuca F, Roberto M, Vici P, Pizzuti L, Nuti M, Marchetti P. A nomogram to predict survival in non-small cell lung cancer patients treated with nivolumab. J Transl Med. 2019 Mar 27;17(1):99. doi: 10.1186/s12967-019-1847-x. I.F. 4.098

18. Mazzotta M, Krasniqi E, Barchiesi G, Pizzuti L, Tomao F, Barba M, Vici P. Long-Term Safety and Real-World Effectiveness of Trastuzumab in Breast Cancer. J Clin Med. 2019 Feb 18;8(2). pii: E254. doi: 10.3390/jcm8020254. I.F. 5.688
19. Graziano V, Grassadonia A, Iezzi L, Vici P, Pizzuti L, Barba M, Quinzii A, Camplese A, Di Marino P, Peri M, Veschi S, Alberti S, Gamucci T, Di Gioacchino M, De Tursi M, Natoli C, Tinari N. Combination of peripheral neutrophil-to-lymphocyte ratio and platelet-to-lymphocyte ratio is predictive of pathological complete response after neoadjuvant chemotherapy in breast cancer patients. Breast. 2019 Apr; 44:33-38. doi: 10.1016/j.breast.2018.12.014. I.F. 3.494
20. Pizzuti L, Giordano A, Michelotti A, Mazzotta M, Natoli C, Gamucci T, De Angelis C, Landucci E, Diodati L, Iezzi L, Mentuccia L, Fabbri A, Barba M, Sanguineti G, Marchetti P, Tomao S, Mariani L, Paris I, Lorusso V, Vallarelli S, Cassano A, Aroldi F, Orlandi A, Moscetti L, Sergi D, Sarobba MG, Tonini G, Santini D, Sini V, Veltri E, Vaccaro A, Ferrari L, De Tursi M, Tinari N, Grassadonia A, Greco F, Botticelli A, La Verde N, Zamagni C, Rubino D, Cortesi E, Magri V, Pomati G, Scagnoli S, Capomolla E, Kayal R, Scinto AF, Corsi D, Cazzaniga M, Laudadio L, Forciniti S, Mancini M, Carbognin L, Seminara P, Barni S, Samaritani R, Roselli M, Portarena I, Russo A, Ficorella C, Cannita K, Carpano S, Pistelli M, Berardi R, De Maria R, Sperduti I, Ciliberto G, Vici P. Palbociclib plus endocrine therapy in HER2 negative, hormonal receptor-positive, advanced breast cancer: A real-world experience. J Cell Physiol. 2019 Jun;234(6):7708-7717. doi: 10.1002/jcp.27832. I.F. 4.522
21. Barni S, Livraghi L, Morritti M, Vici P, Michelotti A, Cinieri S, Fontanella C, Porcu L, Del Mastro L, Puglisi F; ESEMPiO Study Group. Eribulin in the treatment of advanced breast cancer: real-world scenario from 39 Italian centers - ESEMPiO study. Future Oncol. 2019 Jan;15(1):33-44. doi: 10.2217/fon-2018-0324. Erratum in: Future Oncol. 2019 Jul;15(21):2555. I.F. 2.279
22. Gamucci T, Pizzuti L, Natoli C, Mentuccia L, Sperduti I, Barba M, Sergi D, Iezzi L, Maugeri-Saccà M, Vaccaro A, Magnolfi E, Gelibter A, Barchiesi G, Magri V, D'Onofrio L, Cassano A, Rossi E, Botticelli A, Moscetti L, Omarini C, Fabbri MA, Scinto AF, Corsi D, Carbognin L, Mazzotta M, Bria E, Foglietta J, Samaritani R, Garufi C, Mariani L, Barni S, Mirabelli R, Sarmiento R, Graziano V, Santini D, Marchetti P, Tonini G, Di Lauro L, Sanguineti G, Paoletti G, Tomao S, De Maria R, Veltri E, Paris I, Giotta F, Latorre A, Giordano A, Ciliberto G, Vici P. A multicenter REtrospective observational study of first-line treatment with PERtuzumab, trastuzumab and taxanes for advanced HER2 positive breast cancer patients. RePer Study. Cancer Biol Ther. 2019;20(2):192-200. doi: 10.1080/15384047.2018.1523095 I.F. 2.879
23. Barchiesi G, McCartney A, Biagioni C, Siclari O, Rossi L, Pestrin M, Di Leo A, Biganzoli L. Early triple negative breast cancer: Are we getting better outcomes? A retrospective analysis from a single institution. Breast J. 2019 Nov;25(6):1225-1229. doi: 10.1111/tbj.13437. I.F. 2.433
24. Cazzaniga ME, Danesi R, Girmenia C, Invernizzi P, Elvevi A, Uguccioni M, Amaducci L, Atzori F, Blasi L, Butti C, Collovà E, De Conciliis E, Fabi A, Febbraro A, Garrone O, Gianni L, Giotta F, La Verde N, Michelotti A, Palumbo R, Paris I, Pistelli M, Pizzuti L, et al. Management of toxicities associated with targeted therapies for HR-positive metastatic breast cancer: a multidisciplinary approach is the key to success. Breast Cancer Res Treat. 2019 Aug; 176(3): 483a. doi: 10.1007/s10549-019-05261-5. I.F. 3.471
25. Cazzaniga ME, Biganzoli L, Cortesi L, De Placido S, Donadio M, Fabi A, Ferro A, Generali D, Lorusso V, Milani A, Montagna E, Munzone E, Orlando L, Pizzuti L, Simoncini E, Zamagni C, Pappagallo GL; "Metronomic Chemotherapy in Advanced Breast Cancer" Study Group. Treating advanced breast cancer with metronomic chemotherapy: what is known, what is new and what is the future? Onco Targets Ther. 2019 Apr 23;12:2989-2997. doi: 10.2147/OTT.S189163. I.F. 3.046
26. Verrico M, Rossi L, Tomao S, Colonna M, Vici P, Tomao F. Metachronous and Synchronous Cancers in Patients with Neuroendocrine Tumors. Oncology. 2019 Sep 10; 1a IF:2.278.

HAEMATOLOGY AND STEM CELL TRANSPLANTATION UNIT

Head: Dr. Andrea Mengarelli, MD

Staff

Svitlana Gumenyuk, MD,
Francesco Marchesi, MD
Francesca Palombi, MD
Francesco Pisani, MD
Daniela Renzi, MD
Atelda Romano, MD
Antonio Spadea, MD
Caterina Viggiani, Nurse
Ambra Albertini, Nurse
Anna Attico, Nurse
Giuseppina Cafarella, Nurse
Roberta Capobianco, Nurse
Silvia Di Fraia, Nurse
Katia Di Prospero, Nurse
Serena Di Vincenzo, Nurse
Gianluca Falzone, Nurse
Alessandra Labella, Nurse
Giulia Lenzini, Nurse
Andrea Longo, Nurse
Anna Petrucci, Nurse
Paola Presta, Nurse
Fabrizio Pochettino, Nurse
Romina Riccio, Nurse
Raffaele Speranza, Nurse
Daniela Todisco, Nurse
Elena Papa, Quality/Data manager
Chiara Falcicchio, Psychologist

Mission

Hematology and Transplant Unit identifies its own reason for existence with the provision of care services and assistance of patients with hematologic malignancies, according to the policy and mission of Regina Elena National Cancer Institute of Rome. In this framework, through scientific research, the development of medical knowledge and collaboration with other organizations at national and international level, Unit resolved to be a center of excellence for the diagnosis and treatment of such pathologies.

Clinical Activity

Hematology and Transplant Unit is specialized in the evaluation, treatment and care of patients with lymphoma, leukemia, multiple myeloma, myelodysplastic syndrome and myeloproliferative disorder. Although chemotherapy remains an integral component of the treatment for most hematologic malignancies, the development of disease-specific or targeted therapeutics or biomarkers represents the research goal of our Unit investigators.

Treatments are delivered according to National and International clinical trials coordinated by cooperative groups (like GIMEMA, FIL, EORTC, IELSG) involved in the treatment of several onco-hematological diseases. For patients outside clinical trials, treatments are delivered according to Guide-Lines proposed by the most important Italian (SIE-SIES-GITMO) and International (ESMO-ELN-NCCN) hematologic clinical societies. Moreover, in order to better standardize the diagnostic and therapeutic algorithms for patients outside clinical trials, in 2019 five PDTA (Percorsi Diagnostici Terapeutici Assistenziali Aziendali) were updated by the Institute for the following malignancies: acute myeloid leukemia, chronic myeloid leukemia, follicular lymphoma, diffuse large B cell lymphoma and multiple myeloma.

Stem cell transplantation often is indicated for the treatment of hematologic malignancies. U.O.S.D. Ematologia e Trapianti is one of the 6 Institutions located in Rome who belongs to Rome Transplant Network (RTN), a Metropolitan Hematopoietic Stem Cell Transplant Program for adult patients established as a cooperative network. RTN is an innovative entity, which follows rules and standards established by The Joint Accreditation Committee ISCT-EBMT (JACIE) accreditation program. In june 2013, Policlinico "Tor Vergata" University Hospital, Regina Elena National Cancer Institute and Campus Biomedico University Hospital have been found to meet the standards of the JACIE for Autologous & Allogeneic Transplantation in Adult Patients, as certificated on 21.01.2014; the renewal of certification took place on 07-08.02.2019.

In 2019 RTN registered 173 Transplants (61 allogeneic and 112 autologous), 39 of them performed in our Unit.

The objectives of the RTN are: 1) to standardize transplants procedures; 2) to improve quality of transplant care; 3) to extend the potential of transplant activity over the metropolitan area; 4) to share expertise and professional education among healthcare providers; 5) to promote excellence of single transplant Centers; 6) to rationalize cost-management of public health.

Research Activity

The effort of Hematology and Transplant Unit was aimed at carrying out clinical trials of primary relevance in different hematological malignancies working in cooperation with other hematological institutions. In particular, our Unit is a member of the following cooperative group:

- Gruppo Italiano Malattie EMatologiche dell'Adulto (GIMEMA)
- European Organisation for Research and Treatment of Cancer (EORTC)
- Fondazione Italiana Linfomi (FIL)
- International Extranodal Lymphoma Study Group (IELSG)
- Gruppo Romano Mielodisplasie (GROM)
- Gruppo Laziale Sindromi Mieloproliferative Croniche Ph1 neg.
- Sorveglianza Epidemiologica Infezioni Fungine in Emopatie Maligne (SEIFEM)
- Dutch-Belgian Cooperative Trial Group for Hematology Oncology (HOVON)
- Gruppo Italiano Trapianto Midollo Osseo (GITMO).

Diffuse Large B-Cell Lymphoma (DLBCL): Preliminary data suggest that high expression level of serum miR-22 in DLBCL at diagnosis is associated with a worse Progression-Free Survival and is independent of the currently used clinical prognostic index (Journal of Experimental & Clinical Cancer Research 2018). These data have been recently confirmed in a validation patient cohort confirming the negative prognostic role of high circulating miR-22 levels. However, it is widely recognized that a single biomarker approach may not be robust enough to have prognostic and predictive utility. Thus, the evaluation of a multiple miRNA signature could be a more reliable mirror of the complexity of the disease. Based on this consideration, we have performed a global expression profiling of circulating miRNAs in serum samples collected at diagnosis from a

training cohort of responsive to R-CHOP versus primary refractory DLBCL patients. Our analysis shows 9 serum miRNAs differentially expressed ($p<0,05$) according to treatment response. Moreover, ROC curve analysis, shows an area under the curve >0,7 ($p<0,05$) demonstrating a predictive accuracy of the identified miRNA signature. These data suggest the possibility to early identify the chemo-resistant patients using this miRNA signature, with immediate consequence in therapeutic approach to this high-risk patients. Interestingly, 4 out of 9 miRNAs are already reported to be involved in DLBCL pathogenesis. The manuscript reporting this study is in preparation.

Autologous stem cell transplantation (ASCT): the most widely used high-dose chemotherapy (HDC) before ASCT in lymphoma patients is BEAM regimen (carmustine, etoposide, cytarabine and melphalan), which is considered the gold standard both in United states and Europe. In Italy alternative regimens are FEAM or TEAM in which carmustine is replaced by fotemustine or thiotepa due to difficult suppling. We aimed to investigate in a retrospective fashion the comparison between BEAM, FEAM and TEAM regimen in terms of efficacy and safety in lymphoma patients undergoing ASCT. 414 consecutive lymphoma patients transplanted in three Italian Institutions (Sapienza University-Rome n=218, Regina Elena National Cancer Institute-Rome n=144, Cardarelli Hospital-Naples n=52) were analyzed: the 2 years PFS of BEAM and FEAM groups was significantly better than that of TEAM group, whereas no significant differences in terms of 2 years OS were reported. TEAM regimen seems to be better tolerated because of significantly lower rates of grade 3-4 oral mucositis, whereas infectious complications, other non-hematologic toxicities and TRM were similar among the three groups of patients. These data will be presented at the 45th Annual Meeting of the European Group for Blood and Marrow Transplantation (EBMT).

The association between cytomegalovirus (CMV) and invasive fungal disease (IFD) after autologous stem cell transplant (ASCT) in Lymphoproliferative Malignancies was investigated by our Unit. We have reviewed our series of 347 ASCT in myeloma and lymphoma patients performed over a 14 years span with the aim of investigating the descriptive and analytical epidemiology of bacterial, CMV and IFD complications focusing on the association between CMV and IFD. This study was published on International Journal of Molecular Sciences in 2019.

During the 2017, an original study of our Unit on the predictive value of Aspergillus PCR testing on bronchoalveolar lavage (BAL) fluid was published and object of commentary on Leukemia and Lymphoma. The results of the latter prompted us to propose to Sorveglianza Epidemiologica Infezioni Fungine in Emopatie Maligne (SEIFEM) Group a prospective multicentric study on evaluating the efficacy and safety of bronchoscopy with BAL as systematic diagnostic approach of lung infiltrates (LI) in hematologic patients. This study (SEIFEM BAL 2017), promoted and coordinated by our Unit, was conducted between January 2018 and September 2018 and 177 patients were enrolled and evaluable for analysis. We observed a significative better outcome of LI at day +30 and a significative better outcome in 120d-OS in those patients in which a BAL-driven antimicrobial treatment was possible. This study was published on American Journal of Hematology in 2019.

In 2015 the Unit created a web-based intra-net system of data collection: Progettoemat.it. This software system features diversified disease-specific data-bases designed to meet the most important control requirements of the clinical endpoints such as survival, relapse, effectiveness of treatment protocols and more. This system provides for the transfer of clinical data of about a thousand of patients from paper to electronic format. In recent months the database has been continuously updated and modified according to the needs which arise during data entry. The work that has preceded the actual data entry aimed at recovering all the records of patients who died, were lost or left the follow-up. A computer file was then created in which 1436 patients are included. The Unit chose to start with two diseases: Follicular Lymphoma (FL) and Diffuse Large Cell Lymphoma (DLBCL). To date 170 patients were included with FL and 306 patients with DLBCL. In September 2016 data-entry started about patients with multiple myeloma (so far 100 records were filed). The activity of the Secretariat and Data Manager also provides the database update of DMT and satisfaction questionnaires.

The patients enrollment in the project "Psychological Functioning and quality of life after

autologous stem cell transplantation in patients with onco-hematological disease" continued in 2019. The objective of this prospective longitudinal study is to assess the impact of graft on the quality of life and psychological functioning of adult patients undergoing ASCT, and to identify potential demographic, clinical, and psychological predictors of variables under study. The hypothesis is that patients with high scores of physical well-being, more education, lower levels of anxiety and depression, more resilient, more adaptive coping strategies, higher self-efficacy and increased social support before transplantation are those with better quality of life and psychological functioning immediately after transplantation and in a one year follow-up. In 2019 we enrolled 16 new patients, continued follow-up evaluation of all patients enrolled in the study (to date 80 patients), and administered a total of 210 questionnaires for measuring the quality of life, the perceived social support, the psychological distress, the resilience and self-efficacy before and after transplant procedure.

As for clinical trials, during the 2019, 41 clinical research protocols proposed by Hematology and Transplant Unit and approved by Regina Elena I.F.O. Ethics Committee have been open to recruitment and 291 patients have been enrolled

Publications

1. Annibali O, Hohaus S, Marchesi F, Cantonetti M, Di Rocco A, Tomarchio V, Di Napoli A, Pelliccia S, Battistini R, Anticoli Borza P, Abruzzese E, Cenfra N, Andriani A, Tesei C, Alma E, Palombi F, Pupo L, Petrucci L, Becilli M, Maiolo E, Bellesi S, Cuccaro A, D'Alo F, Cox MC. The neutrophil/lymphocyte Ratio >/=3.5 is a Prognostic Marker in Diffuse Large B-Cell Lymphoma: A Retrospective Analysis from the Database of the Italian Regional Network 'Rete Ematologica Del Lazio Per i Linfomi' (RELLI). Leuk.Lymphoma. 2019 60(14): 3386a IF:2.674.
2. Annibali O, Tendas A, Pignatelli A, Mauroni R, Carli I, Chierichini A, Tomarchio V, Cupelli L, Saltarelli D, Inzeo A, Surano M, Piedimonte M, Marchesi F, Sollazzo F, Conte E, Viggiani C, Di Piazza F, Tirindelli MC, Arcese W, Quality of Life Working Party of the Rome Transplant Network. Protection during Haempoietic Stem Cell Transplantation: A Survey from the Quality of Life Working Party of the Rome Transplant Network. BMJ Support.Palliat.Care. 2019 Mar; 9(1): 110a IF:3.208.
3. Biagioli V, Piredda M, Annibali O, Tirindelli MC, Pignatelli A, Marchesi F, Mauroni MR, Soave S, Del Giudice E, Ponticelli E, Clari M, Cavallero S, Monni P, Ottani L, Sica S, Cioce M, Cappucciati L, Bonifazi F, Alvaro R, De Marinis MG, Gargiulo G. Development and Initial Validation of a Questionnaire to Assess Patients' Perception of Protective Isolation Following Haematopoietic Stem Cell Transplantation. Eur.J.Cancer.Care.(Engl). 2019 Mar; : e12955a IF:2.421.
4. Biagioli V, Piredda M, Annibali O, Tirindelli MC, Pignatelli A, Marchesi F, Mauroni MR, Soave S, Del Giudice E, Ponticelli E, Clari M, Cavallero S, Monni P, Ottani L, Sica S, Cioce M, Cappucciati L, Bonifazi F, Alvaro R, De Marinis MG, Gargiulo G. Factors Influencing the Perception of Protective Isolation in Patients Undergoing Haematopoietic Stem Cell Transplantation: A Multicentre Prospective Study. Eur.J.Cancer.Care.(Engl). 2019 28(6): e13148a IF:2.421.
5. Criscuolo M, Marchesi F, Candoni A, Cattaneo C, Nosari A, Veggia B, Verga L, Fracchiolla N, Vianelli N, Del Principe MI, Picardi M, Tumbarello M, Aversa F, Busca A, Pagano L, SEIFEM Group (Sorveglianza Epidemiologica Infezioni nelle Emopatie). Fungaemia in Haematological Malignancies: SEIFEM-2015 Survey. Eur.J.Clin.Invest. 2019 May; 49(5): e13083a IF:2.784.
6. Del Principe MI, Dragonetti G, Verga L, Candoni A, Marchesi F, Cattaneo C, Delia M, Potenza L, Farina F, Ballanti S, Decembrino N, Castagnola C, Nadali G, Fanci R, Orciulo E, Veggia B, Offidani M, Melillo L, Manetta S, Tumbarello M, Venditti A, Busca A, Aversa F, Pagano L, Sorveglianza Epidemiologica Infezioni nelle Emopatie (SEIFEM) Group. 'Real-Life' Analysis of the Role of Antifungal Prophylaxis in Preventing Invasive Aspergillosis in AML Patients Undergoing Consolidation Therapy: Sorveglianza Epidemiologica Infezioni Nelle Emopatie (SEIFEM) 2016 Study. J.Antimicrob.Chemother. 2019 Apr 1; 74(4): 1062a IF:5.113.

7. Di Veroli A, Campagna A, De Muro M, Maurillo L, Trawinska MM, LeonettiCrescenzi S, Petriccione L, Romano A, D'Addosio A, Cenfra A, Montanaro M, Felici S, Andriani A, Carmosino I, Niscola P, Montefusco E, Breccia M, Latagliata R. Deferasirox in the Treatment of Iron Overload during Myeloproliferative Neoplasms in Fibrotic Phase: Does Ferritin Decrement Matter? Leuk.Res. 2019 Jan; 76: 65a IF:2.319.
8. Marchesi F, Cattaneo C, Criscuolo M, Delia M, Dargenio M, Del Principe MI, Spadea A, Fracchiolla NS, Melillo L, Perruccio K, Alati C, Russo D, Garzia M, Brociner M, Cefalo M, Armiento D, Cesaro S, Decembrino N, Mengarelli A, Tumbarello M, Busca A, Pagano L, Sorveglianza Epidemiologica Infezioni nelle Emopatie (SEIFEM) Group. A Bronchoalveolar Lavage-Driven Antimicrobial Treatment Improves Survival in Hematologic Malignancy Patients with Detected Lung Infiltrates: A Prospective Multicenter Study of the SEIFEM Group. Am.J.Hematol. 2019 Oct; 94(10): 1104a IF:6.137.
9. Marchesi F, Pimpinelli F, Di Domenico EG, Renzi D, Gallo MT, Regazzo G, Rizzo MG, Gumenyuk S, Toma L, Marino M, Cordone I, Cantonetti M, Liberati AM, Montanaro M, Ceribelli A, Prignano G, Palombi F, Romano A, Papa E, Pisani F, Spadea A, Arcese W, Ensoli F, Mengarelli A. Association between CMV and Invasive Fungal Infections After Autologous Stem Cell Transplant in Lymphoproliferative Malignancies: Opportunistic Partnership Or Cause-Effect Relationship? Int.J.Mol.Sci. 2019 Mar 19; 20(6): E1373 [pii]a IF:4.183.
10. Marchesi F, Salvatorelli E, Renzi D, Mengarelli A, Minotti G, Menna P. Efficacy and Safety of Low Dose Ponatinib in a Case of Ph-Positive Acute Lymphoblastic Leukaemia. Br.J.Haematol. 2019 187(1): e15-e17.a IF:5.206.
11. Maschio M, Mengarelli A, Zarabla A, Giannarelli D, Maialetti A, Gumenyuk S, Renzi D, Palombi F, Pisani F, Romano A, Spadea A, Galie E, Marchesi F. Role of Pregabalin in Treatment of Polyneuropathy in Multiple Myeloma Patients: A Retrospective Study. Clin.Neuropharmacol. 2019 42(5): 167a IF:1.272.
12. Maschio M, Zarabla A, Maialetti A, Marchesi F, Giannarelli D, Gumenyuk S, Pisani F, Renzi D, GaliÃ¨ E, Mengarelli A. The Effect of Docosahexaenoic Acid and Î±-Lipoic Acid as Prevention of Bortezomib-Related Neurotoxicity in Patients with Multiple Myeloma. Integrative Cancer Therapies. 2019 Jan; 18: 1534735419888584a IF:2.634.
13. Minotti G, Menna P, Calabrese V, Greco C, Armento G, Annibali O, Marchesi F, Salvatorelli E, Reggiardo G. Pharmacology of Ranolazine Versus Common Cardiovascular Drugs in Patients with Early Diastolic Dysfunction Induced by Anthracyclines Or Nonanthracycline Chemotherapeutics: A Phase 2b Minitrial. J.Pharmacol.Exp.Ther. 2019 Aug; 370(2): 197a IF:3.615.
14. Selvaggia Serini, Elena Papa. 2019. "Presentazione Di Un Modello Di Presa in Carico Del Paziente in Epilessia Tumorale. Aspetti Clinici, Percorsi Di Cura e Riabilitazione." Chap. Cap.6, In Epilessia Tumorale. Aspetti Clinici, Percorsi Di Cura e Riabilitazione, edited by IFO-IRCCS Istituto Nazionale Tumori Regina Elena, Centro Epilessia Tumorale and Associazione Blaze-Matteo Blasi: Società Editrice Esculapio.
15. Spagnuolo M, Regazzo G, De Dominici M, Sacconi A, Pelosi A, Korita E, Marchesi F, Pisani F, Magenta A, Lulli V, Cordone I, Mengarelli A, Strano S, Blandino G, Rizzo MG, Calabretta B. Transcriptional Activation of the miR-17-92 Cluster is Involved in the Growth-Promoting Effects of MYB in Human Ph-Positive Leukemia Cells. Haematologica. 2019 Jan; 104(1): 82a IF:7.570.
16. Tendas A, Marchesi F, Mengarelli A, Annibali O, Tomarchio V, Saltarelli D, Chierichini A, Di Venanzio M, Sollazzo F, Piedimonte M, Cupelli L, Bruno A, De Angelis G, Delbono L, Niscola P, Perrotti AP, de Fabritiis P, Arcese W, Rome Transplant Network. Prevention of Chemotherapy-Induced Nausea and Vomiting After High-Dose Melphalan and Stem Cell Transplantation: Review of the Evidence and Suggestions. Support.Care Cancer. 2019 Mar; a IF:2.754.
17. Trecarichi EM, Giuliano G, Cattaneo C, Ballanti S, Criscuolo M, Candoni A, Marchesi F, Laurino M, Dargenio M, Fanci R, Cefalo M, Delia M, Spolzino A, Maracci L, Nadali G, Busca A, Del Principe MI, Daffini R, Simonetti E, Dragonetti G, Zannier ME, Pagano L, Tumbarello M, Haematologic Malignancies Associated Bloodstream Infections Surveillance (HEMABIS) registryâ€“Sorveglianza Epidemiologica Infezioni Fungine in Emopatie Maligne (SEIFEM) group, Italy. Bloodstream Infections Caused by Escherichia Coli in Onco-Haematological Patients: Risk Factors and Mortality in an Italian Prospective Survey. PloS One. 2019 10/29; 14(10): e0224465a IF:2.776.

18. Vidiri A, Minosse S, Piludu F, Pellini R, Cristalli G, Kayal R, Carlino G, Renzi D, Covello R, Marzi S. Cervical Lymphadenopathy: Can the Histogram Analysis of Apparent Diffusion Coefficient Help to Differentiate between Lymphoma and Squamous Cell Carcinoma in Patients with Unknown Clinical Primary Tumor? Radiol.Med. 2019 Jan; a IF:1.420.

CARDIOLOGY UNIT
HEAD: DR. FRANCESCO RULLI, MD

STAFF

Armando Carpino, MD
Maria Paoloa Cicini, MD
Fabio Maramao, MD
Nicola Antonio Morace, MD
Giuseppe Canio Toglia MD
Fabio De Luca, Nurse Coordinator
Laura Cervellione, Nurse
Gianni Chiarabini, Nurse
Gianni Pompei, Nurse
Antonella Perenzin, Nurse

MISSION

The Cardiology Task Force performs all non invasive cardiological diagnostic current required by the surgical facilities, medical oncology and dermatology Institutes. The patients are studied by consulting cardiological ECG, echo, stress ECG, 24 hours ECG and 24 hours monitoring blood pressure. Patients who belong to our Unit, with a path shared by colleagues practitioners, have a predetermined follow-up and facilitated in terms of access benefits with waiting times of 48 hours.

CLINICAL ACTIVITY

The Cardiology Unit carries out assistance activities and clinical-instrumental advice to all cancer patients Institute Regina Elena and S. Gallicano Institute.

The outpatient activity is dedicated to cancer patients who belong to the take in charge, to Day-hospital, Day-Surgery at the two Institutes and to all people in need of evaluation and ongoing monitoring of chemo-radiotherapy or remote treatment within the follow set up programmed by shared treatment protocols.

RESEARCH ACTIVITY

The Cardiology operating Unit substantially has three aspects:

- Support to surgery in terms of preoperative cardiovascular function evaluation in the intra-operatorive emergency and in any patient's appreciation as a results of complications.
- The state of cardiological evaluation of the patient to be subjected to chemotherapy or radiotherapy, pre or post-surgery, given the already documented cardiotoxicity of some therapeutic lines and in particular of some specific groups of drugs. To this is added the periodic monitoring, clinical and instrumental, the treated patient, and in accordance with research protocols defined and shared with

colleagues oncologists conforming with the guidelines defined by available.

- The UO Cardiology is part of the most solid and accreditated reality associational cardiology and cardio-oncology, in the evaluation of cardiotoxic effects of some anticancer drugs, in research and in the development of myocardial damage markers in outcome and patient who underwent cardiac surgery for cancer.

ENDOCRINOLOGY UNIT
HEAD: DR. MARIALUISA APPETECCHIA, MD

STAFF

Barnabei Agnese, MD
Chiefari Alfonsina, MD
Bianchini Marta, MD
Mormando Marilda, MD
Eros Floridi, Area Nursing Coordinator
De Leo Aurora, Nurse
Di Frischia Claudia, Nurse

MISSION

The Oncological Endocrinology Unit of IFO deals with diagnostics and therapy for oncological pathologies of endocrine tumors (thyroid, pituitary, adrenal, parathyroid) and neuroendocrine tumors. It also deals with the management of osteoporosis and endocrine-metabolic sequelae in cancer patients. The Unit includes the graduate students of the School of Specialization in Endocrinology and Metabolic Diseases, and a research doctorate in Endocrinology within the framework agreement with the "Sapienza" University of Rome. The Unit has collaborative relationships and participates in multicenter clinical trials with the main national and international universities and research institutes (Sapienza University of Rome, Biomedical Campus of Rome, Catholic University of the Sacred Heart of Rome, University of Pisa, University of Florence, University of Siena, University of Milan, EOC Swiss Cantonal Hospital Body) and with numerous Scientific Societies (eg SIE, SIOMMS). The mission is to achieve excellence in the prevention, diagnosis and treatment of endocrine and neuroendocrine tumors, in the management of osteoporosis and endocrine-metabolic sequelae in cancer patients.

CLINICAL ACTIVITY

To date, the Unit is characterized by taking care of patients suffering from endocrine and neuroendocrine tumors in the context of rare solid adult tumors, tumors that make up a large portion of rare tumors. In 2019 the new cases of Neuroendocrine and Endocrine tumors represented 40% of all cases included in the IFO Rare tumors platform. The patients affected by the oncological pathologies described above as well as being followed during the diagnosis and therapy processes, with dedicated pathways (PDTA), are assessed collectively in active multidisciplinary groups (Disease Management Team-DMT thyroid and DMT neuroendocrine tumors, both coordinated by the writer). Over the years, the consolidated history of care and research in the field of endocrine and neuroendocrine tumors of the aforementioned structure can be demonstrated with the type of patients taken care of (about 3000 patients in follow-up for thyroid cancer, about 100 families with hereditary tumors, about 250 patients affected by Neuroendocrine Gastroenteropancreatic tumors-NET GEP), with the numerous national and international clinical trials in which it participates (data available from the IRE Scientific Direction) and with scientific publications printed in journals with IF (PUBMED). The structure has also activated, with authorization from the Strategic Department, from 2018 a reference outpatient clinic for multiple endocrine neoplasms-MEN.

Other areas of interest

Osteoporosis and bone metabolism disorders in cancer patients

Most patients with cancer disease have long-term survivors and may suffer from related bone metabolism diseases. In these patients, the treatment of metabolic bone disease becomes all the more necessary than in non-cancerous patients, not only for the overall improvement of its compliance, but also for the psychological implications. It has also been reported that some metabolic bone diseases tend to emulate diseases clinically neoplastic while others are true paraneoplastic

pathologies. The Oncological Endocrinology Unit often sees cancer patients to set specific therapies for osteoporosis. Treatment of these patients should be based on indicators other than those normally used in non-cancer patients with osteoporosis. It is part of the IFO Center of Excellence in Osteoncology, as certified by the Italian Society of Osteoncology (SIO) and of the Onco-Bone Network, a network of clinical and scientific collaboration between endocrinologists, oncologists and bone specialists in the main regional regions of the hospital centers (Coordinators Prof. Paolo Falaschi - Chair and Unit of Geriatrics AOU Sant'Andrea- Rome and Prof. Daniele Santini-Biomedical Campus of Rome).

Thyroid cancer and Familial adenomatous polyposis (FAP)

Patients with FAP have a higher risk in developing cancer of the thyroid than the general population; therefore a follow-up visit that includes annual and ultrasound of the thyroid is needed. The IRE Unit of Gastroenterology and Digestive Endoscopy is a Reference Center in the Lazio Region for FAP which, being rare disease, patients should be ensured to receive comprehensive clinical management, with dedicated paths, providing diagnostic evaluations and follow-ups of target organs, including the thyroid. Diagnostic and therapeutic healthcare paths in patients with FAP APC POS / unknown mutations include undergoing endocrine tests due to the increased incidence of endocrine disease in these patients such as thyroid tumors. At moment, we are following approximately 98 patients affected with FAP and endocrine diseases.

Management of endocrine sequelae of neoplasms or antineoplastic, chemotherapy, radiotherapy, biological and immunotherapy treatments.

Due to antineoplastic therapies, patients with carcinoma often have a condition of early menopause or hypogonadism which leads to problems related to sexual, reproductive and bone metabolism. In these patients, therefore, the treatment of metabolic disorders (dystiroidism, alterations of mineral and lipid metabolism) induced by drugs is of particular importance. With the advent of the new target and immune therapies alone or in association with traditional radio / chemotherapy, the life expectancy of patients has undergone significant improvements both in terms of increasing survival and improving quality of life. Anticancer treatments have led to a radical change in "setting" and users are increasingly independent in their care path, less and less tied to traditional hospitalization. The good therapeutic response obtained with the use of these drugs requires monitoring and controlling the numerous and often very disabling side effects, in order to improve the quality of life and reduce the number of therapeutic interruptions. Several endocrine toxicities induced by targeted therapies are reported. Endocrine toxicities can lead to a reduction in the dosage of antineoplastic therapies, to alter the kinetics and clearance of drugs, with undesirable effects and a negative impact on the patient's quality of life and on the prognosis of the disease. Thyroid dysfunction, in particular l hypothyroidism occurs in 20-50% of patients treated with tyrosine kinase inhibitors (sunitinib, sorafenib, axitinib, pazopanib, regorafenib).

Hereditary endocrine tumours syndromes

Hereditary tumor syndromes are increasingly recognized in the development of endocrine neoplasms. Depending on the tumor type, 10% to 40% of cases are associated with genetic disorders, including the classic multiple endocrine neoplasia syndromes (MEN1 and MEN2), hyperparathyroidism–jaw tumor syndrome, SDH-related familial paraganglioma-pheochromocytoma syndromes, von Hippel-Lindau syndrome, neurofibromatosis type 1, Carney complex, McCune-Albright syndrome, and familial nonmedullary thyroid cancer syndromes, as well as newer entities (MEN4, DICER1 syndrome, glucagon cell hyperplasia and neoplasia syndrome). Although some features commonly seen in familial disease (early onset, family history, multifocal neoplasia, multi-organ involvement) may alert one to the possibility of an underlying genetic predisposition, endocrine neoplasia syndromes tend to be phenotypically complex and heterogeneous and present variably with de novo mutations, making it difficult to recognize and classify on clinical grounds alone. In an era of precision medicine, pathologists play a central role in the diagnosis of familial cancer syndromes, by leading the way toward screening and molecular histopathology prediction models. In particular, the identification of “pathognomonic” morphologic and immunohistochemical “clues” is crucial to raise the possibility of an inherited genetic disorder and to guide further management,

including gene testing, counseling, and targeted therapy. Twelve patients with MEN and 21 patients with pheochromocytoma / paraganglioma syndrome are followed today at the Oncological Endocrinology Unit. The Unit is Regional Reference Center for rare diseases in the Lazio Rare Diseases Information system (SiMaRaL).

Research Activity

The research activities of the IFO Oncological Endocrinology Unit are focused on the evaluation and development of new tools useful in the diagnosis, treatment and monitoring of human endocrine and neuroendocrine tumors with particular attention to precision medicine and the management of the endocrine-metabolic sequelae in cancer patients.

Title: Identification of prognostic and predictive factors in endocrine and neuroendocrine tumors. Responsible: Marialuisa Appetecchia.

Endocrine and neuroendocrine neoplasms (NEN) are rare tumors. The number of new cases per year is less than 5 per 100,000 people. Endocrine tumors are rare (thyroid, NEN) or very rare (adrenal / paraganglioma and parathyroid tumors) with well-established diagnostic and therapeutic tools, for which the new frontiers of molecular target therapies and immunotherapy pose new challenges for the evaluation of efficacy and toxicity. They include diseases that are clinically and biologically different, the complex management of which requires the expertise of different specialist figures (pathologist, medical oncologist, surgeon, nuclear doctor, endocrinologist, gastroenterologist, interventional radiologist, nutritionist, radiotherapist). It is crucial that these figures cooperate within a multidisciplinary group that establishes a global therapeutic strategy suitable for the individual patient. The research line has as main scientific interest the identification of new diagnostic biomarkers and the development of new innovative therapeutic approaches for endocrine and neuroendocrine tumors, with an emphasis on the identification and development of molecular and biochemical diagnostic tools, with particular attention the identification of indicators that allow a personalized approach to the diagnosis and treatment of / of patients, through the development of preclinical models, preclinical and clinical validation to be applied to clinical practice.

Title: Drug induced endocrine toxicity. Responsible: Agnese Barnabei.

The related projects are essentially part of a research area aimed at studying the manifestations of endocrine toxicity induced by traditional systemic and loco-regional antineoplastic treatments (cytotoxic chemotherapy, radiotherapy) and innovative (molecular target therapies, immunotherapy) on organs of the endocrine system and on bone metabolism. Precisely the progressive use in clinical practice of the new molecular target drugs (e.g. tyrosinkinase inhibitors, TKI) and immunotherapy (e.g. monoclonal antibodies known as immune checkpoint inhibitors, ICI) typically endowed (to varying degrees) with endocrine toxicity, made it necessary the current diagnostic in-depth activity, the improvement of therapeutic approaches and stimulated the search for specific predictive factors of endocrine toxicity.

Publications

1. Epidemiology of Simultaneous Medullary and Papillary Thyroid Carcinomas (MTC/PTC): An Italian Multicenter Study. Appetecchia M, Lauretta R, Barnabei A, Pieruzzi L, Terrenato I, Cavedon E, Mian C, Castagna MG, Elisei R; SIE (Italian Society of Endocrinology) Working Group. Cancers (Basel). 2019 Oct 9;11(10). pii: E1516. doi: 10.3390/cancers11101516. PMID:31600997
2. Cost-effectiveness in transient hypocalcemia post-thyroidectomy. Mercante G, Anelli A, Giannarelli D, Giordano D, Sinopoli I, Ferreli F, Digiesi G, Appetecchia ML, Barnabei A, Cristalli G, Conti L, Pellini R, Piazza F, Lombardi D, De Virgilio A, Spriano G. Head Neck. 2019 Nov;41(11):3940-3947. doi: 10.1002/hed.25934. Epub 2019 Aug 31. PMID:31472003
3. Specific and Non-Specific Biomarkers in Neuroendocrine Gastroenteropancreatic Tumors. Sansone A, Lauretta R, Vottari S, Chiefari A, Barnabei A, Romanelli F, Appetecchia M. Cancers (Basel). 2019 Aug 4;11(8). pii: E1113. doi: 10.3390/cancers11081113. Review. PMID:31382663

4. Prognosis of patients with differentiated thyroid carcinomas having a preoperative cytological report of indeterminate at low or high risk. A multicenter study. Trimboli P, Palermo A, Deandrea M, Piccardo A, Campennì A, Valabrega S, Grani G, Santolamazza G, Bottoni G, Barnabei A, Ramundo V, Lauretta R, Monte L, Ferrarazzo G, Paone G, Crosetto C, Ruggeri RM, Baldari S, Chiefari A, Vottari S, Giarnieri E, Perrella E, Limone P, Durante C, Giovanella L, Appetecchia M, Crescenzi A. Endocrine. 2019 Dec;66(3):557-562. doi: 10.1007/s12020-019-02013-9. Epub 2019 Jul 16. PMID:31313225
5. Endocrine Disrupting Chemicals: Effects on Endocrine Glands. Lauretta R, Sansone A, Sansone M, Romanelli F, Appetecchia M. Front Endocrinol (Lausanne). 2019 Mar 21;10:178. doi: 10.3389/fendo.2019.00178. eCollection 2019. Review. PMID:30984107
6. Insulin Resistance as a Risk Factor for Cutaneous Melanoma. A Case Control Study and Risk-Assessment Nomograms.
7. Scoppola A, Strigari L, Barnabei A, Petasecca P, De Galitiis F, Fulgenzi CAM, Roselli M, De Lorenzo A, Di Renzo L, Marchetti P, Torino F. Front Endocrinol (Lausanne). 2019 Nov 5;10:757. doi: 10.3389/fendo.2019.00757. eCollection 2019. PMID:31749765
8. L' utilizzo del trabecular bone score nell'acromegalia. M. Bianchini, P. Gargiulo. Acrocare anno 3, numero 1, marzo 2019
9. Tiroidectomia per ipertiroidismo: parametri vitali secondo gravità di malattia. Chiefari A. e Monti S. AME News. 26 Marzo 2019
10. Arthropathy in acromegaly: a questionnaire-based estimation of motor disability and its relation with quality of life and work productivity. Fatti LM, Cangiano B, Vitale G, Persani L, Mantovani G, Sala E, Arosio M, Maffei P, Dassie F, Mormando M, Giampietro A, Tanda L, Masiello ER, Nazzari E, Ferone D, Corbetta S, Passeri E, Guaraldi F, Grottoli S, Cannavò S, Torre MLT, Soranna D, Zambon A, Cavagnini F, Scacchi M; Study Group on Motor Disability in Acromegaly of the Italian Society of Endocrinology. Pituitary. 2019 Oct;22(5):552-560.

NEURONCOLOGY UNIT

HEAD: DR. ANDREA PACE, MD

STAFF

Edvina Galiè, MD
Marta Maschio, MD
Tatiana Koudriavtseva, MD
Veronica Villani, MD
Daniela Alò, Nurse
Roberta Rafaelli, Nurse
Giuliana Graziano, Technician
Gianluca Petreri, Technician
Alessia Zizzari, Physioterapist
Andrea Minnetti, Physiotherapist
Luciano Urbani, Physiotherapist
Dario Benincasa, Neurologist
Maria Andreina Rotondi, Social worker
Lara Guariglia, Psychologist
Sonia Ieraci, Psychologist
Cristiano Parisi, Physioterapist
Stefano Di Felice, Physioterapist
Margaux Lamaro, Physioterapist
Silvia Focarelli, Data Manager
Antonio Tanzilli, Neuro-psychologist
Andrea Maialetti, Neuro-psychologist
Marzia Piccoli, Data manager
Research collaborations with graduate and undergraduate students

MISSION

Clinical and research activity of Neuroncology Unit is dedicated to the diagnosis, therapeutical approaches and supportive and palliative care of primary brain tumors. Moreover, the Unit is involved in clinical and research activity related to Central and Peripheral Nervous System neurological complications of cancer and neurotoxicity of anticancer treatments.

CLINICAL ACTIVITY

The clinical activities of Neuroncology Unit include:

- Neurology clinic
- Neuro-oncology clinic
- Brain tumors related epilepsy
- Neuropathic Pain Clinic
- Neuropsychology and cognitive rehabilitation
- Neuro-oncologic Day Service for chemotherapy and supportive treatment of brain tumor patients
- Neurophysiology lab (Electromyography, Electroencephalography, Evoked Potentials)
- Rehabilitation service specialized in cancer rehabilitation for in- and out-patients
- Palliative and supportive home care for brain tumor patients

RESEARCH ACTIVITY

The research activity of Neurology Unit is focused on several topics. These include:

- Clinical neuro-oncology - The role of chemotherapy in recurrent malignant brain tumor has been evaluated in phase II trials exploring the activity and toxicity of several anticancer agents: temozolomide, fotemustine, bevacizumab, carboplatin, ortataxel, regorafenib. Recent trials have been launched including: weekly carboplatin AUC2 in recurrent malignant glioma; cloropromazine associated to temozolomide in newly diagnosed GBM.
- Traslational research - Next generation sequencing in glioma patients for identification of potential target therapy:NGS panels assessment allowing the simultaneous analysis of both DNA and RNA in order to identify either the presence of point variants and fusion genes or variations in the number of gene copies with a panel of 50 genes that are recognized to have a key role in tumour development, with the aim to identify potential therapeutic target
- Cognitive impairment assessment and rehabilitation - The role of cognitive rehabilitation programs has been investigated in different setting of care (in patients, outpatients, home care setting). Preliminary data showed beneficial effects of a computer-based cognitive rehabilitation programme and positive impact on Quality of Life in neuro-oncological patients. Preliminary results have been presented in national and international scientific meetings.
- Home-care for brain tumor patients - The efficacy of a program of comprehensive palliative care for brain tumour patients supported by the Lazio Regional Health System was evaluated analyzing place of death, caregiver satisfaction, re-hospitalization rate and the

impact on Health System costs. The results of this project have been presented in national and international scientific meeting.

- Palliative neuro oncology and telemedicine
  We developed a health WEB site portal applied to Neuro-Oncology supportive and palliative care issues (www.portaleneuroncologia.it). Neuroncology Unit of IRE is involved in an international project aimed to define guidelines and treatment recommendations on supportive and palliative care in brain tumor patients. The guidelines produced by the palliative care task force have been recently published on Lancet Oncology.
- Peripheral neurotoxicity of anticancer drugs - We are involved in an international study: The Chemotherapy-Induced Peripheral Neuropathy Outcome Measures Standardization (CIPerinoms) including 20 European and US oncology and neurology centres specifically designed to compare the validity and reliability of different methods proposed for the assessment of chemotherapy-induced peripheral neuropathy in a formal way. The results have been published on Annals of Oncology, European Journal of Cancer and Journal of Peripheral Nervous System.
- Rehabilitation in Oncology - Neuroncology Unit research activity includes the clinical research and methodological assessment of rehabilitation strategies in oncology. The definition of the role of rehabilitation in different setting of care (early rehabilitation of anticancer treatment sequelae; long term survivors rehabiltation needs, palliative rehabilitation) is the main object of several research projects.
- Role of comorbidities in the elderly glioblastoma - A prospective study: This study evaluated the impact of comorbidities on outcomes in elderly GBM patients. Comorbid conditions were indentified with the modified version of the Cumulative Illness Rating Scale (CIRS). The results showed that comorbidities play an important prognostic role in elderly with GBM. Preliminary results have been presented in national and international scientific meetings. The final results have been published in 2019.
- The prognostic value of pyrosequencing-detected MGMT-promoter hypermethylation in newly diagnosed patients with glioblastoma - We collected tumour samples of GBM patients who underwent surgery or biopsy and were/are followed at the Neuro-oncology Unit of National Cancer Institute Regina Elena. Preliminary data showed that patients with a cut-off <35% of methylation had a shorter PFS but not significant difference we observed in terms of overall survival. A multicentric study, with the participation of Italian neuroncology centers, on the methylation status of glioblastoma determined with pyrosequencing is ongoing.
- Headache as a presenting symptom of glioma: a cross-sectional study. Five hundred and twenty-seven patients were interviewed; 66 (12.5%) of them had headache as a presenting symptom of brain tumour. In our sample, headache resembled a tension-type headache in 31 patients (6% of all glioma cases) and the classic benign thunderclap headache (BTH) was found in 28 cases (5% of all glioma cases). The paper has been submitted for publication.
- Tumor related Epilepsy - The Center of Tumor-related Epilepsy is Coordinator of Italian League Against Epilepsy (LICE) Study Group on “Brain tumor-related Epilepsy”. This group includes 35 Italian epilepsy centers.

Ongoing Clinical Trials

1. Glioma Project: Glioma, aspetti biomolecolari dal tessuto alla Radiomica. Traslational study. Ongoing
2. Definizione dei temi rilevanti per le cure palliative nei pazienti affetti da neoplasia cerebrale e loro caregivers. (studio ancillare per la produzione di Linee Guida Nazionali Italiane sulle cure palliative in neuroncologia). Ongoing
3. Primary headache in malignant glioma patients. Multicentric observational study. Ongoing
4. Rational drug repositioning for an efficient and safe combined therapeutic approach to glioblastoma multiforme. Antipsicotic chlorpromazine in combination with temozolomide in first line treatment of un-methylated Glioblastoma patients. A multicentric phase II trial. Ongoing
5. Medical decision capacity in Brain Tumor patients. Assessment and neurocognitive correlations.

6. Coagulation/complement activation and cerebral hypoperfusion in relapsing-remitting multiple sclerosis. MoH project. In collaboration with Università di Roma La Sapienza
7. A model of comprehensive care and tele-health in brain tumor related epilepsy patients. Ongoing
8. Studio clinico-neuropatologico-molecolare di pazienti affetti da glioblastoma lungo-sopravviventi. Multicentric study (ACC). Ongoing
9. Revision of the module 'EORTC QLQ-BN20': Phase I-III. EORTC QoL group. Ongoing
10. Neurotoxicity prevention with nutracetics in myeloma patients treated with Bortezomib. A Pilot Study. Ongoing
11. Efficacy and tolerability of low dose vs standard doses of AEDs in newly diagnosed epileptic patients (STANDLOW). Multicentric, randomized trial

Publications

1. Lombardi Giuseppe1, De Salvo Gian Luca2, Brandes Alba Aurela3, Eoli Marica4, Rudà Roberta5, Faedi Marina6, Lolli Ivan7, Pace Andrea8, Daniele Bruno9, Pasqualetti Francesco10, Rizzato Simona11, Bellu Luisa1, Pambuku Ardi1, Farina Miriam2, Magni Giovanna2, Indraccolo Stefano12, Gardiman Marina Paola13, Soffietti Riccardo5 and Zagonel Vittorina1. REGOMA: a randomized, multicenter, controlled open-label phase II clinical trial of regorafenib compared to lomustine in relapsed glioblastoma patients. Lancet Oncology 2019 IF 36.418
2. Veronica Villani*, Antonio Tanzilli, Stefano M Telera, Irene Terrenato, Antonello Vidiri, Alessandra Fabi, Chiara Zucchella, Carmine M Carapella, Laura Marucci, Beatrice Casini, Mariantonia Carosi, Piero M Oppido & Andrea Pace. Comorbidities in elderly patients with glioblastoma: a field-practice study. Future Oncology IF 2.369
3. Cavaletti G, Cornblath DR, Merkies ISJ, Postma TJ, Rossi E, Alberti P, Bruna J, Argyriou AA, Briani C, Velasco R, Kalofonos HP, Psimaras D, Ricard D, Pace A, Faber CG, Lalisang RI, Brandsma D, Koeppen S, Kerrigan S, Schenone A, Grisold W, Mazzeo A, Padua L, Dorsey SG, Penas-Prado M, Valsecchi MG; CI-PeriNomS Group. Patients' and physicians' interpretation of chemotherapy-induced peripheral neurotoxicity. J Peripher Nerv Syst. 2019 Jan 23. IF 2.55
4. Silvani A, De Simone I, Fregoni V, Biagioli E, Marchioni E, Caroli M, Salmaggi A, Pace A, Torri V, Gaviani P, Quaquarini E, Simonetti G, Rulli E, D'Incalci M; Italian Association of Neuro-Oncology. Multicenter, single arm, phase II trial on the efficacy of ortataxel in recurrent glioblastoma. J Neurooncol. 2019 Feb 6. doi: 10.1007/s11060-019-03116-z. IF 3.060
5. Telera S, Gorgoglione N, Raus L, Vidiri A, Villani V, Pace A, Fabi A, Crispo F, Castiglione M, Sperduti I, Boccaletti R. Open kyphoplasty for metastatic spine disease: A retrospective clinical series. World Neurosurg. 2019 Apr 2. pii: S1878-8750(19)30938-6. IF 2.878
6. Maschio M, Pauletto G, Zarabla A, Maialetti A, Lus T, Villani V, Fabi A, Koudriavtseva T, Giannarelli. D. Perampanel in patients with brain tumor-related epilepsy in real-life clinical practice: a retrospective analysis. Int J Neurosci. 2019 Jun;129(6):593-597. Epub 2018 Dec 26. PubMed PMID: 30507318. IF 1.848
7. Villani V, Fabi A, Tanzilli A, Pasqualetti F, Lombardi G, Vidiri A, Gonnelli A, Molinari A, Cantarella M, Bellu L, Terrenato I, Carosi M, Maschio M, Telera SM, Carapella CM, Cognetti F, Paiar F, Zagonel V, Pace A. A multicenter real-world study of bevacizumab in heavily pretreated malignant gliomas: clinical benefit is a plausible end point? Future Oncol. 2019 May;15(15):1717-1727. doi:10.2217/fon-2018-0826. Epub 2019 Apr 12 IF 2.369
8. Tanzilli A, Pace A, Fabi A, Telera S, Vidiri A, Carosi M, Terrenato I, Koudriavtseva T, Boccaletti R, Villani V. Neurocognitive evaluation in older adult patients affected by glioma. J Geriatr Oncol. 2019 Jul 2. pii: S1879-4068(18)30515-0. IF 3.359
9. Villani V, Pace A, Vidiri A, Tanzilli A, Sperati F, Terrenato I, Mariantonia C, Casini B, Metro G, Maschio M, Tatiana K, Cognetti F, Fabi A. Phase II study of weekly carboplatin in pretreated adult malignant gliomas. J Neurooncol. 2019 Aug;144(1):211-216. doi: 10.1007/s11060-019-03223-x. Epub 2019 Jul 4. Erratum in: J Neurooncol. 2019 Sep 9; IF 3.129

10. Maschio M, Aguglia U, Avanzini G, Banfi P, Buttinelli C, Capovilla G, Casazza MML, Colicchio G, Coppola A, Costa C, Dainese F, Daniele O, De Simone R, Eoli M, Gasparini S, Giallonardo AT, La Neve A, Maialetti A, Mecarelli O, Melis M, Michelucci R, Paladin F, Pauletto G, Piccioli M, Quadri S, Ranzato F, Rossi R, Salmaggi A, Terenzi R, Tisei P, Villani F, Vitali P, Vivalda LC, Zaccara G, Zarabla A, Beghi E; Brain Tumor-related Epilepsy study group of Italian League Against Epilepsy (LICE). Management of epilepsy in brain tumors. Neurol Sci. 2019 Oct;40(10):2217-2234. doi: 10.1007/s10072-019-04025-9. Epub 2019 Aug 7. IF 2.484
11. Maschio M, Mengarelli A, Zarabla A, Giannarelli D, Maialetti A, Gumenyuk S, Renzi D, Palombi F, Pisani F, Romano A, Spadea A, Galiè E, Marchesi F. Role of Pregabalin in Treatment of Polyneuropathy in Multiple Myeloma Patients: A Retrospective Study. Clin Neuropharmacol. 2019 Sep/Oct;42(5):167-171. IF 1.272
12. Rudà R, Pellerino A, Pace A, Carapella CM, Dealis C, Caroli M, Faedi M, Bello L, Migliore E, Marchese G, Bertero L, Cassoni P, Soffietti R. Efficacy of initial temozolomide for high-risk low grade gliomas in a phase II AINO (Italian Association for Neuro-Oncology) study: a post-hoc analysis within molecular subgroups of WHO 2016. J Neurooncol. 2019 Sep 25. IF 3.129
13. Matteoni S, Abbruzzese C, Villani V, Malorni W, Pace A, Matarrese P, Paggi MG. The influence of patient sex on clinical approaches to malignant glioma. Cancer Lett. 2020 Jan 1;468:41-47. IF 6.508

GASTROENTEROLOGY AND DIGESTIVE ENDOSCOPY UNIT

HEAD: DR. VITTORIA STIGLIANO, MD

STAFF

Daniela Assisi, MD
Rocco Lapenta, MD
Cinzia Quondamcarlo, MD
Lupe Sanchez Mete, MD
Elena Mannisi, MD (from January to September)
Paola Capra, Lead nurse
Laura Argento, Nurse
Daniela Cannone, Nurse
Alessandra Cinti, Nurse
Susanna Pampinella, Nurse
Marina Santamaria, Nurse
Cinzia Toresi, Health worker
Mario Di Stefano, Health Worker
2 PhD Students of "La Sapienza" University Of Rome

MISSION

Gastroenterology and Digestive Endoscopy Unit plays a critical role in the oncological prevention, the diagnosis and treatment of gastrointestinal cancer.

We can boast an extensive experience and expertise in the field of Colorectal cancer screening in high (i.e. Hereditary Colorectal Cancer Syndromes affected individuals) and average risk population (i.e. Breast cancer patients).

The Unit is equipped with new advanced endoscopic technologies that allow a thorough evaluation of gastrointestinal tract improving precancerous lesion/early cancer detection and treatment.

Another important area of interest and development is Nutritional support in cancer patients. Patients with cancer, particularly gastrointestinal and head and neck cancer, are at high risk for malnutrition that negatively impact on oncological treatment outcome. The Unit offers an outpatients/inpatients nutrition clinic for cancer patients, and provide endoscopic approach to achieve enteral access if necessary.

CLINICAL ACTIVITY

Diagnostic-operative endoscopy

In addition to the standard diagnostic and therapeutic procedures, the Unit provides a number of specialised procedures:

- Diagnosis and treatment of precancerous and cancerous lesions of the upper and lower gastrointestinal tract, through the use of high definition endoscopes, digital chromoendoscopy and in the near future the Confocal laser endomicroscopy technology which allows in vivo histological examination
- Diagnosis and staging of gastrointestinal submucosal lesions, rectal, pancreatic, mediastinic and lung tumours through the use of endoscopic ultrasound (EUS, EUS-FNA,EBUS-TBNA)
- Diagnosis and treatment of precancerous and cancerous lesions of the small bowel through the use of capsule endoscopy and, in selected cases, of therapeutic device assisterd enteroscopy
- Diagnosis and palliative treatment of gastrointestinal, pancreatic and biliary tree cancer
- Emergency endoscopy for acute gastrointestinal bleeding
- Percutaneous Endoscopic Gastrostomy (PEG) for long term enteral nutrition

Reference centres and counselling for outpatients and inpatients

- Since 2005, the Unit has been recognized Reference Centre of Lazio Region for Familial Adenomatous Polyposis (FAP) and since September 2017 Reference Centre of Lazio Region for Lynch syndrome and Peutz Jeghers syndrome. The Hereditary Colorectal Cancer Syndromes Clinics of the Unit guarantees an adequate management of these rare diseases.

- Since 2009 the Unit has been recognized Reference Centre of Lazio Region for Celiac Disease
- Nutritional counselling is offered to patients at risk of malnutrition at diagnosis, during and after therapies and adequate nutritional support is set up.
- A counselling is offered for all the gastroenterological and hepato-bilio-pancreatic diseases

Research Activity

The major research interest of our Unit is in the field of colorectal cancer, in particular of familial and hereditary colorectal cancer.

Further fields of interest are EUS and biliary stent

During 2019 we pursued the following Research Projects

- RC Project: Identification of new susceptibility genes for Hereditary colorectal cancer Principal Investigator: Dr Lupe Sanchez Mete
- Funded Project: Randomised, double-blind, placebo-controlled study of the, efficacy, safety and tolerability of EPA-FFA gastro-resistant capsules, in patients with Familial Adenomatous Polyposis (FAP); funded by SLA Pharma. Principal Investigator: Dr Vittoria Stigliano

Publications

1. Sanchez-Mete L, Stigliano V. Update on small bowel surveillance in hereditary colorectal cancer syndromes. Tumori. 2019 Feb;105(1):12-21. doi: 10.1177/0300891618792461. Epub 2018 Aug . Impact Factor 1.234.
2. Vanella G, Coluccio C, Di Giulio E, Assisi D, Lapenta R . Tertiary stent-in-stent for obstructing colorectal cancer: A case report and literature review. World J Gastrointest Endosc. 2019 Jan 16;11(1):61-67. doi: 10.4253/wjge.v11.i1.61.
3. G. Cini, G.N. Ranzani, R. Cannizzaro, A. Chiappa, M. Fassan, M. Fornasarig, L. Roncucci, L. Sanchez Mete, M.G.Tibiletti, A. Viel. La sindrome di Lynch raccontata dalla Associazione AIFEG. MR La Rivista Italiana delle Malattie Rare giugno 2019; anno III n. 2:16-24.

ANESTHESIA, INTENSIVE CARE AND PAIN THERAPY UNIT

Head: Dr. Ester Forastiere, MD

Staff

Maria Sofra MD,
Piera Di Angelo MD,
Francesca Principi MD,
Paolo Moricca MD,
Luana Fabrizi MD,
Luca Colantonio MD,
Maria Elena Marcelli MD,
Cecilia Coccia MD,
Federico Pierconti MD,
Alessandra Costantino MD,
Ilaria Monteferrante MD,
Claudia Frigieri MD,
Francesca Romana Giordano MD,
Giulia Torregiani MD,
Emanuela Venti MD,
Lorella Pelagalli MD,
Felice Centulio MD,
Antonio Calamaro MD,
Francesco Rendina MD,
Carmela Stigliano MD,
Claudia Claroni MD,
Gabriele Tola MD,
Carmela Bonarrigo MD,
Lamberto Laurenzi MD,
Giampiero Pontrandolfi MD,
Maddalena Giovannetti MD

Mission

Perioperative evaluation of surgical patients. Management of intraoperative anesthesiology. Perioperative assistance to patients undergoing surgery. Intensive care of medical and surgical oncologic patients. Non operating room anesthesia (NORA). Pain management of oncologic patients.

Clinical Activity

Perioperative Medicine: management of perioperative patients for the following surgeries: thoracic surgery, urology, gynecology, plastic and reconstructive surgery, breast surgery, dermatology, neurosurgery, major orthopedic surgery, ORL surgery, digestive surgery, hepatobiliopancreatic surgery. Anesthesiologists participate in the Disease management teams of the various surgical teams.

Intensive care of surgical, oncologic and hematological patients.

NORA: sedation of patients in invasive procedures: interventional radiology, bronchoscopy, gastrocolonoscopy, CPRE, EBUS.

Pain therapy clinic: positioning of vascular accesses, PICC and PORT, treatment of oncologic pain with invasive and non invasive procedures.

Research Activity

Translational clinical research protocols, approved by the Ethics Committee with a retrospective, prospective, observational, randomized prospective structure.

Collaboration with multi center studies.

Scientific events on subjects closely associated with Anesthesiology:

La Terapia Intensiva nel XXI secolo: Focus sull'ospite, 20 June 2019

Current studies:

- Prospective multicentre international observational study of postoperative vasopressor use (SQUEEZE)
- A multicentre international cohort study - Epidemiology and determinants of outcomes of hospital acquired blood stream infections in the intensive care – (Eurobact 2)
- Decurarization After Thoracic Anesthesia – Reversal neuromuscolar block double blind prospective randomized multicenter study in thoracic surgery.
- DIANA Study multicenter, international, prospective, observational cohort in critically ill patients receiving empirical antibiotic therapy for suspected or confirmed infections at the Intensive Care Unit (ICU).
- Intraoperative esophageal pressure monitoring in laparoscopic surgery.
- International observational study to understand the impact and best practices of airway management in critically ill patients (INTUBE)

Publications

1. Aceto P, Beretta L, Cariello C, Claroni C, Esposito C, Forastiere EM, Guarracino F, Perucca R, Romagnoli S, Sollazzi L, Cela V, Ercoli A, Scambia G, Vizza E, Ludovico GM, Sacco E, Vespasiani G, Scudeller L, Corcione A, Societa Italiana di Anestesia Analgesia Rianimazione e Terapia Intensiva (SIAARTI), Societa Italiana di Ginecologia e Ostetricia (SIGO), and Societa Italiana di Urologia (SIU). Joint Consensus on Anesthesia in Urologic and Gynecologic Robotic Surgery: Specific Issues in Management from a Task Force of the SIAARTI, SIGO, and SIU. Minerva Anestesiol. 2019 Mar 29; 85(8): 871a IF:2.840.
2. Blot S, Antonelli M, Arvaniti K, Blot K, Creagh-Brown B, de Lange D, De Waele J, Deschepper M, Dikmen Y, Dimopoulos G, Eckmann C, Francois G, Girardis M, Koulenti D, Labeau S, Lipman J, Lipovestky F, Maseda E, Montravers P, Mikstacki A, Paiva J, Pereyra C, Rello J, Timsit J, Vogelaers D, Abdominal Sepsis Study (AbSeS) group on behalf of the Trials Group of the European Society of Intensive,Care Medicine, (Lorella Pelagalli Collaborator). Epidemiology of Intra-Abdominal Infection and Sepsis in Critically Ill Patients: "AbSeS", a Multinational Observational Cohort Study and ESICM Trials Group Project. Intensive Care Med. 2019 12; 45(12): 1703a IF:18.967
3. Claroni C, Covotta M, Torregiani G, Marcelli ME, Tuderti G, Simone G, Scotto di Uccio A, Zinilli A, Forastiere E. Recovery from Anesthesia After Robotic-Assisted Radical Cystectomy: Two Different Reversals of Neuromuscular Blockade. Journal of Clinical Medicine. 2019 10/24; 8(11): 1774a IF:5.688.
4. Covotta M, Claroni C, Costantini M, Torregiani G, Pelagalli L, Zinilli A, Forastiere E. The Effects of Ultrasound-Guided Transversus Abdominis Plane Block on Acute and Chronic Postsurgical Pain After Robotic Partial Nephrectomy: A Prospective Randomized Clinical Trial. Pain Med. 2019 Aug 29; a IF:2.758.
5. Langiano N, Fiorelli S, Deana C, Baroselli A, Bignami EG, Matellon C, Pompei L, Tornaghi A, Piccioni F, Orsetti R, Coccia C, Sacchi N, D'Andrea R, Brazzi L, Franco C, Accardo R, Di Fuccia A, Baldinelli F, De Negri P, Gratarola A, Angeletti C, Pugliese F, Micozzi MV, Massullo D, Della Rocca G. Airway Management in Anesthesia for Thoracic Surgery: A "Real Life" Observational Study. Journal of Thoracic Disease. 2019 08; 11(8): 3257a IF:2.027.
6. Mistraletti G, Mezzetti A, Anania S, Ionescu Maddalena A, Del Negro S, Giusti GD, Gili A, Iacobone E, Pulitanò SM, Conti G, Bocci MG. (Lorella Pelagalli Collaborator). Improving communication toward ICU families to facilitate understanding and reduce stress. Protocol for a multicenter randomized and controlled Italian study. 2019 Contemp Clin Trials. Nov;86:105847. IF 2.280

PSYCHOLOGY UNIT
HEAD: DR. PATRIZIA PUGLIESE, MD

STAFF

Maria Perrone, Psychologist
Gabriella Maggi, Psychologist
Maria Franca Condoleo, Psychologist
Giovanna D'antonio, Psychologist
Anita Caruso, Psychologist
Chiara Falcicchio, Psychologist
Alessandro Bonucci, Psychologist

MISSION

Unit of Psychology is focused on prevention, treatment and rehabilitation of psychological suffering and on quality of life in clinical and research activity.

CLINICAL ACTIVITY

The main clinical approach for achieving these objectives is the integration of psychological care within the medical care in DMT and in the departments of oncology and dermatology, aimed to decrease both the psychological suffering and direct and indirect costs. The psychologists use individual, group, couple and family psychotherapies, phone support. The clinical activity includes also the mediation of the psychologist in the doctor-patient relationship and in the therapeutic pathway. Other activities are the integration of psychologists with the other professionals involved in the setting of care (nurses and volunteers) and the creation of a network of Lazio psychologists, working in various hospitals and local structures, for a correct sending patients.

The productivity of the Service is in line with the budget negotiation 2019. In accordance with project of humanization, the Psychology Unit has achieved levels of satisfaction in 94% of patients.

RESEARCH ACTIVITY

Quality of life study

The study "Facilitatori e/o barriere all'accesso al supporto psicologico in pazienti oncologici: uno studio multicentrico" aims to identify the clinical, demographic, psychosocial factors and the pathway of patients sending associated with adherence to psychological support in cancer patients.The study coordinator is IRE, in collaboration with the psycho-oncology structures of the Lazio region.

The multicenter study "Bisogni riabilitativi nelle pazienti affette da carcinoma mammario in fase precoce: l'utilizzo di un approccio basato sul patient reported outcome (PRO), coordinated by IRE and in collaboration with the other italian oncological IRCCS, is based on validation of a PRO questionnaire for the detection in the survival phase of rehabilitation needs in women with early breast cancer and on the assessment of the impact of rehabilitation needs on QoL and psychological distress.

Translational study

The studies "Epigenetic control of breast cancer progression: animal and clinical studies" (Ministero della Salute) and "Stile di vita come fattore di rischio nella progressione del tumore al seno: indagine sui biomarcatori neuroendocrini e molecolari dello stress" (Fondazione Umberto Veronesi) in collaboration with IRE Medical Oncology and ISS were aimed to elucidate the molecular mechanisms involved in the effects of stress on breast cancer progression both in animal models and in high risk breast cancer patients.

Since July 2012 to date the clinical study enrolled 80 women (mean age = 50.5). At a median follow up of 20 months 40 women were evaluable for the first analysis.

The results showed that after six months of chemotherapy, patients showed increased levels of depression as well as cortisol and serum chemokine MIP-1b LFA-IV-, which has not only a tumor-

promoting role but also is directly related with a poor prognosis. As concern psychological tests no difference emerged after six months after chemotherapy. However, the average score detected using the Beck depression inventory (BDI) indicated mild depression. Interestingly, we found increased levels of BDNF associated to decreased anxiety and depression levels at 12 months' follow-up. Overall, data indicate that psychological factors can affect physiological responses in breast cancer patients. This is especially relevant since stressful events and negative affective states can amplify the consequences of the pathology precipitating disease progression and promoting recurrence. Further analyses are in progress in order to detect disease recurrence and increase the strength of the data.

PUBLICATIONS

1. Fabi A, Lanzetta G, Vizza E, Corsi D, Moscetti L, Spinelli G, Mentuccia L, Lalle M, Perrone M, Baiocco L, Falcicchio C, Milani A, Giannarelli D, Cognetti F, Pugliese P. The Unmet Need for Oncofertility Preservation in Women: Results of a Survey by Different Oncological Specialists in Lazio, Italy. Curr.Probl.Cancer. 2019 May 17; a IF:3.698.
2. Maggi G, Terrenato I, Giacomelli L, Zoccali C, Condoleo MF, Falcicchio C, Baldi J, Vari S, Ferraresi V, Biagini R, Pugliese P. Sarcoma Patients' Quality of Life from Diagnosis to Yearly Follow-Up: Experience from an Italian Tertiary Care Center. Future Oncol. 2019 Sep; 15(27): 3125a IF:2.279.

PHASE 1 INVESTIGATION UNIT

The Phase 1 Clinical Center is an Organizational Unit of the Clinic and Research Oncological Department and it has been structured as Inter-discipline Unit, because it assumes investigation both oncological than dermatological and coordinate investigations studies of all Departments of IFO.

The Phase 1 Clinical Center, in IFO, is equipped with:

- DH beds no. 5 and hospitalization h24 n. 2
- Technologies for monitoring and surveillance of patients as a sub-intensive therapy
- Dedicated staff
- A network of support Clinical Units and Professionals for each type of study prepared according to the AIFA Resolution n. 809/2015
- AIFA conformity certifications for phase 1 studies
- "Temperature controlled" transport systems
- Operating procedures for activities related to the investigation paths and relations with other internal or external structures of the IFO.

During 2019 was conducted 4 studies.

The first one "An Open Label Clinical Study to Evaluate the long-term dermal safety of 12-weeks topical administration of N-Acetyl-Ged-0507-34-levo gel 5% in patient with facial acne" has been concluded with an enrollment of 25 patients and the trial report has been published.

The other studies want to investigate target therapies in solid tumors:

a) Phase 1 Dose Escalation and Cohort Expansion Study of TSR-042, an anti-PD-1 Monoclonal Antibody, in Patients with Advanced Solid Tumors
b) A phase Ib, open-label, multicenter study (BO40933) evaluating the safety and efficacy of ipatasertib in combination with rucaparib in patients with advanced breast, ovarian, or prostate cancer
c) Phase 1 Dose Escalation and Cohort Expansion Study of TSR-042, an anti-PD-1 Monoclonal Antibody, in Patients with Advanced Solid Tumors).

Two studies have enrolled patients.

Preparation activities have been scheduled for self-certification of laboratories: Pathological Anatomy, Cutaneous Histopathology, Microbiology and Virology and of the CTQT (Clinical Trial Quality Team) for no-profit studies with promoter IFO.

The staff of the Phase 1 Clinical Center, in 2019, carried out training in the following areas:

- BLSD, ALS
- Good Clinical Practices
- Advanced simulation in emergency / urgency by addressing 5 clinical pictures: cardiorespiratory arrest, anaphylactic shock, stroke, myocardial infarction, massive bleeding
- Simulation of assisted intra-hospital transport
- Administration, monitoring and management of complications of chemotherapy and immunotherapy and has participated in numerous oncology conferences.

The year 2019 has been the truly first year of activity of the Phase 1 Clinical Center. During the year the strategy to develop the Clinical Center has been designed and the goals have been shared with the Scientific Direction of Queen Elena Research Institute:

- Lunch more investigation studies on drugs,
- Recruit phase 1 studies on medical devices use,
- Start no-profit studies on diagnostic or therapeutic issues.

DEPARTMENT OF RESEARCH ADVANCE DIAGNOSTIC AND TECHNOLOGICAL INNOVATION

DIRECTOR: DR. GIUSEPPE SANGUINETI

ONCOGENOMICS AND EPIGENETICS UNIT

HEAD: DR. GIOVANNI BLANDINO, MD, PHD

STAFF

Giulia Fontemaggi, Senior Post-Doc
Silvia Di Agostino, Senior Post-Doc
Gianluca Bossi, Senior Post-Doc
Federica Ganci, Post-Doc
Sara Donzelli, Post-Doc
Federica Lo Sardo, Post-Doc
Valeria Canu, PhD
Fabio Valenti, PhD
Marco Varmi, Technician
Roberto Bernardi, Administrative collaborator
Claudio Pulito, Post-Doc
Etleva Korita, PhD
Chiara Turco, PhD Student
Alina Palcau, Student
Claudia Catulli, Student
Giulia Orlandi, Student
Anna Maria Biroccio, PhD
Pasquale Zizza, Post-Doc
Angela Rizzo, Post-Doc
Sara Iachettini, Post-Doc
Eleonora Petti, Post-Doc
Roberto Dinami, Post-Doc
Carmen D'Angelo, Technician
Angela Dello Stritto, Master Student
Carmen Maresca, Technician
Luca Pompili, Post-Doc.
Patrizio Giacomini, MD
Matteo Allegretti, Post-Doc
Katia Messana, Post-Doc
Elisa Tremante, Post-Doc
Elena Giordani, Technician
Rocco Fraioli, Technician
Paolo Romania, Post-doc
Maria Simitakos, Erasmus Graduate Student
Oreste Segatto, MD
Sergio Anastasi, Senior Scientis
Dante Lamberti, Post-Doc
Giulia Cristinziano, PhD student
Maria Giulia Rizzo, PhD
Giulia Regazzo, Post-Doc
Manuela Spagnuolo, Post-doc
Federica Rinaldi, Master Student
Elham Rahimzadeh, Master Student
Ana Belen Diaz Mendez, PhD student

MISSION

Developing more precise diagnostic approaches to predict cancer progression and prognosis is the key to precision medicine. The mission of the Oncogenomic and Epigenetic Unit mirrors at specific genomic and epigenetic alterations in both solid and hematopoietic malignancies that hold the potential to represent novel cancer biomarkers or druggable targets. This is pursued through genome wide approaches applied to cell systems, animal models, tissues and biological fluids ctDNA and non-coding RNAs of cancer patients.

CLINICAL ACTIVITY

The Oncogenomic and Epigenetic Unit actively contributes to the clinical research activity of Regina Elena National Cancer Institute through:

The generation of molecularly and clinically annotated databases of specific types of tumors. This also includes the collection and the storage of DNA, RNA and proteins from both tissues and biological fluids from cancer patients.

The establishment of datasets of raw data from genome wide analysis coding and con-coding RNA profiles, RNA-Seq and DNA mutational analysis of matched cancer lesions.

The establishment of early passage culture from melanoma, breast, lung, ovary, endometrial, brain, head and neck cancer lesions.

RESEARCH ACTIVITY

The research objectives of the Oncogenomic and Epigenetic Unit are pursed through the integrated experimental work of the following groups:

Blandino's group is actively pursuing the identification of molecular biomarkers non-coding RNAs whose association with the TP53 status may predict recurrence of head and neck cancers.

Biroccio's group is actively investigating the extra-telomeric role of TRF2 in oncogenesis with the aim to identify novel therapeutic targets for antitumoral therapies in colon cancer.

Giacomini's group is actively developing and optimizing nanoparticles for cancer therapeutics, and assays to detect circulating tumor DNA ctDNA in real-life Liquid Biopsy LBstudies.

Rizzo's group is actively investigating the role of extracellular circulating miRNAs in hematopoietic malignancies and brain tumors as promising biomarkers for disease classification and outcome prediction.

The Segatto's group has generated genetically defined mouse models of intrahepatic cholangiocarcinoma iCCA driven by FGFR2 fusion proteins FFP.These models are being used to identify iCCA vulnerabilities associated to oncogenic dependence from FFPs.

Publications

1. In vivo experimental models account for higher complexity than in vitro preclinical settings in cancer Blandino G, Lo Sardo F. J Thorac Dis. 2019 Mar;11Suppl 3:S461-S464. doi:10.21037/jtd.2018.11.17. PMID: 30997248
2. miR-96-5p targets PTEN expression affecting radio-chemosensitivity of HNSCC cells. Vahabi M, Pulito C, Sacconi A, Donzelli S, D'Andrea M, Manciocco V, Pellini R, Paci P, Sanguineti G, Strigari L, Spriano G, Muti P, Pandolfi PP, Strano S, Safarian S, Ganci F, Blandino G. J Exp Clin Cancer Res. 2019 Mar 29;381:141. doi: 10.1186/s13046-019-1119-x. PMID: 30925916
3. Argonaute 2 drives miR-145-5p-dependent gene expression program in breast cancer cells. Bellissimo T, Tito C, Ganci F, Sacconi A, Masciarelli S, Di Martino G, Porta N, Cirenza M, Sorci M, De Angelis L, Rosa P, Calogero A, Fatica A, Petrozza V, Fontemaggi G, Blandino G, Fazi F. Cell Death Dis. 2019 Jan 8;101:17. doi: 10.1038/s41419-018-1267-5. PMID: 30622242
4. Transcriptional activation of the miR-17-92 cluster is involved in the growth-promoting effects of MYB in human Ph-positive leukemia cells. Spagnuolo M, Regazzo G, De Dominici M, Sacconi A, Pelosi A, Korita E, Marchesi F, Pisani F, Magenta A, Lulli V, Cordone I, Mengarelli A, Strano S, Blandino G, Rizzo MG, Calabretta B. Haematologica. 2019 Jan;1041:82-92. doi: 10.3324/haematol.2018.191213. Epub 2018 Aug 3. PMID: 30076175
5. Wild type- and mutant p53 proteins in mitochondrial dysfunction: emerging insights in cancer disease. Blandino G, Valenti F, Sacconi A, Di Agostino S. Semin Cell Dev Biol. 2019 May 23. pii: S1084-95211830163-0. doi: 10.1016/j.semcdb.2019.05.011. [Epub ahead of print] Review. IF: 5,460
6. cTAZ: a safeguard factor of antiviral response. Strano S, Blandino G. EMBO Rep. 2019 Jun;206. pii: e48169. doi: 10.15252/embr.201948169. IF: 8,383
7. The circRNA-microRNA code: emerging implications for cancer diagnosis and treatment. Verduci L, Strano S, Yarden Y, Blandino G. Mol Oncol. 2019 Apr;134:669-680. doi: 10.1002/1878-0261.12468. Epub 2019 Feb 18. Review.
8. TRF2 positively regulates SULF2 expression increasing VEGF-A release and activity in tumor microenvironment. Zizza P, Dinami R, Porru M, Cingolani C, Salvati E, Rizzo A, D'Angelo C, Petti E, Amoreo CA, Mottolese M, Sperduti I, Chambery A, Russo R, Ostano P, Chiorino G, Blandino G, Sacconi A, Cherfils-Vicini J, Leonetti C, Gilson E, Biroccio A. Nucleic Acids Res. 2019 Apr 23;477:3365-3382. doi: 10.1093/nar/gkz041.
9. The miR-205-5p/BRCA1/RAD17 Axis Promotes Genomic Instability in Head and Neck Squamous Cell Carcinomas. Valenti F, Sacconi A, Ganci F, Grasso G, Strano S, Blandino G, Di Agostino S. Cancers Basel. 2019 Sep 11;119. pii: E1347. doi: 10.3390/cancers11091347.
10. Dropwort-induced metabolic reprogramming restrains YAP/TAZ/TEAD oncogenic axis in mesothelioma. Pulito C, Korita E, Sacconi A, Valerio M, Casadei L, Lo Sardo F, Mori F, Ferraiuolo M, Grasso G, Maidecchi A, Lucci J, Sudol M, Muti P, Blandino G, Strano S. J Exp Clin Cancer Res. 2019 Aug 9;381:349. doi: 10.1186/s13046-019-1352-3.
11. β-arrestin1/YAP/mutant p53 complexes orchestrate the endothelin A receptor signaling in high-grade serous ovarian cancer. Tocci P, Cianfrocca R, Di Castro V, Rosanò L, Sacconi A, Donzelli S, Bonfiglio S, Bucci G, Vizza E, Ferrandina G, Scambia G, Tonon G, Blandino G, Bagnato A.

12. Targeting mutant p53 in cancer: the latest insights. Di Agostino S, Fontemaggi G, Strano S, Blandino G, D'Orazi G. J Exp Clin Cancer Res. 2019 Jul 5;381:290. doi: 10.1186/s13046-019-1302-0.
13. E6AP Promotes a Metastatic Phenotype in Prostate Cancer. Gamell C, Bandilovska I, Gulati T, Kogan A, Lim SC, Kovacevic Z, Takano EA, Timpone C, Agupitan AD, Litchfield C, Blandino G, Horvath LG, Fox SB, Williams SG, Russo A, Gallo E, Paul PJ, Mitchell C, Sandhu S, Keam SP, Haupt S, Richardson DR, Haupt Y. iScience. 2019 Dec 20;22:1-15. doi: 10.1016/j.isci.2019.10.065. Epub 2019 Nov 2.
14. Emerging roles of telomeric chromatin alterations in cancer. Cacchione S, Biroccio A, Rizzo A. J Exp Clin Cancer Res. 2019 Jan 17;381:21. doi: 10.1186/s13046-019-1030-5. Review.
15. Tailoring a lead-like compound targeting multiple G-quadruplex structures. Amato J, Platella C, Iachettini S, Zizza P, Musumeci D, Cosconati S, Pagano A, Novellino E, Biroccio A, Randazzo A, Pagano B, Montesarchio D. Eur J Med Chem. 2019 Feb 1;163:295-306. doi: 10.1016/j.ejmech.2018.11.058. Epub 2018 Nov 27.
16. Cancer cells induce immune escape via glycocalyx changes controlled by the telomeric protein TRF2. Cherfils-Vicini J, Iltis C, Cervera L, Pisano S, Croce O, Sadouni N, Győrffy B, Collet R, Renault VM, Rey-Millet M, Leonetti C, Zizza P, Allain F, Ghiringhelli F, Soubeiran N, Shkreli M, Vivier E, Biroccio A, Gilson E. EMBO J. 2019 Jun 3;3811. pii: e100012. doi: 10.15252/embj.2018100012. IF 10.557
17. TRF2 positively regulates SULF2 expression increasing VEGF-A release and activity in tumor microenvironment. Zizza P, Dinami R, Porru M, Cingolani C, Salvati E, Rizzo A, D'Angelo C, Petti E, Amoreo CA, Mottolese M, Sperduti I, Chambery A, Russo R, Ostano P, Chiorino G, Blandino G, Sacconi A, Cherfils-Vicini J, Leonetti C, Gilson E, Biroccio A. Nucleic Acids Res. 2019 Apr 23;477:3365-3382. doi: 10.1093/nar/gkz041.
18. Dyads of G-Quadruplex Ligands Triggering DNA Damage Response and Tumour Cell Growth Inhibition at Subnanomolar Concentration. Doria F, Salvati E, Pompili L, Pirota V, D'Angelo C, Manoli F, Nadai M, Richter SN, Biroccio A, Manet I, Freccero M. Chemistry. 2019 Aug 22;2547:11085-11097. doi: 10.1002/chem.201900766.
19. Chlorambucil targets BRCA1/2-deficient tumours and counteracts PARP inhibitor resistance. Tacconi EM, Badie S, De Gregoriis G, Reisländer T, Lai X, Porru M, Folio C, Moore J, Kopp A, Baguña Torres J, Sneddon D, Green M, Dedic S, Lee JW, Batra AS, Rueda OM, Bruna A, Leonetti C, Caldas C, Cornelissen B, Brino L, Ryan A, Biroccio A, Tarsounas M. EMBO Mol Med. 2019 Jul;117:e9982. doi: 10.15252/emmm.201809982. IF 10.624
20. Reisländer T, Lombardi EP, Groelly FJ, Miar A, Porru M, Di Vito S, Wright B, Lockstone H, Biroccio A, Harris A, Londoño-Vallejo A, Tarsounas M. BRCA2 abrogation triggers innate immune responses potentiated by treatment with PARP inhibitors. Nat Commun. 2019 Jul 17;101:3143. doi: 10.1038/s41467-019-11048-5. IF 11.878
21. BRCA2 Deletion Induces Alternative Lengthening of Telomeres in Telomerase Positive Colon Cancer Cells. Pompili L, Maresca C, Dello Stritto A, Biroccio A, Salvati E. Genes Basel. 2019 Sep 10;109. pii: E697. doi: 10.3390/genes10090697. IF 3.331
22. Insights into telomeric G-quadruplex DNA recognition by HMGB1 protein. Amato J, Cerofolini L, Brancaccio D, Giuntini S, Iaccarino N, Zizza P, Iachettini S, Biroccio A, Novellino E, Rosato A, Fragai M, Luchinat C, Randazzo A, Pagano B. Nucleic Acids Res. 2019 Oct 10;4718:9950-9966. doi: 10.1093/nar/gkz727. IF 11.147
23. Association between CMV and Invasive Fungal Infections After Autologous Stem Cell Transplant in Lymphoproliferative Malignancies: Opportunistic Partnership or Cause-Effect Relationship?
24. Marchesi F, Pimpinelli F, Di Domenico EG, Renzi D, Gallo MT, Regazzo G, Rizzo MG, Gumenyuk S, Toma L, Marino M, Cordone I, Cantonetti M, Liberati AM, Montanaro M, Ceribelli A, Prignano G, Palombi F, Romano A, Papa E, Pisani F, Spadea A, Arcese W, Ensoli F, Mengarelli A. Int J Mol Sci. 2019 Mar 19;206. pii: E1373. doi: 10.3390/ijms20061373. PMID: 30893777
25. Transcriptional activation of the miR-17-92 cluster is involved in the growth-promoting effects of MYB in human Ph-positive leukemia cells. Spagnuolo M, Regazzo G, De Dominici M, Sacconi A, Pelosi A, Korita E, Marchesi F, Pisani F, Magenta A, Lulli V, Cordone I, Mengarelli A, Strano S, Blandino G, Rizzo

MG, Calabretta B. Haematologica. 2019 Jan;1041:82-92. doi: 10.3324/haematol.2018.191213. Epub 2018 Aug 3. PMID: 30076175

26. Signalling networks in cholangiocarcinoma: Molecular pathogenesis, targeted therapies and drug resistance. Fouassier L, Marzioni M, Afonso MB, Dooley S, Gaston K, Giannelli G, Rodrigues CMP, Lozano E, Mancarella S, Segatto O, Vaquero J, Marin JJG, Coulouarn C. Liver Int. 2019 May;39 Suppl 1:43-62. doi: 10.1111/liv.14102. Review.
27. Making sense of Cbp/p300 loss of function mutations in skin tumorigenesis. Anastasi S, Alemà S, Segatto O. J Pathol. 2019 Aug 9. doi: 10.1002/path.5336. [Epub ahead of print] PMID: 31397888
28. MKK3 sustains cell proliferation and survival through p38DELTA MAPK activation in colorectal cancer. Stramucci L, Pranteda A, Stravato A, Amoreo CA, Pennetti A, Diodoro MG, Bartolazzi A, Milella M, Bossi G. Cell Death Dis. 2019 Nov 6;1011:842. doi: 10.1038/s41419-019-2083-2.
29. Approaching the challenges of MKK3/p38delta MAPK targeting for therapeutic purpose in colorectal cancer. Stramucci L, Bossi G. J Exp Clin Cancer Res. 2019 Dec 27;381:504. doi: 10.1186/s13046-019-1513-4.
30. Poly-specific neoantigen-targeted cancer vaccines delay patient derived tumor growth. Aurisicchio L, Salvatori E, Lione L, Bandini S, Pallocca M, Maggio R, Fanciulli M, De Nicola F, Goeman F, Ciliberto G, Conforti A, Luberto L, Palombo F. J Exp Clin Cancer Res. 2019 Feb 14;381:78. doi: 10.1186/s13046-019-1084-4. PMID: 30764846

IMMUNOLOGY AND IMMUNOTHERAPY UNIT

Head: Dr. Paola Nisticò, MD

Staff

Francesca Di Modugno, PhD, Staff Scientist
Anna Maria Mileo, PhD, Staff Scientist
Stefania Miccadei, PhD, Staff Scientist
Aldo Venuti, MD, Staff Scientist
Luca Cardone, Project Leader
Antonella Sistigu, Project Leader
Gabriele Toietta, Project Leader
Silvia Baldari, Senior Scientist
Anna Di Carlo, Senior Scientist
Roberta Melchionna, Senior Scientist
Belinda Palermo, Senior Scientist
Francesca Paolini, Senior Scientist
Paola Trono, Senior Scientist
Annalisa Tocci, PhD Student
Carla Mottini, Post-doctoral fellow
Susanna Falcucci, Fellow
Fabio Mastrogiovanni, Fellow
Giulia Campo, Technician, Fellow
Giuliana Falasca, Technician
Mariangela Panetta, Technician
Maria Vincenza Sarcone, Administrative collaborator
Eleonora Barone, Student
Melo Alanne Rayssa Da Silva, Student
Dario Vinicio Guglietta, Student

Mission

This Unit is focused on understanding the immune response against tumor by studying the biological processes and signaling pathways involved in the complex interaction between tumor cells, extracellular matrix ECM, cancer associated fibroblasts CAFs and immune cells in the tumor microenvironment TME. Our aim is to provide the rationale for designing novel immunotherapeutic treatment to be used also in combination to overcome therapy resistance. The mission is: to develop and standardize methodologies of immune-monitoring; to establish preclinical models of patient-derived organotypic cultures of tumors; identify surrogate biological markers of clinical response, focusing on immune checkpoint inhibitor treatment; to identify novel targets related to the tumor microenvironment, suitable for developing CAR T cells able to infiltrate solid tumors also exploring oncolytic virus activity. In cooperation with the HPV Unit we participate in programs of cancer prevention on HPV vaccination for males and we are defining new formulations of DNA vaccines against HPV oncoproteins. Close cooperation with the clinical departments is a cornerstone of our Unit to define immune landscape in particular during radiotherapy and to design combined immunotherapeutic clinical trials.

Research and Clinical Activity

The Unit significantly contributes to Immunotherapy WG of Alleanza Contro il Cancro with Paola Nisticò as National coordinator of the WG. The research and clinical activity of this Unit is tracked through an integrated experimental and clinical work of different projects.

PI NISTICO': The group activity obtained results on the role that the isoforms of the actin regulator hMENA may have in shaping NSCLC microenvironment by regulating the dialogue among tumor, fibroblasts and immune cells. We have demonstrated that hMENA contributes to cancer progression not only by activating tumor cell-autonomous AXl ; PD-L1; Wnt/b-catenin; TGF β /SMAD but also pro-invasive CAF-related paracrine pathways. Prognostic value of hMENA splicing, ECM composition and immunoscore IS to identify predictive biomarkers of ICB response has been evaluated. We performed an in depth immune-monitoring in prostate cancer patients undergoing curative radiotherapy RT. We have evidenced a high increase of VISTA expression in both CD4 and CD8 T cells at the end of RT, clinically relevant to design combined radio/immunotherapeutic clinical trials.

PI DI MODUGNO: We have revealed that hMENA isoforms affect the localization of tertiary lymphoid structures TLS within the NSCLC tissues, by exerting their role in tumor cells and CAFs. In CAFs, hMENA also affects the expression of FN1 and of the FN1 receptor, $\beta 1$ integrin. Considering the role of $\beta 1$ integrin in the radiotherapy resistance, we have showed a more pronounced reduction of $\beta 1$ in irradiated-hMENA depleted CAFs. We have obtained CAF derived ECM and we are studying the influence of irradiation and hMENA isoform expression in the ECM architecture and pro-tumoral activity.

PI CARDONE: We have investigated key metabolic vulnerabilities supporting metastases in a model of metastatic Triple-negative breast cancer and highlighted the importance of lipid metabolism in metastatic cancer stem-like cells survival. To identify anticancer targets and opportunities for drug repurposing we have demonstrated Decitabine as novel potential therapeutic to treat a specific subpopulation of patients with pancreatic cancer.

PI MICCADEI: We have shown that low doses of natural polyphenols extracted from artichoke AEs, combined with sub-lethal doses of chemotherapeutic drugs inhibits cell proliferation through down-regulation of DNA flap endonuclease1 FEN1 expression, a crucial player in DNA repair processes. We are studying new generation-polyphenolic extracts from mycorrhizal plants which show enhanced antitumor properties when compared to those obtained from normal plants, suggesting this strategy as a novel promising field in oncology.

PI MILEO: We addressed the role played by cytoskeletal dynamics induced by HPV16E7 viral oncoprotein and its interactome network on cellular mechanotransduction processes. We have shown that HPV16E7 expression promotes dynamic remodeling of cytoskeletal F-actin with changes of the intracellular tensive forces. HPV16E7 expression and the associated EMT process modulates the YAP nucleus-cytoplasm shuttling promoting the cytoplasmic retention of phosho-YAP and indicates that HPV influences the tumor aggressiveness also by affecting the cytoskeletal machinery.

PI SISTIGU: We demonstrated that Type I IFNs IFNs-I favor CSCs populations during immunogenic chemotherapy. We revealed that IFN-CSCs show patterns of chromatin remodeling and phenotypical/functional heterogeneity often accompanied by invasiveness and poor immunogenicity. In breast cancer patients receiving anthracycline-based neoadjuvant chemotherapy, IFN-I signature positively correlates with CSC and immune evasion markers.

PI TOIETTA: We have optimized procedures to genetically modify human mesenchymal stromal cells to produce engineered extracellular vesicles, as delivery vehicles for therapeutic purposes. To identify in solid tumors TME- related targets for chimeric antigen receptor-modified T CAR-T, we are studying pathways related to poor T cell trafficking to the tumor site. We are evaluating whether oncolytic virotherapy may subvert the hostile immunosuppressive tumor microenvironment, promoting T cell trafficking and activation in solid tumors.

PI VENUTI: Exploring the role of HPV in non-genital cancers, we have evidenced a viral involvement in cutaneous keratoacanthoma and in middle ear carcinoma and we are studying the relationship between a rare immunodeficiency syndrome WHIM and the presence of multiple HPV- related lesions. We have further improved our mouse model of oral cancer AT-84 for CAR – T cell therapy in solid tumour. We have developed, in collaboration with ENEA, a platform for the production of therapeutic vaccines in tomato hairy root cultures and we have also selected new natural molecules Mollusk hemocyanins with adjuvating activity.

Publications

1. Baldari S, Di Rocco G, Heffern MC, Su TA, Chang CJ, Toietta G. Effects of copper chelation on BRAFV600E positive colon carcinoma cells. Cancers Basel. 2019 May 12;115. pii: E659, doi: 10.3390/cancers11050659. IF: 6.192

2. Baldari S, Di Rocco G, Magenta A, Picozza M, Toietta G. Extracellular Vesicles-Encapsulated MicroRNA-125b Produced in Genetically Modified Mesenchymal Stromal Cells Inhibits Hepatocellular Carcinoma Cell Proliferation. Cells. 2019 Dec 3;812. pii: E1560. doi: 10.3390/cells8121560. IF: 5.656
3. Bedognetti D, Ceccarelli M, Galluzzi L, Lu R, Palucka K, Samayoa J, Spranger S, Warren S, Wong KK, Ziv E, Chowell D, Coussens LM, De Carvalho DD, DeNardo DG, Galon J, Kaufman HL, Kirchhoff T, Lotze MT, Luke JJ, Minn AJ, Politi K, Shultz LD, Simon R, Thórsson V, Weidhaas JB, Ascierto ML, Ascierto PA, Barnes JM, Barsan V, Bommareddy PK, Bot A, Church SE, Ciliberto G, De Maria A, Draganov D, Ho WS, McGee HM, Monette A, Murphy JF, Nisticò P, Park W, Patel M, Quigley M, Radvanyi L, Raftopoulos H, Rudqvist NP, Snyder A, Sweis RF, Valpione S, Zappasodi R, Butterfield LH, Disis ML, Fox BA, Cesano A, Marincola FM; Society for Immunotherapy of Cancer SITC Cancer Immune Responsiveness Task Force and WorkingGroups. Toward a comprehensive view of cancer immune responsiveness: a synopsis from the SITC workshop. J Immunother Cancer. 2019 May 22;71:131, doi: 10.1186/s40425-019-0640-y IF: 8.676
4. Conforti C, Paolini F, Venuti A, Dianzani C, Zalaudek I. The detection rate of Human Papillomavirus HPV in well differentiated squamous cell carcinoma and keratoacanthoma: is there new evidence for a viral pathogenesis of keratoacanthoma? Br J Dermatol. 2019 Jun 7. doi: 10.1111/bjd.18212. IF: 6.714
5. Di Modugno F, Colosi C, Trono P, Antonacci G, Ruocco G, Nisticò P. 3D models in the new era of immune oncology: focus on T cells, CAF and ECM. J Exp Clin Cancer Res. 2019 Mar;381:117, doi: 10.1186/s13046-019-1086-2 IF: 5.646
6. Di Rocco G, Baldari S, Pani G, Toietta G. Stem cells under the influence of alcohol: effects of ethanol consumption on stem/progenitor cells. Cell Mol Life Sci. 2019 Jan;762:231-244, doi: 10.1186/s13287-018-0986-y. IF: 7.014
7. Dotta L, Notarangelo LD, Moratto D, Kumar R, Porta F, Soresina A, Lougaris V, Plebani A, Smith CIE, Norlin AC, Gòmez Raccio AC, Bubanska E, Bertolini P, Amendola G, Visentini M, Fiorilli M, Venuti A, Badolato R. Long term outcome of WHIM syndrome in 18 patients: high risk of lung disease and HPV-related malignancies. J Allergy Clin Immunol Pract. 2019 Feb; 2019 Jun;75:1568-1577, doi: 10.1016/j.jaip.2019.01.045 IF: 7.550
8. Krasniqi E, Barchiesi G, Pizzuti L, Mazzotta M, Venuti A, Maugeri-Sacca M, Sanguineti G, Massimiani G, Sergi D, Carpano S, Marchetti P, Tomao S, Gamucci T, De Maria R, Tomao F, Natoli C, Tinari N, Ciliberto G, Barba M, Vici P. Immunotherapy in HER2-Positive Breast Cancer: State of the Art and Future Perspectives. J.Hematol.Oncol. 2019 Oct 29;121:111, doi: 10.1186/s13045-019-0798-2 IF: 8.731
9. Magistri P, Battistelli C, Toietta G, Strippoli R, Sagnotta A, Forgione A, Di Benedetto F, Uccini S, Vittorioso P, D'Angelo F, Aurello P, Ramacciato G, Nigri G. In vivo Bioluminescence-Based Monitoring of Liver Metastases from Colorectal Cancer: An Experimental Model. J Microsc Ultrastruct. 2019 Jul-Sep;73:136-140, doi: 10.4103/JMAU.JMAU_51_18
10. Massa S, Paolini F, Marino C, Franconi R, Venuti A. Bioproduction of a therapeutic vaccine against human papillomavirus in tomato hairy root cultures. Front Plant Sci. 2019 Apr 11;10:452, doi: 10.3389/fpls.2019.00452 IF: 4.106
11. Matteoni S, Abbruzzese C, Matarrese P, De Luca G, Mileo AM, Miccadei S, Schenone S, Musumeci F, Haas TL, Sette G, Carapella CM, Amato R, Perrotti N, Signore M, Paggi MG. The kinase inhibitor SI113 induces autophagy and synergizes with quinacrine in hindering the growth of human glioblastoma multiforme cells. J Exp Clin Cancer Res. 2019 May 17;381:202, doi: 10.1186/s13046-019-1212-1 IF: 5.646
12. Mileo AM, Nisticò P, Miccadei S. Polyphenols: immunomodulatory and therapeutic implication in colorectal cancer. Front Immunol. 2019 Apr 11;10:729. IF: 4.716
13. Mora Román JJ, Del Campo M, Villar J, Paolini F, Curzio G, Venuti A, Jara L, Ferreira J, Murgas P, Lladser A, Manubens A, Becker MI. Immunotherapeutic Potential of Mollusk Hemocyanins in Combination with Human Vaccine Adjuvants in Murine Models of Oral Cancer. J Immunol Res. 2019 Jan;2019:7076942, doi: 10.1155/2019/7076942 IF: 3.404
14. Mottini C, Napolitano F, Li Z, Gao X, Cardone L. Computer-aided drug repurposing for cancer therapy: Approaches and opportunities to challenge anticancer targets. Semin Cancer Biol. 2019 Sep 25. pii: S1044-579X1930139-7, doi: 10.1016/j.semcancer.2019.09.023 IF: 9.658

15. Mottini C, Tomihara H, Carrella D, Lamolinara A, Iezzi M, Huang JK, Amoreo CA, Buglioni S, Manni I, Robinson FS, Minelli R, Kang Y, Fleming JB, Kim MP, Bristow CA, Trisciuoglio D, Iuliano A, Del Bufalo D, Di Bernardo D, Melisi D, Draetta GF, Ciliberto G, Carugo A, Cardone L. Predictive Signatures Inform the Effective Repurposing of Decitabine to Treat KRAS-Dependent Pancreatic Ductal Adenocarcinoma. Cancer Res. 2019 Nov 1;7921:5612-5625. doi: 10.1158/0008-5472.CAN-19-0187 IF: 8.378
16. Pallocca M, Angeli D, Palombo F, Sperati F, Milella M, Goeman F, De Nicola F, Fanciulli M, Nisticò P, Quintarelli C, Ciliberto G. Combinations of immuno-checkpoint inhibitors predictive biomarkers only marginally improve their individual accuracy. J Transl Med. 2019 Apr 23;171:131, doi: 10.1186/s12967-019-1865-8 IF: 4.098
17. Paolini F, Bonomo C, Terrenato I, Pennetti A, Covello R, Cristalli G, Venuti A. Beta human papillomaviruses in middle ear squamous cell carcinoma. Oral Oncol. 2019 Mar;90:134-135, doi: 10.1016/j.oraloncology.2019.01.004 IF: 3.730
18. Pizzuti L, Krasniqi E, Barchiesi G, Mazzotta M, Barba M, Amodio A, Massimiani G, Pelle F, Kayal R, Vizza E, Grassadonia A, Tomao S, Venuti A, Gamucci T, Marchetti P, Natoli C, Sanguineti G, Ciliberto G, Vici P. Eribulin in Triple Negative Metastatic Breast Cancer: Critic Interpretation of Current Evidence and Projection for Future Scenarios. J Cancer. 2019 Oct 12;1024:5903-5914, doi: 10.7150/jca.35109 IF: 3.182
19. Sarogni P, Palumbo O, Servadio A, Astigiano S, D'Alessio B, Gatti V, Cukrov D, Baldari S, Pallotta MM, Aretini P, Dell'Orletta F, Soddu S, Carella M, Toietta G, Barbieri O, Fontanini G, Musio A. Overexpression of the cohesin-core subunit SMC1A contributes to colorectal cancer development. J Exp Clin Cancer Res. 2019 Mar;381:108. doi: 10.1186/s13046-019-1116-0 IF: 5.646
20. Trivisonno A, Alexander RW, Baldari S, Cohen SR, Di Rocco G, Gentile P, Magalon G, Magalon J, Miller RB, Womack H, Toietta G. Intraoperative Strategies for Minimal Manipulation of Autologous Adipose Tissue for Cell- and Tissue-Based Therapies: Concise Review. Stem Cells Transl Med. 2019 Dec;812:1265-1271, doi: 10.1002/sctm.19-0166 IF: 5.962
21. Trivisonno A, Cohen SR, Magalon G, Magalon J, Sterodimas A, Pascali M, Cervelli V, Toietta G, Colaprietra A, Calcagni F, Orlandi A, Scioli MG, Gentile P. Fluid Cartilage as New Autologous Biomaterial in the Treatment of Minor Nose Defects: Clinical and Microscopic Difference Amongst Diced, Crushed, and Fluid Cartilage. Materials Basel. 2019 Mar;127. pii: E1062. doi: 10.3390/ma12071062 IF: 2.467
22. Venuti A. Review of DNA tumour viruses. Hum Vaccin Immunother. 2019;155:1133-1134. doi: 10.1080/21645515.2019.1577677 IF: 2.592
23. Vitale I, Sistigu A, Manic G, Rudqvist NP, Trajanoski Z, Galluzzi L. Mutational and antigenic landscape in tumor progression and cancer immunotherapy.Trends Cell Biol. 2019 May;295:396-416, doi: 10.1016/j.tcb.2019.01.003. IF: 16.588

PRECLINICAL MODELS AND NEW THERAPEUTIC AGENTS UNIT

Head: Dr. Anna Bagnato PhD

Staff

Valeriana Di Castro, PhD, Staff Scientist
Donatella Del Bufalo, PhD, Staff Scientist
Rossella Galati, PhD, Staff Scientist
Laura Rosanò, PhD, Project leader
Daniela Trisciuoglio, PhD, Project leader
Roberta Cianfrocca, PhD, Researcher
Rosanna Sestito, PhD, Researcher
Piera Tocci, PhD, Researcher
Lidia Chellini, PhD, Researcher
Simona D'Aguanno, PhD, Researcher
Marta Di Martile, PhD, Researcher
Luigi Fattore, PhD, Researcher
Elisabetta Valentini, PhD, FIRC Fellow
Maria Grazia Tupone, PhD, FIRC Fellow
Ilenia Masi, PhD, IFO Fellow
Valeria Pecci, PhD, Researcher
Anna Maria Lucianò, PhD, Researcher
Antonio Candiloro, Head Staff Technician
Aldo Lupo, Staff Technician
Valentina Caprara, Technician
Barbara Nuvoli, Technician
Andrea Cerri, Technician
Maria Vincenza Sarcone, Administrative collaborator
Adele Petricca, Administrative collaborator
Federica Di Timoteo, Student
Federica Badoni, Student
Marco Rosichini, Student

Mission

The aim of this Unit is to identify novel treatments and evaluate the efficacy and mechanisms of new compounds in pre-clinical models, including patient-derived xenografts, and organoid/tumoroid technology ovarian, lung, colon cancer, melanoma, mesothelioma, to prepare for their translation to the clinic. In these models we investigate the critical pathways i.e. endothelin-1, estrogen, or bcl2/bcl-xL signaling that regulate the complex interactions between stromal and cancer cells controlling metastatic dissemination and drug response. Therefore, understanding the regulation of these bi-directional interactions can provide insight into the pathway networks that might be targeted therapeutically. The Interactions between cancer cells and the microenvironmental elements are investigated in vitro using novel organotypic 3D cultures with multiple primary human normal stromal and cancer-associated cells organoids/tumoroids. The patient-derived preclinical models can be exploited to provide personalized treatment to patients drug screening, combinatorial regimen optimization. Furthermore, results obtained in these cancer models can provide a deep understanding of the escape pathways to cancer therapy, thereby helping to define strategies to overcome drug resistance.

Research and Clinical Activity

The common goal of this Unit is to transfer knowledge from the laboratory to the clinical arena exploring in preclinical models the host interactions and networks driving the malignant and resistant phenotype, and how this information can be exploited to identify new vulnerabilities and to develop targeted therapies that disrupt critical nodes for the benefit of a much broader patient population.

The activity of the Unit concerns patient centred research, learning from every patient the complexity of disease biology:

PI A. Bagnato

We discovered key nodes driven by endothelin-1 receptor ET-1R/β-arrestin-1 β-arr1 pathway that impinge on YAP/TAZ and are viable therapeutic targets. In particular, we described the role of the ET-1R/β-arr1/YAP axis in regulating mutant p53-mediated transcriptional networks. More recently, we demonstrated that ET-1R/β-arr1 enhances YAP/TAZ transcriptional activity, acting as a therapeutic escape pathway of platinum-resistant ovarian cancer OC cells. In a search for drivers responsible for cell plasticity and metastatic

progression, we described a critical tumor suppressor role of the miR-200b/c in OC by regulating the ETAR pathway. Moreover, we demonstrated that the miR-200b/c–ETAR axis is modulated by ZEB1 through a reciprocal network that integrates ET-1/ETAR and ZEB1 axes with the miR-200b/c regulatory circuit to promote the acquisition of aggressive traits and foster progression to metastasis. Therefore, targeting ET-1R activities may disclose unexplored opportunities for OC therapy. To design and identify more effective drug combinations, we analyzed dual ET-1R antagonists, approved for non-oncological indication, indicating the drug repositioning of ET-1R antagonists, as macitentan, to improve the current treatments for OC. Emerging evidence indicates that stromal cells contribute to the acquisition of a resistant phenotype. To address this aspect, our unit is employing complementary strategies based on patient-derived models to identify the mechanisms underlying the therapeutic resistance onset, and develop targeted therapies that hit tumor-microenvironment interactions.

PI L. Rosanò

By understanding the early steps of OC metastasis in which tumor cells are carried by peritoneal fluid and attach to metastatic sites, as the peritoneum and omentum, we characterized the tumor-stroma interactions in OC, including the communications between fibroblasts, mesothelial cells, and OC cells. This study led us to identify the ET-1R/- β -arr1/ILK axis as a bridge of signals driving the invasive protrusions, named invadopodia, and metastatic spread. These findings are expected to provide the scientific rationale for the design of innovative OC therapeutic strategies.

PI D. Del Bufalo

By using melanoma preclinical models, we explored the biological and functional role of miR-378a-5p. The salient finding of the present study is the demonstration that miR-378a-5p acts as a positive regulator of melanoma progression-associated properties. In particular, we showed that the oncogenic activity of miR-378a-5p in melanoma functions includes two regulatory events: an increase of cell invasion, migration and vasculogenic mimicry through HOXD10/uPAR axis, and an increase of in vitro and in vivo angiogenesis through VEGF. The experimental evidences are supported by an analysis of melanoma clinical samples in which miR-378a5p expression was higher in metastatic melanoma than in primary tumors. Finally, genetic and pharmacologic modulation of Bcl-2 evidenced the Bcl-2 ability to regulate miR-378a-5p expression, indicating that Bcl-2 could affect melanoma progression through miRNA regulation.

PI Galati

The aim of the study is to investigate the new combination with current anticancer therapies to improve their effectiveness in the treatment of different tumors, including malignant mesothelioma. Based on previous observations that the nutraceutical CELLFOOD™ CF, the 'physiological modulator' that aimed to make oxygen available 'on demand', inhibits the growth of cancer cells, we investigated the role of CF in the regulation of hypoxia-inducible factor 1 alpha HIF1 α and its correlated proteins, phosphoglycerate kinase 1 and VEGF. Results from preclinical trials indicate that CF, acting on HIF1 α increases the fraction of oxygenated cells, making the radiotherapy and chemotherapy more effective with a greater production of reactive oxygen species ROS that, in turn, reduce the HIF1 α expression.

Publications

1. Bagnato A, Rosanò L. New routes in GPCR/ β -arrestin-driven signaling in cancer progression and metastasis. Front Pharmacol. 2019 Feb 19;10:114, doi: 10.3389/fphar.2019.00114 IF: 3.845
2. Russignan A, Spina C, Tamassia N, Cassaro A, Rigo A, Bagnato A, Rosanò L, Bonalumi A, Gottardi M, Zanatta L, Giacomazzi A, Scupoli MT, Tinelli M, Salvadori U, Mosna F, Zamò A, Cassatella MA, Vinante F, Tecchio C. New evidence on the role of endothelin-1 axis as a potential therapeutic target in multiple myeloma. Br J Haematol. 2019 Mar;184:1052-1055, doi: 10.1111/bjh.15240 IF: 5.128

3. Rosanò L, Cianfrocca R, Bagnato A. Methods to investigate β-arrestin-1/β-catenin signaling in ovarian cancer cells. Methods Mol Biol. 2019 Mar;1957:393-406, doi: 10.1007/978-1-4939-9158-7_25 IF: 1,29
4. Rosanò L, Bagnato A. New insights into the regulation of the actin cytoskeleton dynamics by GPCR/β-arrestin in cancer invasion and metastasis. Int. Rev. Cell Mol. Bio. 2019 Apr 13;346:129-155, doi.org/10.1016/bs.ircmb.2019.03.00 IF: 3.788
5. Traversi G, Staid DS, Fiore M, Percario Z, Trisciuoglio D, Antonioletti R, Morea V, Degrassi F, Cozzi R. A novel resveratrol derivative induces mitotic arrest, centrosome fragmentation and cancer cell death by inhibiting γ-tubulin. Cell Div. 2019 Apr 10;14:3. doi: 10.1186/s13008-019-0046-8 IF: 4.056
6. Chellini L, Caprara V, Spadaro F, Sestito R, Bagnato A, Rosano L. Regulation of extracellular matrix degradation and metastatic spread by IQGAP1 through Endothelin-1 receptor signalling in ovarian cancer. Matrix Biol. 2019 Aug; 81: 17a IF:6.986. IF: 6.986
7. Tocci P, Cianfrocca R, Di Castro V, Rosanò L, Sacconi A, Donzelli S, Bonfiglio S, Bucci G, Vizza E, Ferrandina G, Scambia G, Tonon G, Blandino G, Bagnato A. β-arrestin1/YAP/mutant p53 complexes orchestrate the endothelin A receptor signaling in high-grade serous ovarian cancer. Nat Commun. 2019 Jul 19;101:3196. doi: 10.1038/s41467-019-11045-8 IF: 11.878
8. Tocci P, Rosanò L, Bagnato A. Targeting endothelin-1 receptor/β-arrestin-1 axis in ovarian cancer: from basic research to a therapeutic approach. Front Endocrinol Lausanne. 2019 Sep 4;10:609. doi: 10.3389/fendo.2019.00609 IF: 3.364
9. Nuvoli B, Amadio B, Cortese G, Benedetti S, Antoniani B, Soriani A, Carosi M, Strigari L, Galati R. The effect of CELLFOOD ™ on radiotherapy or combined chemoradiotheraphy: preclinical evidence. Ther Adv Med. Oncol. 2019 Oct 13;11, doi: 10.1177/1758835919878347 IF: 5.670
10. Ruggiero CF, Malpicci D, Fattore L, Madonna G, Vanella V, Mallardo D, Liguoro D, Salvati V, Capone M, Bedogni B, Ascierto PA, Mancini R, Ciliberto G. ErbB3 phosphorylation as central event in adaptive resistance to targeted therapy in metastatic melanoma: early detection in CTCs during therapy and insights into regulation by autocrine neuregulin. Cancers Basel. 2019 Sep 25;1110. pii: E1425. doi: 10.3390/cancers11101425. IF: 6,162
11. Fattore L, Ruggiero CF, Pisanu ME, Liguoro D, Cerri A, Costantini S, Capone F, Acunzo M, Romano G, Nigita G, Mallardo D, Ragone C, Carriero MV, Budillon A, Botti G, Ascierto PA, Mancini R, Ciliberto G. Reprogramming miRNAs global expression orchestrates development of drug resistance in BRAF mutated melanoma. Cell Death Differ. 2019 Jul;267:1267-1282. doi: 10.1038/s41418-018-0205-5. IF: 8,086
12. Mottini C, Tomihara H, Carrella D, Lamolinara A, Iezzi M, Huang JK, Amoreo CA, Buglioni S, Manni I, Robinson FS, Minelli R, Kang Y, Fleming JB, Kim MP, Bristow CA, Trisciuoglio D, Iuliano A, Del Bufalo D, di Bernardo D, Melisi D, Draetta GF, Ciliberto G, Carugo A, Cardone L. Predictive signatures inform the effective repurposing of Decitabine to treat K-RAS-dependent pancreatic ductal adenocarcinoma. Cancer Res. 2019 Nov 1;7921:5612-5625. doi: 10.1158/0008-5472.CAN-19-0187. IF: 8.378
13. De Vitis C, Corleone G, Salvati V, Ascenzi F, Pallocca M, De Nicola F, Fanciulli M, di Martino S, Bruschini S, Napoli C, Ricci A, Bassi M, Venuta F, Rendina EA, Ciliberto G, Mancini R. B4GALT1 is a new candidate to maintain the stemness of lung cancer stem cells. J Clin Med. 2019 Nov 9;811. pii: E1928. doi:10.3390/jcm8111928. IF: 5.688
14. Bruschini S, di Martino S, Pisanu ME, Fattore L, De Vitis C, Laquintana V, Buglioni S, Tabbì E, Cerri A, Visca P, Alessandrini G, Facciolo F, Napoli C, Trombetta M, Santoro A, Crescenzi A, Ciliberto G, Mancini R. CytoMatrix for a reliable and simple characterization of lung cancer stem cells from malignant pleural effusions. J Cell Physiol. 2020 Mar;2353:1877-1887. doi:10.1002/jcp.29121. IF: 4.522
15. Fattore L, Ruggiero CF, Liguoro D, Mancini R, Ciliberto G. Single cell analysis to dissect molecular heterogeneity and disease evolution in metastatic melanoma. Cell Death Dis. 2019 Oct 31;1011:827. doi: 10.1038/s41419-019-2048-5. IF: 5.959

CELLULAR NETWORKS AND MOLECULAR THERAPEUTIC TARGETS UNIT

Head: Dr. Silvia Soddu, MD, PhD

Staff

Rita Falcioni, PhD, staff scientist
Marco Giorgio Paggi, MD, staff scientist
Alessandra Verdina, PhD, staff scientist
Gabriella D'Orazi, MD, PhD, project leader
Giulia Bon, PhD, project leader
Giuliana Di Rocco, PhD, project leader
Maria Pia Gentileschi, technician,
Claudia Abbruzzese, PhD, post-doc
Giulia Federici, PhD, post-doc
Alessia Garufi, PhD, post-doc
Rossella Loria, PhD, post-doc
Silvia Matteoni, PhD, post-doc,
Micol Di Segni, PhD student
Ilaria Virdia, PhD student
Michele Persico, MD student
Marta Mollari, undergraduate student

Mission

Cellular networks and new therapeutic targets are key areas of innovation in the field of cancer therapy. The potential targeted pathways for personalized cancer therapies consist in oncogenic signals and in the events generated by biochemical and/or genetic alterations that characterize cancer cells. Our mission is to develop and to sustain sound expertise in these areas to understand the hierarchy of therapeutic targets and the molecular mechanisms underpinning the pharmacological action of innovative therapies. This Unit has a dual function. On one hand, it aids researchers and clinicians to plan preclinical and clinical research activities, as well as to conduct, stimulate and support research programs integrated into innovative investigator-driven clinical trials. On the other hand, it assists other researchers who aim to discover and plan the development of novel biomarkers and therapeutic agents.

Clinical Activity

The Unit Cellular Networks and Molecular Therapeutic Targets contributes to the clinical research activity of the Regina Elena National Cancer Institute on the following projects:

Working Groups of "Alleanza Contro il Cancro" ACC. Dr Falcioni and Dr. Paggi are the Institutional Representatives for IRE of the Sarcoma and Glioblastoma Working Groups, respectively. Dr. Falcioni contributes to set up a shared NGS platform among different laboratories for the identification of sarcoma fusion transcripts, confirming the sensitivity of anchored-based NGS profiling approaches.

Drug resistance in solid tumors. In collaboration with the Oncology 2 Unit, Dr. Falcioni contributes to the characterization of drug resistance to second line therapy with T-DM1 after trastuzumab/pertuzumab adjuvant therapy in Advanced Breast Cancer HER-positive. In

collaboration with the Oncology 1 Unit, the same group contributes to the characterization of drug resistance to Dabrafeb/Pertuzumab in BRAF human melanoma.

Repurposing of chlorpromazine CPZ in the treatment of glioblastoma GB: In collaboration with the Neuroncology Unit, Dr. Paggi contributes to a Phase II clinical trial. CPZ is an antipsychotic drug which has been employed for over six decades. Recent reports and our own studies ascribe to CPZ the ability to strongly hinder GB cell growth in preclinical settings. The clinical trial involves the combination of CPZ with temozolomide standard treatment in the first line protocol.

Classification of variants of unknown significance VUS of the ATM gene. NGS has generated detailed catalogues of genetic variation in driver and actionable genes but our ability to predict the phenotypic consequences of each genetic variant remains poor, limiting the medical impact of sequence information. This problem is highlighted by the large numbers of variants of uncertain significance VUS identified. We combine the use of genome editing with an ATM-specific functional test i.e., the p53-MCL test developed for ATM pathogenic variants to exploit the functional consequences of ATM VUS in hereditary breast cancer.

Research Activity

The research objectives of the Unit "Cellular Networks and Molecular Therapeutic Targets" are pursued through the integrated experimental work of the following groups:

Falcioni's group actively contributes to the identification of the molecular mechanisms responsible for the resistance to therapy with T-DM1 in Breast Cancer and Dabrafenib in BRAF-mutant melanoma and to the identification of novel therapeutic targets in both tumors. In the first case, this group discovered that adjuvant therapy with combo trastumab/pertuzumab induces translocation of HER2 to the nucleus, making this receptor no longer available for T-DM1 administrated in second line treatment. In the second case, the group found that Semaphorine6A, strongly expressed in BRAF-mutated melanoma, is a crucial mediator of tumor/stroma interactions involved in the resistance to MAPK inhibition.

Paggi's group actively contributes to drug repurposing in the treatment of GB multiforme. Intelligent and rational drug repurposing or repositioning are possible strategies to develop new therapies implicating lower risks, shorter timelines to bedside and lower costs. To this end, we employ cell biology and proteomic approaches to analyze pharmacodynamic characteristics of old drugs amenable of repositioning in the therapy of GB multiforme. In addition, this group was proficient in attributing to the kinase inhibitor SI113 the correct mechanism of action in inhibiting the PI3K/mTOR pathway and epithelial-to-mesenchymal transition, as well as in stimulating autophagy.

D'Orazi's group is actively investigating the mechanisms of induced chemoresistance, in particular in solid cancers such as GB, breast, colon, and pancreatic cancers and with respect of the HIPK2-p53 pathway. Particular attention has been dedicated to 1 the contribution of hyperglycemia in inhibiting the HIPK2-p53 axis;2 the reactivation of the HIPK2-p53 axis by natural compounds; 3 the manipulation of autophagy to improve anticancer therapies; 4 targeting of mutant p53 to reduce its oncogenic potential.

Soddu's group is actively pursuing the molecular characterization of mitosis and cytokinesis functions of proteins, such as p53, HIPK2, and histone H2B, usually involved in the DNA damage response. Particular attention has been dedicated to 1 the contribution of centrosomal p53 in the mitotic surveillance pathway; 2 the role of extrachromosomal histone H2B in the definition of the abscission site at the intercellular bridge connecting sibling cells; 3 the identification and characterization of a new HIPK2 isoform with a cytokinesis-specific function.

Publications

1. Loria R, Giliberti C, Bedini A, Palomba R, Caracciolo G, Ceci P, Falvo E, Marconi R, Falcioni R, Bossi G, Strigari L. Very low intensity ultrasounds as a new strategy to improve selective delivery of nanoparticles-complexes in cancer cells. J Exp Clin Cancer Res. 2019 Jan 3;381:1. IF: 5.646

2. Santarelli R, Carillo V, Romeo MA, Gaeta A, Nazzari C, Gonnella R, Granato M, D'Orazi G, Faggioni A, Cirone M. STAT3 phosphorylation affects p53/p21 axis and KSHV lytic cycle activation. Virology 2019 Feb;528:137-143. IF: 2.657
3. Sarogni P, Palumbo O, Servadio A, Astigiano S, D'Alessio B, Gatti V, Cukrov D, Baldari S, Pallotta MM, Aretini P, Dell'Orletta F, Soddu S, Carella M, Toietta G, Barbieri O, Fontanini G, Musio A. Overexpression of the cohesin-core subunit SMC1A contributes to colorectal cancer development. J Exp Clin Cancer Res. 2019 Mar 1;381:108. IF: 5.646
4. Vizza E, Mancini E, Laquintana V, Loria R, Carosi M, Baiocco E, Cicchillitti L, Piaggio G, Patrizi L, Sperduti I, Zampa A, Cutillo G, Falcioni R, Corrado G. The prognostic significance of positive peritoneal cytology in endometrial cancer and its correlations with L1-CAM biomarker. Surg Oncol. 2019 Mar;28:151-157. IF: 3.000
5. Petti E, Buemi V, Zappone A, Schillaci O, Broccia PV, Dinami R, Matteoni S, Benetti R, Schoeftner S SFPQ and NONO suppress RNA:DNA-hybrid-related telomere instability. Nat Commun. 2019 Mar 1;101:1001. IF: 11.878
6. Willan J, Cleasby AJ, Flores-Rodriguez N, Stefani F, Rinaldo C, Pisciottani A, Grant E, Woodman P, Bryant HE, Ciani B. ESCRT-III is necessary for the integrity of the nuclear envelope in micronuclei but is aberrant at ruptured micronuclear envelopes generating damage. Oncogenesis. 2019 Apr 15;85:29. IF: 5.995
7. Matteoni S, Abbruzzese C, Matarrese P, De Luca G, Mileo AM, Miccadei S, Schenone S, Musumeci F, Haas TL, Sette G, Carapella CM, Amato R, Perrotti N, Signore M, Paggi MG. The kinase inhibitor SI113 induces autophagy and synergizes with quinacrine in hindering the growth of human glioblastoma multiforme cells. J Exp Clin Cancer Res. 2019 May 17;381:202. IF: 5.646
8. Abbruzzese C, Matteoni S, Persico M, Ascione B, Schenone S, Musumeci F, Amato R, Perrotti N, Matarrese P, Paggi MG. The small molecule SI113 hinders epithelial-to-mesenchymal transition and subverts cytoskeletal organization in human cancer cells. J Cell Physiol. 2019 May 16. IF: 4.522
9. D'Orazi G, Cirone M. Mutant p53 and Cellular Stress Pathways: A Criminal Alliance That Promotes Cancer Progression. Cancers Basel. 2019 May 2;115. pii: E614. IF: 6.162
10. Baldari S, Di Rocco G, Heffern MC, Su TA, Chang CJ, Toietta G. Effects of Copper Chelation on BRAFV600E Positive Colon Carcinoma Cells. Cancers Basel. 2019 May 12;115. pii: E659. IF: 6.162
11. Gilardini Montani MS, Cecere N, Granato M, Romeo MA, Falcinelli L, Ciciarelli U, D'Orazi G, Faggioni A, Cirone M. Mutant p53, Stabilized by Its Interplay with HSP90, Activates a Positive Feed-Back Loop Between NRF2 and p62 that Induces Chemo-Resistance to Apigenin in Pancreatic Cancer Cells. Cancers Basel. 2019 May 22;115. pii: E703. IF:6.162
12. Cirone M, Gilardini Montani MS, Granato M, Garufi A, Faggioni A, D'Orazi G. Autophagy manipulation as a strategy for efficient anticancer therapies: possible consequences. J Exp Clin Cancer Res. 2019 Jun 14;381:262. IF: 5.646
13. Pisciottani A, Biancolillo L, Ferrara M, Valente D, Sardina F, Monteonofrio L, Camerini S, Crescenzi M, Soddu S, Rinaldo C. HIPK2 Phosphorylates the Microtubule-Severing Enzyme Spastin at S268 for Abscission. Cells. 2019 Jul 5;87. pii: E684. IF 5.656
14. Di Agostino S, Fontemaggi G, Strano S, Blandino G, D'Orazi G. Targeting mutant p53 in cancer: the latest insights. J Exp Clin Cancer Res. 2019 Jul 5;381:290. IF: 5.646
15. Garufi A, Traversi G, Gilardini Montani MS, D'Orazi V, Pistritto G, Cirone M, D'Orazi G. Reduced chemotherapeutic sensitivity in high glucose condition: implication of antioxidant response. Oncotarget. 2019 Jul 23;1045:4691-4702. IF: n.a.
16. Bacci L, Aiello A, Ripoli C, Loria R, Pugliese D, Pierconti F, Rotili D, Strigari L, Pinto F, Bassi PF, Mai A, Grassi C, Pontecorvi A, Falcioni R, Farsetti A, Nanni S. H19-Dependent Transcriptional Regulation of β3 and β4 Integrins Upon Estrogen and Hypoxia Favors Metastatic Potential in Prostate Cancer. Int J Mol Sci. 2019 Aug 17;2016. pii: E4012. IF: 4.183
17. Contadini C, Monteonofrio L, Virdia I, Prodosmo A, Valente D, Chessa L, Musio A, Fava LL, Rinaldo C, Di Rocco G, Soddu S. p53 mitotic centrosome localization preserves centrosome integrity and works as sensor for the mitotic surveillance pathway. Cell Death Dis. 2019 Nov 7;1011:850. IF 5.959

18. Monteonofrio L, Valente D, Rinaldo C, Soddu S. Extrachromosomal Histone H2B Contributes to the Formation of the Abscission Site for Cell Division. Cells. 2019 Nov 5;811. pii: E1391. IF 5.656
19. Federici G, Varricchio L, Martelli F, Falchi M, Picconi O, Francescangeli F, Contavalli P, Girelli G, Tafuri A, Petricoin EF 3rd, Mazzarini M, Zeuner A, Migliaccio AR. Phosphoproteomic Landscaping Identifies Non-canonical cKIT Signaling in Polycythemia Vera Erythroid Progenitors. Front Oncol. 2019 Nov 22;9:1245. IF 4.137
20. Baldari S, Di Rocco G, Magenta A, Picozza M, Toietta G. Extracellular Vesicles-Encapsulated MicroRNA-125b Produced in Genetically Modified Mesenchymal Stromal Cells Inhibits Hepatocellular Carcinoma Cell Proliferation. Cells. 2019 Dec 3;812. pii: E1560. IF 5.656
21. Trivisonno A, Alexander RW, Baldari S, Cohen SR, Di Rocco G, Gentile P, Magalon G, Magalon J, Miller RB, Womack H, Toietta G. Intraoperative Strategies for Minimal Manipulation of Autologous Adipose Tissue for Cell- and Tissue-Based Therapies: Concise Review. Stem Cells Transl Med. 2019 Dec;812:1265-1271. IF 5.962
22. Garufi A, Traversi G, Cirone M, D'Orazi G. HIPK2 role in the tumor-host interaction: Impact on fibroblasts transdifferentiation CAF-like. IUBMB Life. 2019 Dec;7112:2055-2061. IF 3.051
23. Castelli M, Piobbico D, Chiacchiaretta M, Brunacci C, Pieroni S, Bartoli D, Gargaro M, Fallarino F, Puccetti P, Soddu S, Della-Fazia MA, Servillo G. HOPS/TMUB1 retains p53 in the cytoplasm and sustains p53-dependent mitochondrial apoptosis. EMBO Rep. 2019 Dec 23:e48073. IF 8.383

SAFU UNIT

Head: Dr. Maurizio Fanciulli, PhD

Staff

Federico De Marco, MD PhD, Staff Scientist
Carlo Leonetti, PhD, Staff Scientist
Giulia Piaggio, PhD, Staff Scientist
Giancarlo Cortese, Staff Technician
Tiziana Bruno, Staff Technician
Enrico Spugnini, Veterinary
Sabrina Strano, Principal Investigator
Aymone Gurtner, Principal Investigator
Francesca De Nicola, Senior Scientist
Frauke Goeman, Senior Scientist
Ludovica Ciuffreda, Senior Scientist
Simona Iezzi, Senior Scientist
Isabella Manni, Senior Scientist
Valeria Catena, Post-Doc
Matteo Pallocca, Post-Doc
Lorenzo D'Ambrosio, Post-Doc
Stefano Scalera, Post-Doc
Giacomo Corleone, Post-Doc
Cristina Sorino, Post-Doc
Manuela Porru, Post-Doc
Serena De Vito, Post-Doc
Bruno Amadio, Technician
Adele Petricca, Administrative collaborator

Mission

The mission of the SAFU UOSD focuses on the establishment of innovative mouse models of human cancer including implantation of tumor specimens into immunocompromised mice at the heterotopic and orthotopic sites and genetically engineered mouse models. All mouse models are devoted to study cancer initiation, immune system roles, tumor angiogenesis, environmental carcinogenesis, invasion as well as response to novel anticancer strategy. Currently, several models are being designed to allow in vivo imaging of tumor development from earlier stages and to follow tumor response to therapeutics. Besides to the research activities, this UOSD has the responsibility for day-to-day management of the Institute animal house. In agreement, this structure coordinates the activity of Animal Welfare Body (D.Lgs. n.26/2014), evaluating scientific projects in which are involved animal experimentations.

Research and Clinical Activity

Despite many antineoplastic compounds showed favorable tumor responses in preclinical studies, more than 95% of these therapeutics failed to confirm efficacy in clinical trials and many factors are responsible for this high failure rate, including the lack of predictive cancer models. In this context, to increase the robustness of drug discovery, Leonetti's group developed advanced preclinical models of breast, colon and ovarian

cancer. In particular, tumor organoids, patient-derived organoids xenografts (PDOX) and orthotopic implant, are now used to discovery new and more effective anticancer therapies

Originally identified as an RNA polymerase II binding protein interactor, Che-1/AATF (Che-1) has been recognized as a multifunctional protein involved in cell cycle regulation and cancer progression, as well as apoptosis inhibition and cellular response to stress. This protein displays a peculiar nucleolar localization and it has recently been implicated in pre-rRNA processing and ribosome biogenesis. During this year, Dr. Fanciulli's group identified a novel function of Che-1 in the regulation of ribosomal RNA (rRNA) synthesis in both cancer and normal cells. This group demonstrated that Che-1 interacts with RNA polymerase I (RNA pol I) and nucleolar factor UBF, promoting RNA pol I-dependent transcription. Furthermore, this protein binds to the rRNA gene (rDNA) promoter and modulates its epigenetic state by contrasting the recruitment of histone deacetylas HDAC1. Che-1 downregulation affects RNA pol I and impairs UBF recruitment on rDNA and leads to reducing rDNA promoter activity and47S pre-rRNA production. Moreover, Che-1 depletion induces abnormal nucleolar morphology associated with re-distribution of all major nucleolar proteins. In response to DNA damage Che-1 re-localizes from rDNA to TP53 gene promoter to induce cell cycle arrest. This previously uncharacterized function of Che-1 confirms the important role of this protein in the regulation of ribosome biogenesis, cellular proliferation and response to stress.

Multiple myeloma (MM) is the second most frequent and largely uncurable hematologic malignancy worldwide. This disease is associated with a poor prognosis, and a marked incidence rate increase is expected in the next 20 years. The Dr. Fanciulli's group in collaboration with the Hematological Unit of the Institute collected and profiled the epigenome of 25 MM patients, a murine MM model and MM cell lines using paired-end ATAC-seq. A preliminary analysis has been conducted and assessed the profiles of 25 MM patient data of which 17 untreated, five treated with the onset of recurrence and three healthy bone marrow controls. This assessment validated the high level of heterogeneity, especially in the cases of recurrence. Power analysis strongly advocates the need of sample integration (~30 MM samples) to reach the saturation of information covering all the potential accessible sites in MM and thus to build the most complete atlas of DNA accessibility in MM to date.

Piaggio's group studies transcriptional and post-transcriptional mechanisms responsible for the aberrant proliferation associated with neoplastic transformation using in vitro and genetically modified animal models of breast and pancreatic cancer, developed by her, in which it is possible to follow the course of the disease through bioimaging. In these animal models we have identified a crosstalk between the systemic macroenvironment and the target tissue of neoplasia, before and during the development of the disease. The group is also characterizing in patient sera the amount of cfDNA, the degradation index of cfDNA and/or mitochondrial-derived cfDNA, as new non-invasive diagnostic and/or prognostic biomarkers. In this regard, the group actively collaborates with the Gynecology OOC for the analysis of these nucleic acids in the serum of patients with endometrial cancer

Through the proteomic analysis of preneoplastic and neoplastic skin lesions, it has been shown that the solar ultraviolet (UV) radiation, in addition to being a cancer-initiating agent, can act as a powerful cancer promoting agent inducing, in preneoplastic skin lesions, a distinct pattern of protein oxidative damage specifically focused on key cellular functions, namely: chaperoning and stress response; protein folding/refolding and protein quality control; proteasomal function; DNA damage repair; protein- and vesicle-trafficking; cell architecture, adhesion/extra-cellular matrix (ECM) interaction; proliferation/oncosuppression; apoptosis/survival. These alterations are conducive to the persistence of genetic alterations and to the establishment and progression of transformant clones. In fully neoplastic lesions a comparatively lower oxidative burden coupled with a severely perturbed DNA damage response are found. These alterations reflect an adaptive response to the sharply pro-oxidant neoplastic environment enabling an increased genomic instability and an accelerated rate of neoplastic evolution.

In the search for protective agents, the glucosamine derivative NAPA, inhibiting the MAP kinase ERK phosphorylation and the consequent IL-6 and IL-8 up-regulation, proved to attenuate, in vitro, the UV-

related collagen type I depletion of the skin Extracellular Matrix, a distinct trait of skin ageing and preneoplastic lesions. Thus, Napa represent a potentially new class of molecules to be exploited in the development of improved radiation-protective agents.

Growing evidence indicates that the deregulation of YAP/TAZ signalling pathway might play a role in mediating resistance to anticancer treatments. Currently, there are no drugs that directly target this pathway. A number of drugs indirectly inhibit YAP/TAZ by targeting upstream or downstream regulators of the Hippo pathway. The research activities of Dr. Strano group aim at the identification of natural and synthetic molecules that could dampen YAP/TAZ/TEAD oncogenic pathway and sensitize cancer cells to therapeutic treatments. In this context, Dr. Strano recently found that Filipendula vulgaris and Agave extracts degrade YAP and TAZ and promote cell death of mesothelioma and osteosarcoma cells, respectively.

Dr. Aymone Gurtner studies aim at identifying mutp53-dependent miRNAs and their target genes as useful prognostic and/or predictive biomarkers of response to therapy in patients with CRC. Since for many genes putatively regulated by mutp53 identified in these studies there are drugs approved by the FDA or undergoing clinical trials, these results open the way to identify "vulnerabilities" of mutp53 with studies on organoids derived from patients. In this context, Dr. Gurtner actively collaborates with the laboratory of Dr. Nicola Valeri at Sutton, one of the leading experts on patient-derived organoids (PDOs). Furthermore, his research interests are based on understanding the role of the transcriptional factor NF-Y and its associated protein complexes on transcriptional and post-transcriptional of miRNAs during epithelial mesenchymal transition of colon tumor cells

Publications

1. Angeli D, Fanciulli M, Pallocca M. Reverse Engineering Cancer: Inferring Transcriptional Gene Signatures from Copy Number Aberrations with ICAro. Cancers (Basel). 2019 Feb 22; 11(2): E256 [pii]a IF:6.162.
2. Aurisicchio L, Salvatori E, Lione L, Bandini S, Pallocca M, Maggio R, Fanciulli M, De Nicola F, Goeman F, Ciliberto G, Conforti A, Luberto L, Palombo F. Poly-Specific Neoantigen-Targeted Cancer Vaccines Delay Patient Derived Tumor Growth. J.Exp.Clin.Cancer Res. 2019 Feb 14; 38(1): 78a IF:5.646.
3. Bazzichetto C, Conciatori F, Falcone I, Cognetti F, Milella M, Ciuffreda L. Advances in Tumor-Stroma Interactions: Emerging Role of Cytokine Network in Colorectal and Pancreatic Cancer. J.Oncol. 2019 May 5; 2019: 5373580a IF:2.600.
4. Bazzichetto C, Conciatori F, Pallocca M, Falcone I, Fanciulli M, Cognetti F, Milella M, Ciuffreda L. PTEN as a Prognostic/Predictive Biomarker in Cancer: An Unfulfilled Promise? Cancers (Basel). 2019 Mar 28; 11(4): 10.3390/cancers11040435a IF:6.162.
5. Cassano T, Magini A, Giovagnoli S, Polchi A, Calcagnini S, Pace L, Lavecchia MA, Scuderi C, Bronzuoli MR, Ruggeri L, Gentileschi MP, Romano A, Gaetani S, De Marco F, Emiliani C, Dolcetta D. Early Intrathecal Infusion of Everolimus Restores Cognitive Function and Mood in a Murine Model of Alzheimer's Disease. Exp.Neurol. 2019 Jan; 311: 88a IF:4.562.
6. Cherfils-Vicini J, Iltis C, Cervera L, Pisano S, Croce O, Sadouni N, Gyorffy B, Collet R, Renault VM, Rey-Millet M, Leonetti C, Zizza P, Allain F, Ghiringhelli F, Soubeiran N, Shkreli M, Vivier E, Biroccio A, Gilson E. Cancer Cells Induce Immune Escape Via Glycocalyx Changes Controlled by the Telomeric Protein TRF2. Embo j. 2019 Jun; 38(11): e100012a IF:11.227.
7. Chiodoni C, Di Martino MT, Zazzeroni F, Caraglia M, Donadelli M, Meschini S, Leonetti C, Scotlandi K. Cell Communication and Signaling: How to Turn Bad Language into Positive One. J.Exp.Clin.Cancer Res. 2019 Mar 13; 38(1): 128a IF:5.646.
8. Cocchiola R, Rubini E, Altieri F, Chichiarelli S, Paglia G, Romaniello D, Carissimi S, Giorgi A, Giamogante F, Macone A, Perugia G, Gurtner A, Eufemi M. STAT3 Post-Translational Modifications

Drive Cellular Signaling Pathways in Prostate Cancer Cells. Int.J.Mol.Sci. 2019 Apr 12; 20(8): E1815 [pii]a IF:4.183.

9. Condello M, Pellegrini E, Spugnini EP, Baldi A, Amadio B, Vincenzi B, Occhionero G, Delfine S, Mastrodonato F, Meschini S. Anticancer Activity of "Trigno M", Extract of Prunus Spinosa Drupes, Against in Vitro 3D and in Vivo Colon Cancer Models. Biomed.Pharmacother. 2019 Oct; 118: 109281a IF:3.743.
10. De Vitis C, Corleone G, Salvati V, Ascenzi F, Pallocca M, De Nicola F, Fanciulli M, di Martino S, Bruschini S, Napoli C, Ricci A, Bassi M, Venuta F, Rendina EA, Ciliberto G, Mancini R. B4GALT1 is a New Candidate to Maintain the Stemness of Lung Cancer Stem Cells. Journal of Clinical Medicine. 2019 11/09; 8(11): 1928a IF:5.688.
11. Fattore L, Ruggiero CF, Pisanu ME, Liguoro D, Cerri A, Costantini S, Capone F, Acunzo M, Romano G, Nigita G, Mallardo D, Ragone C, Carriero MV, Budillon A, Botti G, Ascierto PA, Mancini R, Ciliberto G. Reprogramming miRNAs Global Expression Orchestrates Development of Drug Resistance in BRAF Mutated Melanoma. Cell Death Differ. 2019 Jul; 26(7): 1267a IF:8.086.
12. Goeman F, De Nicola F, Scalera S, Sperati F, Gallo E, Ciuffreda L, Pallocca M, Pizzuti L, Krasniqi E, Barchiesi G, Vici P, Barba M, Buglioni S, Casini B, Visca P, Pescarmona E, Mazzotta M, De Maria R, Fanciulli M, Ciliberto G, Maugeri-Sacca M. Mutations in the KEAP1-NFE2L2 Pathway Define a Molecular Subset of Rapidly Progressing Lung Adenocarcinoma. J.Thorac.Oncol. 2019 14(11): 1924a IF:12.460.
13. Grassi L, Alfonsi R, Francescangeli F, Signore M, De Angelis ML, Addario A, Costantini M, Flex E, Ciolfi A, Pizzi S, Bruselles A, Pallocca M, Simone G, Haoui M, Falchi M, Milella M, Sentinelli S, Di Matteo P, Stellacci E, Gallucci M, Muto G, Tartaglia M, De Maria R, Bonci D. Organoids as a New Model for Improving Regenerative Medicine and Cancer Personalized Therapy in Renal Diseases. Cell.Death Dis. 2019 Feb 27; 10(3): 201a IF:5.959.
14. Lamberti D, Cristinziano G, Porru M, Leonetti C, Egan JB, Shi CX, Buglioni S, Amoreo CA, Castellani L, Borad MJ, Alema S, Anastasi S, Segatto O. HSP90 Inhibition Drives Degradation of FGFR2 Fusion Proteins: Implications for Treatment of Cholangiocarcinoma. Hepatology. 2019 Jan; 69(1): 131-142.a IF:14.971.
15. Logozzi M, Spugnini E, Mizzoni D, Di Raimo R, Fais S. Extracellular Acidity and Increased Exosome Release as Key Phenotypes of Malignant Tumors. Cancer Metastasis Rev. 2019 Feb 4; a IF:6.667.
16. Luca R, di Blasio G, Gallo D, Monteleone V, Manni I, Fici L, Buttarelli M, Ciolli G, Pellegrino M, Teveroni E, Maiullari S, Ciucci A, Apollo A, Mancini F, Gentileschi MP, Zannoni GF, Pontecorvi A, Scambia G, Moretti F. Estrogens Counteract Platinum-Chemosensitivity by Modifying the Subcellular Localization of MDM4. Cancers (Basel). 2019 Sep 12; 11(9): E1349a IF:6.162.
17. Manni I, de Latouliere L, Gurtner A, Piaggio G. Transgenic Animal Models to Visualize Cancer-Related Cellular Processes by Bioluminescence Imaging. Front.Pharmacol. 2019 Mar 15; 10: 235a IF:3.845.
18. Marrocco I, Altieri F, Rubini E, Paglia G, Chichiarelli S, Giamogante F, Macone A, Perugia G, Magliocca FM, Gurtner A, Maras B, Ragno R, Patsilinakos A, Manganaro R, Eufemi M. Shmt2: A Stat3 Signaling New Player in Prostate Cancer Energy Metabolism. Cells. 2019 Sep 6; 8(9): E1048a IF:5.656.
19. Mottini C, Tomihara H, Carrella D, Lamolinara A, Iezzi M, Huang JK, Amoreo CA, Buglioni S, Manni I, Robinson FS, Minelli R, Kang Y, Fleming JB, Kim MP, Bristow CA, Trisciuoglio D, Iuliano A, Del Bufalo D, di Bernardo D, Melisi D, Draetta GF, Ciliberto G, Carugo A, Cardone L. Predictive Signatures Inform the Effective Repurposing of Decitabine to Treat K-RAS-Dependent Pancreatic Ductal Adenocarcinoma. Cancer Res. 2019 Sep 5; a IF:8.378.
20. Nuvoli B, Amadio B, Cortese G, Benedetti S, Antoniani B, Soriani A, Carosi M, Strigari L, Galati R. The Effect of CELLFOOD(TM) on Radiotherapy Or Combined Chemoradiotherapy: Preclinical Evidence. Ther.Adv.Med.Oncol. 2019 Oct 13; 11: 1758835919878347a IF:5.670.
21. Pallocca M, Angeli D, Palombo F, Sperati F, Milella M, Goeman F, De Nicola F, Fanciulli M, Nistico P, Quintarelli C, Ciliberto G. Combinations of Immuno-Checkpoint Inhibitors Predictive Biomarkers Only Marginally Improve their Individual Accuracy. J.Transl.Med. 2019 Apr 23; 17(1): 131a IF:4.098.

22. Pillai SR, Damaghi M, Marunaka Y, Spugnini EP, Fais S, Gillies RJ. Causes, Consequences, and Therapy of Tumors Acidosis. Cancer Metastasis Rev. 2019 Mar 26; a IF:6.667.
23. Setti Boubaker N, Cicchillitti L, Said R, Gurtner A, Ayed H, Blel A, Karray O, Essid MA, Gharbi M, Bouzouita A, Rammeh Rommeni S, Chebil M, Piaggio G, Ouerhani S. The Clinical and Prognostic Value of miR-9 Gene Expression in Tunisian Patients with Bladder Cancer. Mol.Biol.Rep. 2019 Jun 18; a IF:2.107.
24. Spugnini EP, Vincenzi B, Amadio B, Baldi A. Adjuvant Electrochemotherapy with Bleomycin and Cisplatin Combination for Canine Soft Tissue Sarcomas: A Study of 30 Cases. Open Vet.J. 2019 Apr; 9(1): 88a IF:NO IF.
25. Tacconi EM, Badie S, De Gregoriis G, Reislander T, Lai X, Porru M, Folio C, Moore J, Kopp A, Baguna Torres J, Sneddon D, Green M, Dedic S, Lee JW, Batra AS, Rueda OM, Bruna A, Leonetti C, Caldas C, Cornelissen B, Brino L, Ryan A, Biroccio A, Tarsounas M. Chlorambucil Targets BRCA1/2-Deficient Tumours and Counteracts PARP Inhibitor Resistance. EMBO Mol.Med. 2019 Jul; 11(7): e9982a IF:10.624.
26. Vizza E, Mancini E, Laquintana V, Loria R, Carosi M, Baiocco E, Cicchillitti L, Piaggio G, Patrizi L, Sperduti I, Zampa A, Cutillo G, Falcioni R, Corrado G. The Prognostic Significance of Positive Peritoneal Cytology in Endometrial Cancer and its Correlations with L1-CAM Biomarker. Surg.Oncol. 2019 Mar; 28: 151a IF:3.000.
27. Zizza P, Dinami R, Porru M, Cingolani C, Salvati E, Rizzo A, D'Angelo C, Petti E, Amoreo CA, Mottolese M, Sperduti I, Chambery A, Russo R, Ostano P, Chiorino G, Blandino G, Sacconi A, Cherfils-Vicini J, Leonetti C, Gilson E, Biroccio A. TRF2 Positively Regulates SULF2 Expression Increasing VEGF-A Release and Activity in Tumor Microenvironment. Nucleic Acids Res. 2019 Apr 23; 47(7): 3365a IF:11.147.

BIOSTATISTIC AND BIOINFORMATIC UNIT

HEAD: DR. DIANA GIANNARELLI, BIOSTATISTICIAN

STAFF

Francesca Sperati, Biostatistician
Isabella Sperduti, Biostatistician
Irene Terrenato, Biostatistician

MISSION

The Biostatistical and Bioinformatic Unit gives statistical advice for the protocol design related to observational and experimental studies. It is a support for the researchers in study design choice, randomization procedures identification, sample size calculation and Case Report Form definition.

This Unit performs the statistical analysis of clinical and laboratory data and develops new technique of data analysis, as required from the always increasing complexity of available information. It performs also systematic reviews and meta-analysis on clinically relevant aspects.

On the informatic side the U nit develops and implements databases related to clinical trial and research projects as well as particular pathologies. The Unit develops Web based platform in client/server environment.

RESEARCH ACTIVITIES

The Unit implements the most advanced statistical and methodological techniques to analyze data arrays. Along with the basic ways of analyzing data multivariate approaches are followed using available softwares as SPSS, Medcalc, Comprehensive Meta-analysis, PASS, NCSS and specific routines developed in R environment. Data coming from our single center and multicenter studies

are formally checked together with investigators and strategies are constantly discussed. Our support starts with the study design and sample size determination using the most appropriate and innovative clinical trial design, and goes on focusing on protocol development and randomization scheme. During the study we support the investigators with interim analysis and database management. When writing the paper we perform the analysis and discuss the interpretation of results. Our activity includes systematic reviews and m eta-analysis as well as the most recent techniques of analysis as propensity score and network meta-analysis. The informatic section develops with Visual Studio 2012. NET4 software web based platforms to manage clinical data related to patients enrolled in research projects. It is involved also in the design and implementation of web site with the software Joomla. In collaboration we study the possibility of reducing high-dimensional data to develop models for interpreting prognostic and predictive role of factors.

PUBLICATIONS

1. Antonini G, De Berardinis E, Busetto GM, Del Giudice F, Chung BI, Conti SL, Ferro M, Musi G, Fragas R, De Cobelli O, Sperduti I, Gross MS, Perito PE. Postoperative Vacuum Therapy Following AMS LGX 700(R) Inflatable Penile Prosthesis Placement: Penile Dimension Outcomes and overall Satisfaction. Int.J.Impot.Res. 2019 Feb 11;
2. Appetecchia M, Lauretta R, Barnabei A, Pieruzzi L, Terrenato I, Cavedon E, Mian C, Castagna MG, Elisei R, SIE (Italian Society of Endocrinology) Working Group. Epidemiology of Simultaneous Medullary and Papillary Thyroid Carcinomas (MTC/PTC): An Italian Multicenter Study. Cancers (Basel). 2019 Oct 9; 11(10): E1516a

3. Bersanelli M, Buti S, De Giorgi U, Di Maio M, Giannarelli D, Pignata S, Banna GL. State of the Art about Influenza Vaccination for Advanced Cancer Patients Receiving Immune Checkpoint Inhibitors: When Common Sense is Not enough. Crit.Rev.Oncol.Hematol. 2019 Jul; 139: 87a
4. Biscaglia L, di Caccamo P, Terrenato I, Arrica MA, Seita A, Campus G, UNRWA group. Oral Health Status and Caries Trend among 12-Year Old Palestine Refugee Students: Results from the UNRWA's Oral Health Surveys 2011 and 2016. BMC Oral Health. 2019 Jul 18; 19(1): 157a
5. Caffo O, Wissing M, Bianchini D, Bergman A, Thomsen FB, Schmid S, Yu EY, Bournakis E, Sella A, Zagonel V, De Giorgi U, Tucci M, Gelderblom H, Galli L, Pappagallo G, Bria E, Sperduti I, Oudard S, CASTOR si. Survival Outcomes from a Cumulative Analysis of Worldwide Observational Studies on Sequential use of New Agents in Metastatic Castration-Resistant Prostate Cancer. Clinical Genitourinary Cancer. 2019 09/27; : S1558a
6. Chiappetta M, Leuzzi G, Sperduti I, Bria E, Mucilli F, Lococo F, Spaggiari L, Ratto GB, Filosso PL, Facciolo F. Lymph-Node Ratio Predicts Survival among the Different Stages of Non-Small-Cell Lung Cancer: A Multicentre Analysis. Eur.J.Cardiothorac.Surg. 2019 Mar; 55(3): 405a
7. Chiofalo B, Bruni S, Certelli C, Sperduti I, Baiocco E, Vizza E. Primary Debulking Surgery Vs. Interval Debulking Surgery for Advanced Ovarian Cancer: Review of the Literature and Meta-Analysis. Minerva Med. 2019 Aug; 110(4): 330a
8. Chiofalo B, Mazzon I, Di Angelo Antonio S, Amadore D, Vizza E, Lagana AS, Vocaturo G, Calagna G, Favilli A, Palmara V, Maranto M, Vitale SG, Cucinella G, Granese R, Ghezzi F, Sperduti I, Triolo O. Hysteroscopic Evaluation of Endometrial Changes in Breast Cancer Women with Or without Hormone Therapies: Results from a Large Multicenter Cohort Study. J.Minim Invasive Gynecol. 2019 Aug 16; a
9. Corrado G, Mereu L, Bogliolo S, Cela V, Gardella B, Sperduti I, Certelli C, Pellegrini A, Posar G, Zampa A, Tateo S, Gadducci A, Spinillo A, Vizza E. Comparison between Single-Site and Multiport Robot-Assisted Hysterectomy in Obese Patients with Endometrial Cancer: An Italian Multi-Institutional Study. The International Journal of Medical Robotics + Computer Assisted Surgery : MRCAS. 2019 12/18; : e2066a
10. Cortinovis D, Chiari R, Catino A, Grossi F, DE Marinis F, Sperandi F, Piantedosi F, Vitali M, Parra HJS, Migliorino MR, Tondini C, Tassinari D, Frassoldati A, Verderame F, Pazzola A, Cognetti F, Palmiotti G, Marchetti P, Santoro A, Giannarelli D, Colonese F, Delmonte A. Italian Cohort of the Nivolumab EAP in Squamous NSCLC: Efficacy and Safety in Patients with CNS Metastases. Anticancer Res. 2019 Aug; 39(8): 4265a
11. Crino L, Bidoli P, Delmonte A, Grossi F, De Marinis F, Ardizzoni A, Vitiello F, Lo Russo G, Parra HS, Cortesi E, Cappuzzo F, Calabro L, Tiseo M, Turci D, Gamucci T, Antonelli P, Morabito A, Chella A, Giannarelli D, Galetta D. Italian Cohort of Nivolumab Expanded Access Program in Squamous Non-Small Cell Lung Cancer: Results from a Real-World Population. Oncologist. 2019 Apr 17;
12. Crino L, Bronte G, Bidoli P, Cravero P, Minenza E, Cortesi E, Garassino MC, Proto C, Cappuzzo F, Grossi F, Tonini G, Sarobba MG, Pinotti G, Numico G, Samaritani R, Ciuffreda L, Frassoldati A, Bregni M, Santo A, Piantedosi F, Illiano A, De Marinis F, Tamberi S, Giannarelli D, Delmonte A. Nivolumab and Brain Metastases in Patients with Advanced Non-Squamous Non-Small Cell Lung Cancer. Lung Cancer. 2019 Mar; 129: 35a
13. Cristaudo A, Petrucci F, Giannarelli D, Cercato MC, Orsini D, Morrone A, Bocca B. Nickel Dermatitis from Earrings 15 Years After EU Directive Implementation: A Clinical-Epidemiological Study and a Market Survey in Rome, Italy. J.Eur.Acad.Dermatol.Venereol. 2019 Oct; 33(10): 1928a
14. De Giorgi U, Carteni G, Giannarelli D, Basso U, Galli L, Cortesi E, Caserta C, Pignata S, Sabbatini R, Bearz A, Buti S, Lo Re G, Berruti A, Bracarda S, Cognetti F, Rastelli F, Fornarini G, Porta C, Turci D, Sternberg CN, Procopio G, Italian Nivolumab Renal Cell Cancer Early Access Program Group. Safety and Efficacy of Nivolumab for Metastatic Renal Cell Carcinoma: Real-World Results from an Expanded Access Programme. BJU Int. 2019 Jan; 123(1): 98a
15. De Giorgi U, Procopio G, Giannarelli D, Sabbatini R, Bearz A, Buti S, Basso U, Mitterer M, Ortega C, Bidoli P, Ferrau F, Crino L, Frassoldati A, Marchetti P, Mini E, Scoppola A, Verusio C, Fornarini G, Carteni G, Caserta C, Sternberg CN. Association of Systemic Inflammation Index and Body Mass Index

with Survival in Patients with Renal Cell Cancer Treated with Nivolumab. Clin.Cancer Res. 2019 Jul 1; 25(13): 3839a

16. Del Giudice F, Busetto GM, De Berardinis E, Sperduti I, Ferro M, Maggi M, Gross MS, Sciarra A, Eisenberg ML. A Systematic Review and Meta-Analysis of Clinical Trials Implementing Aromatase Inhibitors to Treat Male Infertility. Asian J.Androl. 2019 10/15; : 10.4103/aja.aja_101_19a
17. Di Benedetto A, Ercolani C, Pizzuti L, Angelucci D, Sergi D, Marinelli C, Iezzi L, Sperati F, Terrenato I, Mazzotta M, Mariani L, Vizza E, Paoletti G, Tomao S, Maugeri-Sacca M, Barba M, Tinari N, Natoli C, Ciliberto G, Grassadonia A, Vici P. Prognostic Relevance of DNA Damage and Repair Biomarkers in Elderly Patients with Hormone-Receptor-Positive Breast Cancer Treated with Neoadjuvant Hormone Therapy: Evidence from the Real-World Setting. Ther.Adv.Med.Oncol. 2019 Aug 18; 11: 1758835919853192a
18. Di Giacomo AM, Covre A, Finotello F, Rieder D, Danielli R, Sigalotti L, Giannarelli D, Petiprez F, Lacroix L, Valente M, Cutaia O, Fazio C, Amato G, Lazzeri A, Monterisi S, Miracco C, Coral S, Anichini A, Bock C, Nemc A, Oganesian A, Lowder JN, Azab M, Fridman WH, Sautes-Fridman C, Trajanoski Z, Maio M. Guadecitabine Plus Ipilimumab in Unresectable Melanoma: The NIBIT-M4 Clinical Trial. Clin.Cancer Res. 2019 Dec; 25(24): 7351a
19. Fabi A, Lanzetta G, Vizza E, Corsi D, Moscetti L, Spinelli G, Mentuccia L, Lalle M, Perrone M, Baiocco L, Falcicchio C, Milani A, Giannarelli D, Cognetti F, Pugliese P. The Unmet Need for Oncofertility Preservation in Women: Results of a Survey by Different Oncological Specialists in Lazio, Italy. Curr.Probl.Cancer. 2019 Dec; 43(6): 100479a
20. Gamucci T, Pizzuti L, Natoli C, Mentuccia L, Sperduti I, Barba M, Sergi D, Iezzi L, Maugeri-Sacca M, Vaccaro A, Magnolfi E, Gelibter A, Barchiesi G, Magri V, D'Onofrio L, Cassano A, Rossi E, Botticelli A, Moscetti L, Omarini C, Fabbri MA, Scinto AF, Corsi D, Carbognin L, Mazzotta M, Bria E, Foglietta J, Samaritani R, Garufi C, Mariani L, Barni S, Mirabelli R, Sarmiento R, Graziano V, Santini D, Marchetti P, Tonini G, Di Lauro L, Sanguineti G, Paoletti G, Tomao S, De Maria R, Veltri E, Paris I, Giotta F, Latorre A, Giordano A, Ciliberto G, Vici P. A Multicenter REtrospective Observational Study of First-Line Treatment with PERtuzumab, Trastuzumab and Taxanes for Advanced HER2 Positive Breast Cancer Patients. RePer Study. Cancer.Biol.Ther. 2019 20(2): 192-200a
21. Giusti R, Mazzotta M, Verna L, Sperduti I, Di Pietro FR, Marchetti P, Porzio G. The Incidence of Alcoholism in Patients with Advanced Cancer Receiving Active Treatment in Two Tertiary Care Centers in Italy. Alcohol Alcohol. 2019 Jan; 54(1): 47-50a
22. Goeman F, De Nicola F, Scalera S, Sperati F, Gallo E, Ciuffreda L, Pallocca M, Pizzuti L, Krasniqi E, Barchiesi G, Vici P, Barba M, Buglioni S, Casini B, Visca P, Pescarmona E, Mazzotta M, De Maria R, Fanciulli M, Ciliberto G, Maugeri-Sacca M. Mutations in the KEAP1-NFE2L2 Pathway Define a Molecular Subset of Rapidly Progressing Lung Adenocarcinoma. J.Thorac.Oncol. 2019 14(11): 1924a
23. Grossi F, Genova C, CrinÃ² L, Delmonte A, Turci D, Signorelli D, Passaro A, Soto Parra H, Catino A, Landi L, Gelsomino F, Tiseo M, Puppo G, Roila F, Ricciardi S, Tonini G, Cognetti F, Toschi L, Tassinari D, Scoppola A, Giannarelli D, Cortesi E. Real-Life Results from the overall Population and Key Subgroups within the Italian Cohort of Nivolumab Expanded Access Program in Non-Squamous Non-Small Cell Lung Cancer. European Journal of Cancer (Oxford, England : 1990). 2019 12; 123: 72a
24. Iacorossi L, Gambalunga F, Molinaro S, De Domenico R, Giannarelli D, Fabi A. The Effectiveness of the Sport "Dragon Boat Racing" in Reducing the Risk of Lymphedema Incidence: An Observational Study. Cancer Nurs. 2019 Jul/Aug; 42(4): 323a
25. Landi L, Chiari R, Tiseo M, D'Inca F, Dazzi C, Chella A, Delmonte A, Bonanno L, Giannarelli D, Cortinovis DL, De Marinis F, Borra G, Morabito A, Gridelli C, Galetta D, Barbieri F, Grossi F, Capelletto E, Minuti G, Mazzoni F, Verusio C, Bria E, Ali G, Bruno R, Proietti A, Fontanini G, Crino L, Cappuzzo F. Crizotinib in MET Deregulated Or ROS1 Rearranged Pretreated Non-Small-Cell Lung Cancer (METROS): A Phase II, Prospective, Multicentre, Two-Arms Trial. Clin.Cancer Res. 2019 Aug 15;
26. Landi L, D'IncÃ F, Gelibter A, Chiari R, Grossi F, Delmonte A, Passaro A, Signorelli D, Gelsomino F, Galetta D, Giannarelli D, Soto Parra H, Minuti G, Tiseo M, Migliorino MR, Cognetti F, Toschi L, Bidoli P, Piantedosi F, Calabro' L, Cappuzzo F. Bone Metastases and Immunotherapy in Patients with Advanced Non-Small-Cell Lung Cancer. Journal for Immunotherapy of Cancer. 2019 11/21; 7(1): 316a

27. Latina R, De Marinis MG, Giordano F, Osborn JF, Giannarelli D, Di Biagio E, Varrassi G, Sansoni J, Bertini L, Baglio G, D'Angelo D, Baldeschi GC, Piredda M, Carassiti M, Camilloni A, Paladini A, Casale G, Mastroianni C, Notaro P, PRG, Pain Researchers Group into Latium Region, Diamanti P, Coaccioli S, Tarsitani G, Cattaruzza MS. Epidemiology of Chronic Pain in the Latium Region, Italy: A Cross-Sectional Study on the Clinical Characteristics of Patients Attending Pain Clinics. Pain Manag.Nurs. 2019 Aug; 20(4): 373a
28. Maggi G, Terrenato I, Giacomelli L, Zoccali C, Condoleo MF, Falcicchio C, Baldi J, Vari S, Ferraresi V, Biagini R, Pugliese P. Sarcoma Patients' Quality of Life from Diagnosis to Yearly Follow-Up: Experience from an Italian Tertiary Care Center. Future Oncol. 2019 Sep; 15(27): 3125a
29. Maggi M, Panebianco V, Mosca A, Salciccia S, Gentilucci A, Di Pierro G, Busetto GM, Barchetti G, Campa R, Sperduti I, Del Giudice F, Sciarra A. Prostate Imaging Reporting and Data System 3 Category Cases at Multiparametric Magnetic Resonance for Prostate Cancer: A Systematic Review and Meta-Analysis. Eur.Urol.Focus. 2019 Jul 3;
30. Magnani C, Calvieri A, Giannarelli D, Espino M, Casale G. Peripherally Inserted Central Catheter, Midline, and "Short" Midline in Palliative Care: Patient-Reported Outcome Measures to Assess Impact on Quality of Care. J.Vasc.Access. 2019 Sep; 20(5): 475a
31. Magnani C, Mastroianni C, Giannarelli D, Stefanelli MC, Di Cienzo V, Valerioti T, Casale G. Oral Hygiene Care in Patients with Advanced Disease: An Essential Measure to Improve Oral Cavity Conditions and Symptom Management. Am.J.Hosp.Palliat.Care. 2019 36(9): 815a
32. Maschio M, Mengarelli A, Zarabla A, Giannarelli D, Maialetti A, Gumenyuk S, Renzi D, Palombi F, Pisani F, Romano A, Spadea A, Galie E, Marchesi F. Role of Pregabalin in Treatment of Polyneuropathy in Multiple Myeloma Patients: A Retrospective Study. Clin.Neuropharmacol. 2019 42(5): 167a
33. Maschio M, Pauletto G, Zarabla A, Maialetti A, Lus T, Villani V, Fabi A, Koudriavtseva T, Giannarelli D. Perampanel in Patients with Brain Tumor-Related Epilepsy in Real-Life Clinical Practice: A Retrospective Analysis. Int.J.Neurosci. 2019 Jun; 129(6): 593a
34. Maschio M, Zarabla A, Maialetti A, Marchesi F, Giannarelli D, Gumenyuk S, Pisani F, Renzi D, GaliÃ¨ E, Mengarelli A. The Effect of Docosahexaenoic Acid and Î±-Lipoic Acid as Prevention of Bortezomib-Related Neurotoxicity in Patients with Multiple Myeloma. Integrative Cancer Therapies. 2019 Jan; 18: 1534735419888584a
35. Mercante G, Anelli A, Giannarelli D, Giordano D, Sinopoli I, Ferreli F, Digiesi G, Appetecchia ML, Barnabei A, Cristalli G, Conti L, Pellini R, Fabio P, Lombardi D, De Virgilio A, Spriano G. Cost-Effectiveness in Transient Hypocalcemia Post-Thyroidectomy. Head Neck. 2019 41(11): 3940-3947a
36. Molica S, Giannarelli D, Levato L, Mirabelli R, Levato D, Lentini M, Piro E. A Simple Score Based on Geriatric Assessment Predicts Survival in Elderly Newly Diagnosed Chronic Lymphocytic Leukemia Patients. Leuk.Lymphoma. 2019 Mar; 60(3): 845a
37. Molica S, Giannarelli D, Mirabelli R, Levato L, Shanafelt TD. The Magnitude of Improvement in Progression-Free Survival with Targeted Therapy in relapsed/refractory Chronic Lymphocytic Leukemia Based on Prognostic Risk Category: A Systematic Review and Meta-Analysis. Leuk.Lymphoma. 2019 Jul; 60(7): 1644a
38. Molica S, Giannarelli D, Montserrat E. Minimal Residual Disease and Survival Outcomes in Patients with Chronic Lymphocytic Leukemia: A Systematic Review and Meta-Analysis. Clin.Lymphoma Myeloma Leuk. 2019 19(7): 423a
39. Molica S, Giannarelli D, Shanafelt TD. Comparison of Venetoclax Plus Rituximab with B-Cell Receptor Inhibitors in Patients with relapsed/refractory Chronic Lymphocytic Leukemia: A Systematic Review and Network Meta-Analysis. Leuk.Lymphoma. 2019 11/14; : 1a
40. Morlino S, Dordoni C, Sperduti I, Clark CJ, Piedimonte C, Fontana A, Colombi M, Grammatico P, Copetti M, Castori M. Italian Validation of the Functional Difficulties Questionnaire (FDQ-9) and its Correlation with Major Determinants of Quality of Life in Adults with Hypermobile Ehlers-Danlos syndrome/hypermobility Spectrum Disorder. Am.J.Med.Genet.B.Neuropsychiatr.Genet. 2019 Jan; 180(1): 25a
41. Nicolazzo C, Busetto GM, Gradilone A, Sperduti I, Del Giudice F, Loreni F, Cortesi E, de Berardinis E, Gazzaniga P, Raimondi C. Circulating Tumor Cells Identify Patients with Super-High-Risk Non-Muscle-

Invasive Bladder Cancer: Updated Outcome Analysis of a Prospective Single-Center Trial. Oncologist. 2019 May; 24(5): 612a

42. Pallocca M, Angeli D, Palombo F, Sperati F, Milella M, Goeman F, De Nicola F, Fanciulli M, Nistico P, Quintarelli C, Ciliberto G. Combinations of Immuno-Checkpoint Inhibitors Predictive Biomarkers Only Marginally Improve their Individual Accuracy. J.Transl.Med. 2019 Apr 23; 17(1): 131a
43. Panozzo G, Staurenghi G, Dalla Mura G, Giannarelli D, Alessio G, Alongi S, Appolloni R, Baldascino A, Boscia F, Caporossi A, Cereda M, D'Ugo E, Fallico M, Avitabile T, Galan A, La Spina C, Lo Giudice G, Mastropasqua L, Palmisano C, Panico C, Parravano MC, Penna R, Pintore P, Vaiano A, Reibaldi M, Rizzo S, Rossi T, Varano M, Virgili G. Prevalence of Diabetes and Diabetic Macular Edema in Patients Undergoing Senile Cataract Surgery in Italy: The DIabetes and CATaract Study. Eur.J.Ophthalmol. 2019 Mar 11; : 1120672119830578a
44. Paolini F, Bonomo C, Terrenato I, Pennetti A, Covello R, Cristalli G, Venuti A. Beta Human Papillomaviruses in Middle Ear Squamous Cell Carcinoma. Oral Oncol. 2019 Mar; 90: 134a
45. Passiglia F, Cappuzzo F, Alabiso O, Bettini AC, Bidoli P, Chiari R, Defferrari C, Delmonte A, Finocchiaro G, Francini G, Gelsomino F, Giannarelli D, Giordano M, Illiano A, Livi L, Martelli O, Natoli C, Puppo G, Ricevuto E, Roca E, Turci D, Galetta D. Efficacy of Nivolumab in Pre-Treated Non-Small-Cell Lung Cancer Patients Harbouring KRAS Mutations. Br.J.Cancer. 2019 Jan; 120(1): 57a
46. Perrone F, Di Maio M, Efficace F, Gallo C, Giannarelli D, Montesarchio V, Riva S. Assessing Financial Toxicity in Patients with Cancer: Moving Away from a One-Size-Fits-all Approach. J.Oncol.Pract. 2019 Aug; 15(8): 460a
47. Persico M, Aglitti A, Milella M, Coppola C, Messina V, Claar E, Gentile I, Sogari F, Pierri P, Surace LA, Morisco F, Tundo P, Brancaccio G, Serviddio G, Gatti P, Termite AP, Di Costanzo GG, Caroleo B, Cozzolongo R, Coppola N, Longo A, Fontanella L, Federico A, Rosato V, Terrenato I, Masarone M. Real-Life glecaprevir/pibrentasvir in a Large Cohort of Patients with Hepatitis C Virus Infection: The MISTRAL Study. Liver Int. 2019 Jun 7;
48. Piredda M, Fiorini J, Facchinetti G, Biagioli V, Marchetti A, Conti F, Iacorossi L, Giannarelli D, Matarese M, De Marinis MG. Risk Factors for a Difficult Intravenous Access: A Multicentre Study Comparing Nurses' Beliefs to Evidence. J.Clin.Nurs. 2019 Oct; 28(19-20): 3492a
49. Pizzuti L, Giordano A, Michelotti A, Mazzotta M, Natoli C, Gamucci T, De Angelis C, Landucci E, Diodati L, Iezzi L, Mentuccia L, Fabbri A, Barba M, Sanguineti G, Marchetti P, Tomao S, Mariani L, Paris I, Lorusso V, Vallarelli S, Cassano A, Airoldi F, Orlandi A, Moscetti L, Sergi D, Sarobba MG, Tonini G, Santini D, Sini V, Veltri E, Vaccaro A, Ferrari L, De Tursi M, Tinari N, Grassadonia A, Greco F, Botticelli A, La Verde N, Zamagni C, Rubino D, Cortesi E, Magri V, Pomati G, Scagnoli S, Capomolla E, Kayal R, Scinto AF, Corsi D, Cazzaniga M, Laudadio L, Forciniti S, Mancini M, Carbognin L, Seminara P, Barni S, Samaritani R, Roselli M, Portarena I, Russo A, Ficorella C, Cannita K, Carpano S, Pistelli M, Berardi R, De Maria R, Sperduti I, Ciliberto G, Vici P. Palbociclib Plus Endocrine Therapy in HER2 Negative, Hormonal Receptor-Positive, Advanced Breast Cancer: A Real-World Experience. J.Cell.Physiol. 2019 Jun; 234(6): 7708a
50. Pizzuti L, Krasniqi E, Barchiesi G, Della Giulia M, Izzo F, Sanguineti G, Marchetti P, Mazzotta M, Giusti R, Botticelli A, Gamucci T, Natoli C, Grassadonia A, Tinari N, Iezzi L, Tomao S, Tomao F, Tonini G, Santini D, Astone A, Michelotti A, De Angelis C, Mentuccia L, Vaccaro A, Magnolfi E, Gelibter A, Magri V, Cortesi E, D'Onofrio L, Cassano A, Rossi E, Cazzaniga M, Moscetti L, Omarini C, Piacentini F, Fabbri MA, Scinto AF, Corsi D, Carbognin L, Bria E, La Verde N, Samaritani R, Garufi C, Barni S, Mirabelli R, Sarmiento R, Veltri EM, D'Auria G, Paris I, Giotta F, Lorusso V, Cardillo F, Landucci E, Mauri M, Ficorella C, Roselli M, Adamo V, Ricciardi GRR, Russo A, Berardi R, Pistelli M, Fiorio E, Cannita K, Sini V, D'Ostilio N, Foglietta J, Greco F, Zamagni C, Garrone O, Di Cocco B, Baldini E, Livi L, Desideri I, Meattini I, Sarobba G, Del Medico P, De Tursi M, Generali D, De Maria R, Risi E, Ciliberto G, Sperduti I, Villa A, Barba M, Di Leo A, Vici P. Distinct HR Expression Patterns significantly Affect the Clinical Behavior of Metastatic HER2+ Breast Cancer and Degree of Benefit from Novel Anti-HER2 Agents in the Real World Setting. Int.J.Cancer. 2019 Jul 22;

51. Reda G, Cassin R, Gentile M, Mauro FR, Giannarelli D, Fattizzo B, Barbieri M, Silvestris I, Fabris S, Morabito F, Neri A, Barcellini W, Cortelezzi A. IgA Hypogammaglobulinemia Predicts Outcome in Chronic Lymphocytic Leukemia. Leukemia. 2019 Jun; 33(6): 1519a
52. Rihawi K, Giannarelli D, Galetta D, Delmonte A, Giavarra M, Turci D, Garassino M, Tiseo M, Barbieri F, Panni S, Ardizzoni A. BRAF Mutant NSCLC and Immune Checkpoint Inhibitors: Results from a Real-World Experience. J.Thorac.Oncol. 2019 Mar; 14(3): e57a
53. Riva S, Bryce J, De Lorenzo F, Del Campo L, Di Maio M, Efficace F, Frontini L, Giannarelli D, Gitto L, Iannelli E, Jommi C, Montesarchio V, Traclo F, Vaccaro CM, Gallo C, Perrone F. Development and Validation of a Patient-Reported Outcome Tool to Assess Cancer-Related Financial Toxicity in Italy: A Protocol. BMJ Open. 2019 Sep 9; 9(9): e031485a
54. Rossi A, Noia VD, Gkountakos A, D'Argento E, Sartori G, Vita E, Monteverdi S, Lombardo F, Iacovelli R, Carbognin L, Sperduti I, Milella M, Tortora G, Bria E, Pilotto S. PD-L1 for Selecting Non-Small-Cell Lung Cancer Patients for First-Line Immuno-Chemotherapy Combination: A Systematic Review and Meta-Analysis. Immunotherapy. 2019 07; 11(10): 921a
55. Rossi V, Berchialla P, Giannarelli D, NisticÃ² C, Ferretti G, Gasparro S, Russillo M, Catania G, Vigna L, Mancusi RL, Bria E, Montemurro F, Cognetti F, Fabi A. Should all Patients with HR-Positive HER2-Negative Metastatic Breast Cancer Receive CDK 4/6 Inhibitor as First-Line Based Therapy? A Network Meta-Analysis of Data from the PALOMA 2, MONALEESA 2, MONALEESA 7, MONARCH 3, FALCON, SWOG and FACT Trials. Cancers. 2019 10/26; 11(11): 1661a
56. Sanguineti G, Giannarelli D, Petrongari MG, Arcangeli S, Sangiovanni A, Saracino B, Farneti A, Faiella A, Conte M, Arcangeli G. Leukotoxicity After Moderately Hypofractionated Radiotherapy Versus Conventionally Fractionated Dose Escalated Radiotherapy for Localized Prostate Cancer: A Secondary Analysis from a Randomized Study. Radiat.Oncol. 2019 Jan 30; 14(1): 23a
57. Santo A, Pilotto S, Galetta D, Grossi F, Fasola G, Romano G, Bonanno L, Bearz A, Papi M, Roca E, Catino A, Follador A, Rijavec E, Genova C, Petrillo P, Favaretto A, Giannone L, Milella M, Tortora G, Giannarelli D, Bria E, Italian association FONICAP (Operative National Interdisciplinary Force against Lung Cancer). Maintenance with Lanreotide in Small-Cell Lung Cancer Expressing Somatostatine Receptors: A Multicenter, Randomized, Phase 3 Trial. Lung Cancer. 2019 Aug; 134: 121a
58. Signorelli C, Chilelli MG, Sperduti I, Giacinti S, Amodio PM, Palmieri RM, Ranalli TV, Gomes VV, Rosetto ME, Nelli F, Ruggeri EM. Correlation of Tumor Location to Clinical Outcomes in Colorectal Cancer: A Single-Institution Retrospective Analysis. Anticancer Res. 2019 Sep; 39(9): 4917a
59. Tanzilli A, Pace A, Fabi A, Telera S, Vidiri A, Carosi M, Terrenato I, Koudriavtseva T, Boccaletti R, Villani V. Neurocognitive Evaluation in Older Adult Patients Affected by Glioma. J Geriatr Oncol. 2019 a
60. Telera S, Gorgoglione N, Raus L, Vidiri A, Villani V, Pace A, Fabi A, Crispo F, Castiglione M, Sperduti I, Boccaletti R. Open Kyphoplasty for Metastatic Spine Disease: A Retrospective Clinical Series. World Neurosurg. 2019 Jul; 127: e751a
61. Toss A, Venturelli M, Sperduti I, Molinaro E, Isca C, Barbieri E, Piacentini F, Omarini C, Cortesi L, Cascinu S, Moscetti L. First-Line Treatment for Endocrine-Sensitive Bone-Only Metastatic Breast Cancer: Systematic Review and Meta-Analysis. Clin.Breast Cancer. 2019 Jul 24;
62. Vennarecci G, Ferraro D, Tudisco A, Levi Sandri GB, Guglielmo N, Berardi G, Sperduti I, Ettorre GM. The ALPPS Procedure: Hepatocellular Carcinoma as a Main Indication. an Italian Single-Center Experience. Updates Surg. 2019 Mar; 71(1): 67a
63. Verzoni E, Carteni G, Cortesi E, Giannarelli D, De Giglio A, Sabbatini R, Buti S, Rossetti S, Cognetti F, Rastelli F, Sobrero A, Turci D, Sternberg CN, Porta C, Cappuzzo F, Tortora G, Tassinari D, Panni S, Pazzola A, Surico G, Raimondi A, De Giorgi U, Procopio G, Italian Nivolumab Renal Cell Cancer Early Access Program group. Real-World Efficacy and Safety of Nivolumab in Previously-Treated Metastatic Renal Cell Carcinoma, and Association between Immune-Related Adverse Events and Survival: The Italian Expanded Access Program. J.Immunother.Cancer. 2019 Apr 3; 7(1): 99a
64. Vidiri A, Marzi S, Gangemi E, Benevolo M, Rollo F, Farneti A, Marucci L, Spasiano F, Sperati F, Di Giuliano F, Pellini R, Sanguineti G. Intravoxel Incoherent Motion Diffusion-Weighted Imaging for

Oropharyngeal Squamous Cell Carcinoma: Correlation with Human Papillomavirus Status. Eur.J.Radiol. 2019 Aug 13; 119: 108640a

65. Villani V, Fabi A, Tanzilli A, Pasqualetti F, Lombardi G, Vidiri A, Gonnelli A, Molinari A, Cantarella M, Bellu L, Terrenato I, Carosi M, Maschio M, Telera SM, Carapella CM, Cognetti F, Paiar F, Zagonel V, Pace A. A Multicenter Real-World Study of Bevacizumab in Heavily Pretreated Malignant Gliomas: Clinical Benefit is a Plausible End Point? Future Oncol. 2019 Apr 12; 15(15): 1717-1727a
66. Villani V, Pace A, Vidiri A, Tanzilli A, Sperati F, Terrenato I, Mariantonia C, Casini B, Metro G, Maschio M, Tatiana K, Cognetti F, Fabi A. Phase II Study of Weekly Carboplatin in Pretreated Adult Malignant Gliomas. J.Neurooncol. 2019 Aug; 144(1): 211a
67. Villani V, Tanzilli A, Telera SM, Terrenato I, Vidiri A, Fabi A, Zucchella C, Carapella CM, Marucci L, Casini B, Carosi M, Oppido PM, Pace A. Comorbidities in Elderly Patients with Glioblastoma: A Field-Practice Study. Future Oncol. 2019 Jan 18;
68. Vizza E, Mancini E, Laquintana V, Loria R, Carosi M, Baiocco E, Cicchillitti L, Piaggio G, Patrizi L, Sperduti I, Zampa A, Cutillo G, Falcioni R, Corrado G. The Prognostic Significance of Positive Peritoneal Cytology in Endometrial Cancer and its Correlations with L1-CAM Biomarker. Surg.Oncol. 2019 Mar; 28: 151a
69. Zizza P, Dinami R, Porru M, Cingolani C, Salvati E, Rizzo A, D'Angelo C, Petti E, Amoreo CA, Mottolese M, Sperduti I, Chambery A, Russo R, Ostano P, Chiorino G, Blandino G, Sacconi A, Cherfils-Vicini J, Leonetti C, Gilson E, Biroccio A. TRF2 Positively Regulates SULF2 Expression Increasing VEGF-A Release and Activity in Tumor Microenvironment. Nucleic Acids Res. 2019 Apr 23; 47(7): 3365a

CLINICAL PATHOLOGY UNIT
Head: Dr. Laura Conti, MD, PhD

Staff

Antenucci A, BS
Cigliana G, BS
Cochi S, BS
Cordone I, MD, PhD
D'Alessandro M.G, BS
Digiesi G, MD
Mandoj C, BS
Martayan A, BS
Masi S, BS, PhD
Merola R, BS
Orlandi G, BS
Vercillo G, MD
Spinosa Patrizia, Technician
Ascani R, Technician
Attanasio M, Technician
Autullo L, Technician
De Bellis F, Technician
Del Carlo C, Technician
Giommi S, Technician
Lattanzio C, Technician
Pasquale A, Technician
Pisani S, Technician
Haoui M, Technician
Preziosi E, Administrative Collaborator

Mission

Clinical Pathology performs laboratory biological tests using the most modern techniques of investigation, that contribute to the clinical management of oncologic patients submitted to conventional and experimental therapies.

The Unit participates as a Reference Laboratory in the activities of the "Centro Studi Early Phase" (CSEP) for Phase 1 studies and supports "Clinical Trial Center" (CTC) activities for the subsequent Phase studies. Since 2014 is involved in the development of an Institutional Biobank as a strategic link between clinical and research activities. The research program is focused on the identification and validation of cancer-related molecular targets, the utilization of new technical approaches for tumor diagnosis, prognosis and monitoring in the context of innovative cancer therapies, for the best bench-to-bedside clinical research application.

The Clinical Pathology has already certified with a UNI EN ISO 9001:2015.

Clinical Activity

In 2019, about 1,000,000 examinations were carried out return of 4.000.000 Euro.

Onco-haematology

Innovative activities include the Primary Central Nervous System Lymphoma diagnosis by flow cytometry (FC) through disaggregation of a single brain stereotactic core biopsy for a better classification and management of brain lesions; leptomeningeal metastasis diagnosis and monitoring by cerebrospinal fluid FC and Minimal Residual Disease assessment in Multiple Myeloma by an original FC strategy of analysis based on intra-cytoplasmic immunoglobulin (cy-Ig) light chains ratio evaluated on patient-specific plasma cells immune profile. More recently the FC studies include an innovative antibodies combination for MM MRD assessment in patients undergoing anti-CD38 (daratumumab) treatment.

Molecular Diagnostics

Liquid biopsy

In Non Small Cell Lung Carcinoma (NSCLC) patients liquid biopsy allows to identify patients whose tumors have specific EGFR mutations, thus making them eligible for EGFR-targeted therapies (e.g. erlotinib). Liquid biopsy in these patients is also a valuable tool for the monitoring of disease progression and for the detection of mechanisms of resistance to EGFR-targeted therapies, e.g. EGFR T790M mutation. The early detection of T790M mutation is of great clinical value for switching to 3rd generation therapies (e.g. osimertinib - Tagrisso). The latter has been also approved by FDA as first-line treatment for EGFR+ NSCLC patients. We analized 159 plasma patients. Twenty-four patients (15%) developed the T790M mutation during EGFR-TKIs treatment. We compared two different platforms, cobas® EGFR Mutation and QuantStudio 3D (QS3D) and Digital PCR System (Life Technologies) methods. Our results showed a good concordance between the two platforms for EGFR mutations from NSCLC patient plasma. Tests that will be introduced next year are DPD and UGT1A1, expression of 5-fluorouracil and irinotecane toxicity respectively.

Hereditary Cancer syndromes (HCS)

Genetic testing with NGS technology on the genes associated with the most frequent HCS such as: Lynch syndrome (LS), Hereditary Breast and Ovary Cancer syndrome (HBOC), APC-associated polyposis and MUTYH-associated polyposis (AAP and MAP) and Multiple Endocrine Neoplasia syndrome type 1 and type 2 (MEN1 and MEN2). Moreover, in selected cases, a pan-hereditary cancer panel (HCS - Sophia Genetics) with 27 cancer-associated genes will be used. As to Hereditary Colorectal Cancer (HCC), a custom gene panel has been developed including POLE, POLD1, NTHL1, MSH3, BMPR1A, GREM1 and SMAD4 genes and been will be used for patients with diagnosis suspicion of HCC and no mutations in the genes included in the above-mentioned HCS panel.

Hereditary Hemochromatosis and Porphyria

Hereditary hemochromatosis (HH) is a clinically and genetically heterogeneous disorder of iron metabolism. To date, five different forms of the disease and corresponding genes (HFE, HAMP, HJV, TFR2 and SLC40A1) have been reported. According to the diagnosis suspicion of either of the different forms of the disease genetic testing of the specific gene will be performed.

Porphyria is a rare hereditary disease characterized by an abnormal metabolism of the hemoglobin. There are two general categories of porphyria: acute, which mainly affects the nervous system, and cutaneous, which mainly affects the skin. According to the clinical manifestations of the disease genetic testing of the associated genes (UROD, ALAS2, HMBS, PPOX, FECH) will be performed.

Pheochromocytoma and Paraganglioma

Pheochromocytoma and paraganglioma are rare tumors that arise from neural crest tissue: pheochromocytoma forms in the adrenal medulla whereas paragangliomas form outside the adrenal gland. Certain inherited disorders increase the risk of both tumors: MEN2, von Hippel-Lindau (VHL), Neurofibromatosis type 1 (NF1) and Hereditary Paraganglioma Syndrome. According to the diagnosis suspicion of either of the above-mentioned syndromes genetics testing of the specific disease-related genes will be performed.

Cytogenetics

The broad applications in oncohaematology are: identification of specific chromosome

abnormalities, monitoring disease progression and the success of therapy and bone marrow transplantation (PDTA Leucemia Acuta, PDTA Mieloma Multiplo, PDTA Leucemia Mieloide Cronica).

Besides, we search for actionable genetic abnormalities to improve the prognosis of sarcoma patients (PDTA Sarcomi).

In collaboration with SAFU, isolated cellular lines from the bone marrow of patients with multiple myeloma maintained in a stable culture without the addition of Il6 were characterized at the cytogenetic level after positive purification with ab anti CD138 to better understand the pathogenesis and clinical manifestations of human MM

Research Activity

Diagnostic harmonization initiative on Multiple Myeloma for Gruppo Laziale Mieloma Multiplo (GLMM).

The project aims to reach a consensus among regional laboratories specialized on onco-haematology diagnosis regarding the flow cytometry antibodies panel, data analysis and clinical report for Multiple Myeloma (MM) diagnosis and monitoring.

The network is also focusing on the positive selection of the plasma cell population by immune-magnetic beads separation, for a better assessment of the cytogenetic profile in plasma cell disorders.

New forms have been designed, approved and introduced on RedCap, the clinical and laboratory data base shared among all the GLMM Centers. The new collection forms focus on cytogenetic and immunophenotype data of MM patients at diagnosis and on follow up.

A National project is ongoing to create an “Italian MM MRD network” that will share the same method for MRD analysis in MM patients across hub-Haematology centers in Italy. The most common employed methods for MRD evaluation (both flow cytometry and molecular biology-based) will be harmonized among the involved “start-up” centers.

Role of Che-1 in transgenic mouse model of Multiple Myeloma

In collaboration with the SAFU laboratory, we investigated the role of Che-1, a RNA binding protein witch is involved in the control of transcription and cellular proliferation by regulating the state of the chromatin and by increasing its accessibility in Multiple Myeloma (MM). In particular we performed Serum Protein Electrophoresis (SPEP) to detect the levels of monoclonal immunoglobulins in serum of the Vk*Myc transgenic mouse model, which, through activating c-Myc oncogene in maturing B cells, recapitulates the pathogenesis and clinical manifestations of human MM, including progression from MGUS to plasma cell expansions (Chesi et al.; Cancer Cell 2008). At this purpose CD138+ neoplastic cells were isolated from the bone marrow (BM) of these mice and manipulated for knockdown of Che1 by siRna and transplanted into 5 recipient wild-type mice for each group. The delay in disease progression in Che-1 depleted MM cells, it was been recognize by analyzing the levels of monoclonal immunoglobulins in murine serum, as a distinct band (M-spike).

Urine monoclonal Free Light Chains

In collaboration with the Protein Study Group of Italian Society of Clinical Biochemistry and Molecular Biology (SIBioC) in the last year we participated in the revision and update of the "Consent document for the research and quantification of the BENCE JONES protein". The document is now being published.

Cost/Effectiveness evaluation of three different strategies in preventing transient hypocalcaemia after total thyroidectomy

Three different strategies to manage transient hypocalcemia after total thyroidectomy were compared to evaluate cost-effectiveness. The reliability of total serum calcium (TSCa), ionized calcium (ICa), and intact parathyroid hormone (iPTH) were investigated to achieve this goal. Methods: A multicenter, prospective randomized study was carried out with 169 patients. The strategies were "preventive" (oral calcium + vitamin D supplementation), "reactive" (therapy in hypocalcemia), and "predictive" (therapy if iPTH <10 pg/mL). The data collection study showed that TSCa had higher accuracy in identifying patients who developed hypocalcemia-related symptoms than ICa (84.6% vs 50.0%). TSCa 24 h after surgery showed 24.8% of patients with hypocalcemia, whereas TSCa 48 h after surgery identified a

further 10.6% with hypocalcemia (only in the "reactive" and "predictive" groups). iPTH showed low sensitivity as a predictor of hypocalcemia. Between the 3 groups, there was no significant difference in hospitalization time or number of symptomatic hypocalcemic patients. Interestingly, the cost-per-patient was significantly different among the groups. In conclusion, none of the discussed strategies allowed for early discharge of patients without any risk of transient hypocalcemia. The "preventive" strategy was the most cost-effective, despite overtreatment (6).

Upper extremity venous thrombosis in cancer patients with peripherally inserted central inserted catheters

Symptomatic PICC related deep venous Thrombosis (DVT) are frequent in cancer patients receiving chemotherapy. In collaboration with the Vascular Access Management Team we conducted a retrospective cohort study in cancer patients who underwent PICC placement for the administration of chemotherapy to evaluate the incidence of upper extremity venous thrombosis (UEVT) and establish the most predictive risk factors for the development of PICC-related thrombosis in cancer patients during chemotherapic treatment, for the future design of an integrated care pathway (ICT) that could be used to prevent thrombotic events. All patients were followed for a minimum of 6 months after PICC insertion, unless they died during this period. Factors previously associated with catheter-related thrombosis, including side of catheter placement, tip location, tumor type, inherited and acquired thrombophilia and environmental factors have been evaluated. The data collection study allowed to highlight a decrease in the incidence of the number of DVT events from 6.8% in 2016 to 2.9% in 2019.

Pilot study: validation of the use of PIVKA-II serum test in monitoring progression of Hepatocellular Carcinoma (HCC) in liver transplant candidate patients. Stratification of patients with increased risk of HCC recurrence after liver transplantation. Prospective study

PIVKA-II test is able to predict the most aggressive HCC forms. The aim of the study is to show if this test will improve the early comprehension of the HCC forms that show a higher recurrence risk in patients selected for liver transplant. The project is in progress, at present, we enrolled twenty-two patients, of whom fourteen with diagnosis of HCC and cirrhosis and eight with diagnosis of cirrhosis without HCC. Of the fourteen patients, six underwent liver transplantation.

Radio-induced modifications of lymphoid subpopulations involved in resistance and escape mechanisms to the treatment of localized prostate cancer.

Aim of the study is to evaluate the effect of radiotherapy (RT) on immuno-regulatory B and T lymphocyte subpopulations (Breg and Treg) and plasma cells and possible correlations with the clinical course of the disease and acute and late toxicity.

The flow cytometry characterization developed in our laboratory allowed the identification of Treg and Breg peripheral blood subpopulations through the acquisition of a high number (> 5000) of regulatory cells using innovative acquisition and analysis strategies. Twenty-one patients were analyzed before treatment (T0), 3 hours after the first RT session (T1), after an average dose of 24 Gy (T2), after the last RT session (T3), at + 6 months (T4) and at + 12 months (T5) after RT. Six patients entered the study and were analyzed also before hormono-therapy (T-1) for a total of 103 characterization. Analysis of the regulatory sub-populations modulation and modifications are ongoing.

Coagulation/complement activation and cerebral hypoperfusion in relapsing-remitting multiple sclerosis

Multiple sclerosis (MS) is a chronic immune-mediated inflammatory demyelinating and degenerative disease of the central nervous system. It has been demonstrated that not only adaptive immunity but also innate immune system plays a relevant role in MS pathogenesis. There are several studies supporting coagulation/complement and platelet involvement in the innate immune response in MS by linking inflammation and coagulation. Beyond, decreased MRI cerebral blood volume and flow (CBV, CBF), and its prolonged mean transit time (MTT) have been demonstrated in all forms of MS.

This is a multicenter, prospective, controlled study. Informed and consenting MS patients [1st group: 30 relapsing patients; 2nd group: 30 patients in remission] and 30 age and gender controls (3rd group) will be enrolled in the study.

Our study is based on hypothesis that coagulation/complement activation due to inflammatory-thrombotic processes in the course of MS relapse could determine cerebral blood flow deceleration.

The specific aims of the study are to evaluate both in patients and controls:

- The serum/plasma concentrations of coagulation/complement factors
- Absolute cerebral blood flow (CBF), blood volume (CBV) and mean transit time (MTT), by dynamic susceptibility contrast-enhanced 3.0-T MRI
- The correlation between the serum/plasma levels of coagulation/complement factors with both MRI perfusion data and demographic/clinical (age, gender, disease duration, disability) features of MS patients

The relationships between the laboratory and clinical data and the MRI perfusion findings could lead to the development of new effective therapeutic strategies in MS.

Publications

1. Basile U, Gulli F, Isgrò MA, Napodano C, Pocino K, Santini SA, Gragnani L, Conti L, Rossi E, Cordone I, Zignego AL, Rapaccini GL, Cigliana G, Berruti F, Todi L, Marino M, Di Stasio E. A Novel Biomarker Score for the Screening and Management of Patients with Plasma Cell Proliferative Disorders. Eur.Rev.Med.Pharmacol.Sci. 2019 23(10): 4293a IF:2.721.
2. Bravo E, Franchin T, Santoro F, Conti L, Carrara S, Marino M, Di Caro A, Cigliana G, Mandoj C, Baselice S, Daniele N, Giampaoli S, Quintarelli C, Salerno M, Zinno F, Russo G, Errico MC, Minghetti L, Ricciardi W, Napolitano M. The Biological Resources and Molecule Archives Organization: Turn a Need into an Opportunity for the Smart Specialization Strategy of the Lazio Region. Recenti Prog.Med. 2019 Feb; 110(2): 68a IF:NO IF.
3. Cuscino N, Raimondi L, De Luca A, Carcione C, Russelli G, Conti L, Baldi J, Conaldi PG, Giavaresi G, Gallo A. Gathering Novel Circulating Exosomal microRNA in Osteosarcoma Cell Lines and Possible Implications for the Disease. Cancers. 2019 12/03; 11(12): E1924a IF:6.162.
4. Mandoj C, Tomao L, Conti L. Coagulation in Brain Tumors: Biological Basis and Clinical Implications. Front.Neurol. 2019 Mar 18; 10: 181a IF:2.635.
5. Marchesi F, Pimpinelli F, Di Domenico EG, Renzi D, Gallo MT, Regazzo G, Rizzo MG, Gumenyuk S, Toma L, Marino M, Cordone I, Cantonetti M, Liberati AM, Montanaro M, Ceribelli A, Prignano G, Palombi F, Romano A, Papa E, Pisani F, Spadea A, Arcese W, Ensoli F, Mengarelli A. Association between CMV and Invasive Fungal Infections After Autologous Stem Cell Transplant in Lymphoproliferative Malignancies: Opportunistic Partnership Or Cause-Effect Relationship? Int.J.Mol.Sci. 2019 Mar 19; 20(6): E1373 [pii]a IF:4.183.
6. Mercante G, Anelli A, Giannarelli D, Giordano D, Sinopoli I, Ferreli F, Digiesi G, Appetecchia ML, Barnabei A, Cristalli G, Conti L, Pellini R, Fabio P, Lombardi D, De Virgilio A, Spriano G. Cost-Effectiveness in Transient Hypocalcemia Post-Thyroidectomy. Head Neck. 2019 41(11): 3940-3947a IF:2.442.
7. Plebani M, Banfi G, Bernardini S, Bondanini F, Conti L, Dorizzi R, Ferrara FE, Mancini R, Trenti T. Serum Or Plasma? an Old Question Awaiting for New Answers. Clin Chem Lab Med. 2019 a IF:3.638.
8. Spagnuolo M, Regazzo G, De Dominici M, Sacconi A, Pelosi A, Korita E, Marchesi F, Pisani F, Magenta A, Lulli V, Cordone I, Mengarelli A, Strano S, Blandino G, Rizzo MG, Calabretta B. Transcriptional Activation of the miR-17-92 Cluster is Involved in the Growth-Promoting Effects of MYB in Human Ph-Positive Leukemia Cells. Haematologica. 2019 Jan; 104(1): 82a IF:7.570.

PATHOLOGY UNIT
HEAD: DR. EDOARDO PESCARMONA, MD

STAFF

Mariantonia Carosi, M.D. Pathologist
Renato Covello, M.D. Pathologist
Maria Diodoro, M.D. Pathologist
Ferdinando Marandino, M.D. Pathologist
Mirella Marino, M.D. Pathologist
Letizia Perracchio, M.D. Pathologist
Andrea Russo, M.D. Pathologist
Paolo Visca, M.D. Pathologist
Maria Benevolo, Biologist
Simonetta Buglioni, Biologist
Beatrice Casini, Biologist
Paola Canalini, Technical Coordinator
Stefania Filippi, Technician
Angela Lattanzi, Technician
Barbara Frollano, Technician
Sabrina Lori, Technician
Patrizia Palmarelli, Technician
Arianna Papadantonakis, Technician
Annarita Pennetti, Technician
Patrizia Scordati, Technician
Anna Di Benedetto, Biologist
Cristiana Ercolani, Biologist
Enzo Gallo, Biologist
Carla Azzurra Amoreo, Biologist
Francesca Rollo, Biologist
Simona di Martino, Biologist (Biobank IRE)
Valentina Laquintana, Biologist (Biobank IRE)
Barbara Antoniani, Technician
Claudia Bonomo, Technician

MISSION

The Pathology Unit, which represents a pivotal hub for innovative diagnostic services and research programs, has the following missions:

1. To provide the 'state of the art' in pathology, that is crucial for patients' care, allowing disease prevention and treatment in a comprehensive, coordinated and cost-effective manner.
2. To implement the diagnostic expertise setting up novel molecular assays to be applied to diagnosis and care of tumours, facilitating collaborations with the other clinical units.
3. To promote innovative scientific programs, spanning the spectrum from basic to translational disease-oriented research. The participation to multidisciplinary and multicentric research is an essential component of the overall clinical and research mission. Furthermore, as custodians of tumour tissue Biobank, an important role of the Pathology Unit research mission is the proper and authorized use of tumour tissue samples.

CLINICAL ACTIVITY

In 2019 the clinical activities have included as a rule macroscopy and conventional histopathology on biopsy and surgical samples (surgical pathology), cytology on cytological samples (diagnostic cytology), and clinical necroscopy (autopsy). Furthermore, immunohistochemistry, FISH/SISH analysis, HPV detection a/o genotyping, and gene mutational status analysis (by NGS a/o real time PCR analysis) were also routinely performed. In 2019 surgical or biopsy samples from about 10.800 patients have been studied, encompassing the whole spectrum of the main human tumours (in particular urological, lung, breast, head & neck, and colorectal cancers). All cases of malignant tumours have been histologically typed and graded according to the most recent WHO classifications, and pathologically staged (pTNM) according to the latest TNM/UICC edition. Whenever required, ancillary (histochemistry, immunohistochemistry and molecular) studies were performed. In 2019 cytological samples from about 8.800 patients have been studied, including FNAC, effusions, urine and cervico-vaginal cytology. In 2019 about 20.000 tests of diagnostic immunohistochemistry have been performed, including mainly tumour immunohistological typing, and assessment of tumour prognostic and/or predictive factors. In 2019 about 500 FISH/SISH tests have been performed, mainly in cases of breast and gastric carcinoma (HER2 gene), in cases of lung adenocarcinoma (ALK and ROS1 genes), and in selected cases of 'aggressive' B-cell lymphomas (Bcl2, Bcl6, and c-MYC genes), sarcomas, and

primary CNS tumours. In 2019 the mutational status of about 1000 patients with non small cell lung carcinomas (NSCLC), colorectal adenocarcinomas, metastatic melanoma, and GastroIntestinal Stromal Tumours (GIST) has been studied mainly by Next Generation Sequencing (NGS) procedures, based on different panels of 'target' genes. Furthermore, in 2019 about 500 molecular tests for MGMT promoter gene metilation status and IDH1-IDH2 genes mutational status in primary CNS tumours, BRCA1-BRCA2 somatic mutational status mainly in ovarian cancer, and MSI evaluation mainly in colorectal cancer, have been performed.

Research Activity

Lung cancer We have investigated CytoMatrix as a tool for reliable and simple characterization of lung cancer stem cells from pleural effusion, and we have shown that B4GALT1 is a new candidate to maintain the stemness of lung cancer stem cells. We have participated to the IASLC Lung Cancer Staging Project. We have shown that mutations in the KEAP1-NFE2L2 pathway define a molecular subset of rapidly progressing lung adenocarcinoma with poor prognosis.

Head & Neck tumours We have investigated the presence of human papillomavirus in oral rinses and in oropharyngeal and oral brushings of cancer-free high-risk individuals. We have used the Anyplex II HPV28 assay to detect human papillomavirus in archival samples of oropharyngeal carcinomas. We have tested the presence of high-risk papillomavirus DNA and E6/E7 messenger RNA in healthy individuals at risk for oral infections. We have correlated the human papillomavirus status with intravoxel incoherent motion diffusion-weighted imaging in oropharyngeal squamous cell carcinoma. We have assessed the role of MRI-derived depth of invasion in the clinico-pathological staging of oral tongue squamous cell carcinoma.

C.N.S. tumours We have investigated the role of the kinase inhibitor SI113 in autophagy and in the growth regulation of human glioblastoma cells. We have studied the efficacy of Bevacizumab and of weekly carboplatin in pretreated malignant gliomas. We have investigated the comorbidities in elderly patients with glioblastoma.

Colorectal cancer & Hepatobiliopancreatic tumours We have shown that JAK/Stat5 mediated subtype specific lymphocyte antigen 6 complex locus G6D (LY6G6D) drives mismatch repair proficient colorectal cancer, and that MKK3 sustains cell proliferation and survival through p38DELTA MAPK activation in colorectal cancer. We have shown that HSP90 inhibition drives degradation of FGFR2 fusion proteins in cholangiocarcinoma, and that predictive signatures inform the effective repurposing of Decitabine to treat K-RAS dependent pancreatic ductal adenocarcinoma.

Thymic epithelial tumours. We have contributed to the molecular classification of neuroendocrine tumours of the thymus, and to the International Association for the Study of Lung cancer and Thymic Tumors Staging Project for the TNM stage classification of thymic tumors.

Urological & Gynecological tumours We have reported organoids as a new model for improving regenerative medicine and cancer personalized therapy in renal diseases. We have investigated the prognostic significance of positive peritoneal cytology in endometrial cancer and its correlations with L1-CAM biomarker

Publications

1. Annovazzi A, Faiella A, Pescarmona E, Sanguineti G, Sciuto R. Asymptomatic Metastasis to Thyroid Cartilage Detected by 18F-Choline and 64Cu-PSMA PET/CT as a Single Site of Disease Relapse in a Patient with Castration-Resistant Prostate Carcinoma. Clin.Nucl.Med. 2019 10/17; : 10.1097/RLU.0000000000002786a IF:6.703.
2. Bravo E, Franchin T, Santoro F, Conti L, Carrara S, Marino M, Di Caro A, Cigliana G, Mandoj C, Baselice S, Daniele N, Giampaoli S, Quintarelli C, Salerno M, Zinno F, Russo G, Errico MC, Minghetti L, Ricciardi W, Napolitano M. The Biological Resources and Molecule Archives Organization: Turn a Need into an Opportunity for the Smart Specialization Strategy of the Lazio Region. Recenti Prog.Med. 2019 Feb; 110(2): 68a IF:NO IF.

3. Bruschini S, di Martino S, Pisanu ME, Fattore L, De Vitis C, Laquintana V, Buglioni S, Tabbi E, Cerri A, Visca P, Alessandrini G, Facciolo F, Napoli C, Trombetta M, Santoro A, Crescenzi A, Ciliberto G, Mancini R. CytoMatrix for a Reliable and Simple Characterization of Lung Cancer Stem Cells from Malignant Pleural Effusions. J.Cell.Physiol. 2019 Aug 9; a IF:4.522.
4. Carboni F, Federici O, Giofre M, Diodoro M, Valle M. Recurrence of Gallbladder Carcinoma 12 Years After Laparoscopic Cholecystectomy. Clin.Res.Hepatol.Gastroenterol. 2019 Feb; 43(1): e1a IF:2.807.
5. Carboni F, Valle M, Covello R. Gastric Hybrid schwannoma/perineurioma. Cirugia Espanola. 2019 a IF:0,835.
6. Carboni F, Valle M, Federici O, Covello R, Garofalo A. Giant Primary Retroperitoneal Dedifferentiated Liposarcoma. J.Gastrointest.Surg. 2018 Jul; 23(7): 1521a IF:2.686.
7. Carboni F, Valle M, Russo A. Mixed Adenoneuroendocrine Carcinoma of the Cecum. Clin.Res.Hepatol.Gastroenterol. 2019 Mar 7; a IF:2.807.
8. Carboni F, Covello R, Bertini L, Valle M. Uncommon Retroperitoneal Tumour: Follicular Dendritic Cell Sarcoma. Acta Chir.Belg. 2019 11/12; : 1a IF:0.521.
9. Carboni F, Marandino F, Valle M. Late Isolated Subcutaneous Metastasis from Colon Cancer. ANZ J.Surg. 2019 11; 89(11): E523a IF:1.605.
10. Chiappetta M, Marino M, Facciolo F. Unique Case of Atypical Type A Thymoma with Vertebral Metastasis and High 18-Fluorodeoxyglucose Avidity. ANZ J.Surg. 2019 Oct; 89(10): E450a IF:1.605.
11. Cosimelli M, Ursi P, Mancini R, Pattaro G, Perri P, Parrino C, De Peppo V, Diodoro MG, Balla A, Grazi GL. Organ-Saving Surgery for Rectal Cancer After Neoadjuvant Chemoradiation: Analysis of Failures and Long-Term Results. J.Surg.Oncol. 2019 12/01; : 10.1002/jso.25794a IF:3.114.
12. Costantini M, Tuderti G, Minisola F, Pompeo V, Sentinelli S, Amoreo CA, Vallati G, Poeta ML, Gallucci M, Simone G. Metachronous Isolated Splenic Metastasis in a Young Patient with Renal Cell Carcinoma: Case Report and Literature Review. Urology. 2019 May; 127: 13a IF:1.861.
13. De Angeli M, Carosi M, Vizza E, Corrado G. Sister Mary Joseph's Nodule in Endometrial Cancer: A Case Report and Review of the Literature. Journal of Cancer Research and Therapeutics. 2019 Oct; 15(6): 1408a IF:1.392.
14. De Vitis C, Corleone G, Salvati V, Ascenzi F, Pallocca M, De Nicola F, Fanciulli M, di Martino S, Bruschini S, Napoli C, Ricci A, Bassi M, Venuta F, Rendina EA, Ciliberto G, Mancini R. B4GALT1 is a New Candidate to Maintain the Stemness of Lung Cancer Stem Cells. Journal of Clinical Medicine. 2019 11/09; 8(11): 1928a IF:5.688.
15. Di Benedetto A, Ercolani C, Pizzuti L, Angelucci D, Sergi D, Marinelli C, Iezzi L, Sperati F, Terrenato I, Mazzotta M, Mariani L, Vizza E, Paoletti G, Tomao S, Maugeri-Sacca M, Barba M, Tinari N, Natoli C, Ciliberto G, Grassadonia A, Vici P. Prognostic Relevance of DNA Damage and Repair Biomarkers in Elderly Patients with Hormone-Receptor-Positive Breast Cancer Treated with Neoadjuvant Hormone Therapy: Evidence from the Real-World Setting. Ther.Adv.Med.Oncol. 2019 Aug 18; 11: 1758835919853192a IF:5.670.
16. Dinter H, Bohnenberger H, Beck J, Bornemann-Kolatzki K, Schutz E, Kuffer S, Klein L, Franks TJ, Roden A, Emmert A, Hinterthaner M, Marino M, Brcic L, Popper H, Weis CA, Pelosi G, Marx A, Strobel P. Molecular Classification of Neuroendocrine Tumors of the Thymus. J.Thorac.Oncol. 2019 Aug; 14(8): 1472a IF:12.460.
17. Donà MG, Pichi B, Rollo F, Benevolo M, Latini A, Laquintana V, Pellini R, Colafigli M, Frasca M, Giuliani MCristaudo A. Human Papillomavirus Detection in Matched Oral Rinses, Oropharyngeal and Oral Brushings of Cancer-Free High-Risk Individuals. Oral Oncology. 2019 April 2019; 911.3.730.
18. Edwards JG, Chansky K, van Schil P, Nicholson AG, Boubia S, Brambilla E, Donnington J, Galateau-SallÃ© F, Hoffman H, Infante M, Marino M, Marom E, Nakajima J, Ostrowski M, Travis WD, Tsao MS, Yatabe Y, Giroux DJ, Shemanski L, Crowley J, Krasnik M, Asamura H, Rami-Porta R, International Association for the Study of Lung Cancer Staging and Prognostic Factors Committee, Advisory Board Members, and Participating Institutions. The IASLC Lung Cancer Staging Project: Analysis of Resection Margin Status and Proposals for Residual Tumor (R) Descriptors for Non-Small Cell Lung Cancer. Journal of Thoracic Oncology : Official Publication of the International Association for the Study of Lung Cancer. 2019 11/12; : S1556a IF:12.460.

19. Giordano G, Parcesepe P, D'Andrea MR, Coppola L, Di Raimo T, Remo A, Manfrin E, Fiorini C, Scarpa A, Amoreo CA, Conciatori F, Milella M, Caruso FP, Cerulo L, Porras A, Pancione M. JAK/Stat5-Mediated Subtype-Specific Lymphocyte Antigen 6 Complex, Locus G6D (LY6G6D) Expression Drives Mismatch Repair Proficient Colorectal Cancer. J.Exp.Clin.Cancer Res. 2019 Jan 22; 38(1): 28a IF:5.646.
20. Goeman F, De Nicola F, Scalera S, Sperati F, Gallo E, Ciuffreda L, Pallocca M, Pizzuti L, Krasniqi E, Barchiesi G, Vici P, Barba M, Buglioni S, Casini B, Visca P, Pescarmona E, Mazzotta M, De Maria R, Fanciulli M, Ciliberto G, Maugeri-Sacca M. Mutations in the KEAP1-NFE2L2 Pathway Define a Molecular Subset of Rapidly Progressing Lung Adenocarcinoma. J.Thorac.Oncol. 2019 14(11): 1924a IF:12.460.
21. Grassi L, Alfonsi R, Francescangeli F, Signore M, De Angelis ML, Addario A, Costantini M, Flex E, Ciolfi A, Pizzi S, Bruselles A, Pallocca M, Simone G, Haoui M, Falchi M, Milella M, Sentinelli S, Di Matteo P, Stellacci E, Gallucci M, Muto G, Tartaglia M, De Maria R, Bonci D. Organoids as a New Model for Improving Regenerative Medicine and Cancer Personalized Therapy in Renal Diseases. Cell.Death Dis. 2019 Feb 27; 10(3): 201a IF:5.959.
22. Lamberti D, Cristinziano G, Porru M, Leonetti C, Egan JB, Shi CX, Buglioni S, Amoreo CA, Castellani L, Borad MJ, Alema S, Anastasi S, Segatto O. HSP90 Inhibition Drives Degradation of FGFR2 Fusion Proteins: Implications for Treatment of Cholangiocarcinoma. Hepatology. 2019 Jan; 69(1): 131-142.a IF:14.971.
23. Latini A, Alei L, Covello R, Cristaudo A, Colafigli M, Dona MG, Orsini D, Morrone A, Pellini R, Pichi B. Tonsillar Kaposi Sarcoma in an HIV-Negative Patient. Aids. 2019 Jun 1; 33(7): 1263a IF:4.499.
24. Lattanzio R, Iezzi M, Sala G, Tinari N, Falasca M, Alberti S, Buglioni S, Mottolese M, Perracchio L, Natali PG, Piantelli M. PLC-Gamma-1 Phosphorylation Status is Prognostic of Metastatic Risk in Patients with Early-Stage Luminal-A and -B Breast Cancer Subtypes. BMC Cancer. 2019 Jul 30; 19(1): 747a IF:2.933.
25. Marchesi F, Pimpinelli F, Di Domenico EG, Renzi D, Gallo MT, Regazzo G, Rizzo MG, Gumenyuk S, Toma L, Marino M, Cordone I, Cantonetti M, Liberati AM, Montanaro M, Ceribelli A, Prignano G, Palombi F, Romano A, Papa E, Pisani F, Spadea A, Arcese W, Ensoli F, Mengarelli A. Association between CMV and Invasive Fungal Infections After Autologous Stem Cell Transplant in Lymphoproliferative Malignancies: Opportunistic Partnership Or Cause-Effect Relationship? Int.J.Mol.Sci. 2019 Mar 19; 20(6): E1373 [pii]a IF:4.183.
26. Matteoni S, Abbruzzese C, Matarrese P, De Luca G, Mileo AM, Miccadei S, Schenone S, Musumeci F, Haas TL, Sette G, Carapella CM, Amato R, Perrotti N, Signore M, Paggi MG. The Kinase Inhibitor SI113 Induces Autophagy and Synergizes with Quinacrine in Hindering the Growth of Human Glioblastoma Multiforme Cells. J.Exp.Clin.Cancer Res. 2019 May 17; 38(1): 202a IF:5.646.
27. Mottini C, Tomihara H, Carrella D, Lamolinara A, Iezzi M, Huang JK, Amoreo CA, Buglioni S, Manni I, Robinson FS, Minelli R, Kang Y, Fleming JB, Kim MP, Bristow CA, Trisciuoglio D, Iuliano A, Del Bufalo D, di Bernardo D, Melisi D, Draetta GF, Ciliberto G, Carugo A, Cardone L. Predictive Signatures Inform the Effective Repurposing of Decitabine to Treat K-RAS-Dependent Pancreatic Ductal Adenocarcinoma. Cancer Res. 2019 Sep 5; a IF:8.378.
28. Nuvoli B, Amadio B, Cortese G, Benedetti S, Antoniani B, Soriani A, Carosi M, Strigari L, Galati R. The Effect of CELLFOOD(TM) on Radiotherapy Or Combined Chemoradiotherapy: Preclinical Evidence. Ther.Adv.Med.Oncol. 2019 Oct 13; 11: 1758835919878347a IF:5.670.
29. Palaia G, Impellizzeri A, Tenore G, Caporali F, Visca P, Del Vecchio A, Galluccio G, Polimeni A, Romeo U. Ex Vivo Histological Analysis of the Thermal Effects Created by a 445-Nm Diode Laser in Oral Soft Tissue Biopsy. Clin.Oral Investig. 2019 11/16; : 10.1007/s00784a IF:2.453.
30. Paolini F, Bonomo C, Terrenato I, Pennetti A, Covello R, Cristalli G, Venuti A. Beta Human Papillomaviruses in Middle Ear Squamous Cell Carcinoma. Oral Oncol. 2019 Mar; 90: 134a IF:3.730.
31. Rollo F, Dona MG, Pichi B, Pellini R, Covello R, Benevolo M. Evaluation of the Anyplex II HPV28 Assay in the Detection of Human Papillomavirus in Archival Samples of Oropharyngeal Carcinomas. Arch.Pathol.Lab.Med. 2019 Sep 11; a IF:4.151.

32. Rollo F, Pichi B, Benevolo M, Giuliani M, Latini A, Lorenzon L, Colafigli M, Frasca M, Pellini R, Cristaudo A, Dona MG. Oral Testing for High-Risk Human Papillomavirus DNA and E6/E7 Messenger RNA in Healthy Individuals at Risk for Oral Infection. Cancer. 2019 Aug 1; 125(15): 2587a IF:6.102.
33. Ruffini E, Fang W, Guerrera F, Huang J, Okumura M, Kim DK, Girard N, BillÃ¨ A, Boubia S, Cangir AK, Detterbeck F, Falkson C, Filosso PL, Giaccone G, Kondo K, Infante M, Lucchi M, Marino M, Marom EM, Nicholson AG, Rimner A, Rami-Porta R, Asamura H, Staging and Prognostic FC, Staging and Prognostic Factors-Thymic,Domain Subcommittee, Staging and Prognostic FS, Members of the AB. The International Association for the Study of Lung Cancer Thymic Tumors Staging Project: The Impact of the Eighth Edition of the Union for International Cancer Control and American Joint Committee on Cancer TNM Stage Classification of Thymic Tumors. Journal of Thoracic Oncology : Official Publication of the International Association for the Study of Lung Cancer. 2019 11/27; : S1556a IF:12.460.
34. Stramucci L, Pranteda A, Stravato A, Amoreo CA, Pennetti A, Diodoro MG, Bartolazzi A, Milella M, Bossi G. MKK3 Sustains Cell Proliferation and Survival through p38DELTA MAPK Activation in Colorectal Cancer. Cell Death & Disease. 2019 11/06; 10(11): 842a IF:5.959.
35. Tanzilli A, Pace A, Fabi A, Telera S, Vidiri A, Carosi M, Terrenato I, Koudriavtseva T, Boccaletti R, Villani V. Neurocognitive Evaluation in Older Adult Patients Affected by Glioma. J Geriatr Oncol. 2019 a IF:3.164 .
36. Vidiri A, Marzi S, Gangemi E, Benevolo M, Rollo F, Farneti A, Marucci L, Spasiano F, Sperati F, Di Giuliano F, Pellini R, Sanguineti G. Intravoxel Incoherent Motion Diffusion-Weighted Imaging for Oropharyngeal Squamous Cell Carcinoma: Correlation with Human Papillomavirus Status. Eur.J.Radiol. 2019 Aug 13; 119: 108640a IF:2.948.
37. Vidiri A, Minosse S, Piludu F, Pellini R, Cristalli G, Kayal R, Carlino G, Renzi D, Covello R, Marzi S. Cervical Lymphadenopathy: Can the Histogram Analysis of Apparent Diffusion Coefficient Help to Differentiate between Lymphoma and Squamous Cell Carcinoma in Patients with Unknown Clinical Primary Tumor? Radiol.Med. 2019 Jan; a IF:1.420.
38. Vidiri A, Panfili M, Boellis A, Cristalli G, Gangemi E, Pellini R, Marzi S, Covello R. The Role of MRI-Derived Depth of Invasion in Staging Oral Tongue Squamous Cell Carcinoma: Inter-Reader and Radiological-Pathological Agreement. Acta Radiol. 2019 Jul 18; : 284185119862946a IF:1.586.
39. Villani V, Fabi A, Tanzilli A, Pasqualetti F, Lombardi G, Vidiri A, Gonnelli A, Molinari A, Cantarella M, Bellu L, Terrenato I, Carosi M, Maschio M, Telera SM, Carapella CM, Cognetti F, Paiar F, Zagonel V, Pace A. A Multicenter Real-World Study of Bevacizumab in Heavily Pretreated Malignant Gliomas: Clinical Benefit is a Plausible End Point? Future Oncol. 2019 Apr 12; 15(15): 1717-1727a IF:2.279.
40. Villani V, Pace A, Vidiri A, Tanzilli A, Sperati F, Terrenato I, Mariantonia C, Casini B, Metro G, Maschio M, Tatiana K, Cognetti F, Fabi A. Phase II Study of Weekly Carboplatin in Pretreated Adult Malignant Gliomas. J.Neurooncol. 2019 Aug; 144(1): 211a IF:3.129.
41. Villani V, Tanzilli A, Telera SM, Terrenato I, Vidiri A, Fabi A, Zucchella C, Carapella CM, Marucci L, Casini B, Carosi M, Oppido PM, Pace A. Comorbidities in Elderly Patients with Glioblastoma: A Field-Practice Study. Future Oncol. 2019 Jan 18; a IF:2.279.
42. Vizza E, Mancini E, Laquintana V, Loria R, Carosi M, Baiocco E, Cicchillitti L, Piaggio G, Patrizi L, Sperduti I, Zampa A, Cutillo G, Falcioni R, Corrado G. The Prognostic Significance of Positive Peritoneal Cytology in Endometrial Cancer and its Correlations with L1-CAM Biomarker. Surg.Oncol. 2019 Mar; 28: 151a IF:3.000.
43. Zizza P, Dinami R, Porru M, Cingolani C, Salvati E, Rizzo A, D'Angelo C, Petti E, Amoreo CA, Mottolese M, Sperduti I, Chambery A, Russo R, Ostano P, Chiorino G, Blandino G, Sacconi A, Cherfils-Vicini J, Leonetti C, Gilson E, Biroccio A. TRF2 Positively Regulates SULF2 Expression Increasing VEGF-A Release and Activity in Tumor Microenvironment. Nucleic Acids Res. 2019 Apr 23; 47(7): 3365a IF:11.147.

MEDICAL PHYSICS AND EXPERT SYSTEMS UNIT

Head: Dr. Lidia Strigari, Medical Physicist
Interim head from July 1st 2019 Dr. Valeria Landoni, Medical Physicist

Staff

Vicente Bruzzaniti, Medical Physicist
Marco D'Andrea, Medical Physicist
Giuseppe Iaccarino, Medical Physicist
Simona Marzi, Medical Physicist
Pedro Luis Ordonez, Medical Physicist
Antonella Soriani, Medical Physicist
Sara Ungania, Medical Physicist, contractor
Giampiero Carlino, Technician
Sandro Carpino, Technician
Stefano Luppino, Technician
Sandro Nocentini, Technician
Francesco Quagliani, Technician
Mariola Downar, Technician
Emiliano Loi, Fellow, Physicist in training
Marica Masi, Fellow, Physicist in training
Elena Solfaroli Camillocci, Fellow, Physicist in training
Kapis Otieno, Physicist in training

Mission

The Medical Physics Department (MP Dpt) collaborates with different departments of the hospital to ensure patient safety and to lower clinical risk. Its activities are addressed to reduce the undue dose to patients, workers and environment according to national and international indications and to optimize the technical aspects in all the activities that are based also on the use of other physical agents, such as magnetic resonance, ultrasounds and lasers. The MP Dpt takes part to the installation, commissioning and acceptance testing of high technology equipment and acts to improve diagnostic accuracy and treatment precision through the implementation of quality assurance protocols, the carrying out of checks and measurements, the continuous optimization and revision of procedures. The MP Dpt conducts research activities in the field of diagnosis and treatment of cancer giving its perspective to the clinical team by means of its knowledge in imaging, radiological physics and radiobiological sciences

Clinical Activity

The MP Dpt staff daily develops personalized radiotherapy treatment plans for patients including conventional and high dose and high precision radiotherapy and intra-operative radiotherapy, while in nuclear medicine treatments the MP Dpt staff performs patient-specific dosimetry, with the aim of improving tumor control while sparing normal tissues. Dosimetry checks are performed on a daily basis and quality assurance programs are routinely carried out for the activities of Radiotherapy Dpt, Nuclear Medicine Dpt and Diagnostic Dpt. Support is given daily within many aspects of technical managing of clinical procedures. The MP Dpt staff also takes part into the conceiving and drawing up of many of clinical protocols giving its contribution from the physicist perspective to novel treatment strategies and techniques. Physicists of the MP dept often participate at HT (high technology) tenders collaborating to evaluate proposals. MP Dpt ensures radioprotection of patients and workers, thirdly part (familiars, care givers and population in general) and environment from physical agents. The MP Dpt provides educational programs. Since 2009, the MP Dpt is ISO 9001 certified.

Research Activity

The MP Dpt is involved in research activities related to

- Participating to radiotherapy clinical trials and performing data analysis of clinical and dosimetric results.
- Personalized dosimetry in selective radiation therapy with Y-90 for treatment of hepatic lesions. Personalized dosimetry in neuroendocrine tumors by Lu-177 dotatate.

Implementation of a home-made software for personalized dosimetry in nuclear medicine.

- Novel CT dosimetry.
- Radiomics in the response to treatment of Melanoma.
- Study and development of methods for evaluating the observer's performance in radiology.
- Optimization PROcesses in RAdiotherapy: clinical and dosimetric audits (OPRORA) Project Code: RF-2016 02362662 (Ministero Salute), Cod. IFO 20.01.R.13 RF. Co-PI: A. Soriani
- Early Diffusion Weighted Magnetic Resonance Imaging Changes to Predict Tumor Response to Chemoradiotherapy in HN Cancer. AIRC project (n° 17028). Co-investigator: S.Marzi
- Development and optimization of a novel system to deliver hyperthermia for the treatment of sarcoma. Lazioinnova cod. IFO 18/14/R/29 PI: A. Soriani
- Development of a real time system for the reporting and collection of data to be used to reconstruct the dose to the operator in unexpected exposure events in nuclear medicine. Progetto BRiC, INAIL, SIREN: Co-investigator V. Landoni
- Techniques for the evaluation of the dose to lenses in workers exposed to ionization radiation in the medical field, modeling of biological effects and strategies for risk reduction. Progetto BRiC, INAIL: PI V. Bruzzaniti

Dr Soriani is member of the WG on IORT (intraoperative radiation therapy), ISS

Dr Marzi is member of the WG "Quantificazione, interconfronti e assicurazione di qualità in RM", AIFM, Associazione Italiana Fisica Medica.

Dr Landoni is member of the Scientific Committee of the AIFM, Associazione Italiana Fisica Medica

Dr Landoni is member of the Editorial Board of Physica Medica, Europ Journ of MedPhys

Publications

1. Marconi R, Serafini A, Giovanetti A, Bartoleschi C, Pardini MC, Bossi G, Strigari L. Cytokine Modulation in Breast Cancer Patients Undergoing Radiotherapy: A Revision of the Most Recent Studies. Int J Mol Sci. 2019 Jan 17;20(2). pii: E382. doi: 10.3390/ijms20020382. Review. PubMed PMID: 30658426; PubMed Central PMCID: PMC6359111. IF 4.183
2. Loria R, Giliberti C, Bedini A, Palomba R, Caracciolo G, Ceci P, Falvo E, Marconi R, Falcioni R, Bossi G, Strigari L. Very low intensity ultrasounds as a new strategy to improve selective delivery of nanoparticles-complexes in cancer cells. J Exp Clin Cancer Res. 2019 Jan 3;38(1):1. doi: 10.1186/s13046-018-1018-6. PubMed PMID: 30606223; PubMed Central PMCID: PMC6318873. IF 5.646
3. Esposito M, Masi L, Zani M, Doro R, Fedele D, Garibaldi C, Clemente S, Fiandra C, Giglioli FR, Marino C, Orsingher L, Russo S, Stasi M, Strigari L, Villaggi E, Mancosu P. SBRT planning for spinal metastasis: indications from a large multicentric study. Strahlenther Onkol. 2019 Mar;195(3):226-235. doi: 10.1007/s00066-018-1383-2. Epub 2018 Oct 23. PubMed PMID: 30353349. IF 2.717
4. Vahabi M, Pulito C, Sacconi A, Donzelli S, D'Andrea M, Manciocco V, Pellini R, Paci P, Sanguineti G, Strigari L, Spriano G, Muti P, Pandolfi PP, Strano S, Safarian S, Ganci F, Blandino G. miR-96-5p targets PTEN expression affecting radio-chemosensitivity of HNSCC cells. J Exp Clin Cancer Res. 2019 Mar 29;38(1):141. doi: 10.1186/s13046-019-1119-x. PubMed PMID: 30925916; PubMed Central PMCID: PMC6440033. IF 5.646
5. Botticelli A, Salati M, Di Pietro FR, Strigari L, Cerbelli B, Zizzari IG, Giusti R, Mazzotta M, Mazzuca F, Roberto M, Vici P, Pizzuti L, Nuti M, Marchetti P. A nomogram to predict survival in non-small cell lung cancer patients treated with nivolumab. J Transl Med. 2019 Mar 27;17(1):99. doi: 10.1186/s12967-019-1847-x. PubMed PMID: 30917841; PubMed Central PMCID: PMC6437908. IF 4.098
6. Vidiri A, Panfili M, Boellis A, Cristalli G, Gangemi E, Pellini R, Marzi S, Covello R. The role of MRI-derived depth of invasion in staging oral tongue squamous cell carcinoma: inter-reader and radiological-pathological agreement. Acta Radiol. 2020 Mar;61(3):344-352. IF 1.823

7. De Angelis C, Ampollini A, Bazzano G, Della Monaca S, Ghio F, Giuliani F, Lucentini M, Montereali RM, Nenzi P, Notaro C, Placido C, Piccinini M, Ronsivalle C, Santavenere F, Soriani A, Spurio A, Strigari L, Surrenti V, Trinca E, Vadrucci M, Cisbani E, Picardi L. The TOP-IMPLART proton linear accelerator: interim characteristics of the 35 MeV beam. Radiat Prot Dosimetry. 2019 May 29. pii: ncz142. doi: 10.1093/rpd/ncz142. [Epub ahead of print]. PMID: 31141142. IF 0.831
8. Strigari L, Minosse S, D'Alessio D, Farina L, Cavagnaro M, Cassano B, Pinto R, Vallati G, Lopresto V. Microwave thermal ablation using CT-scanner for predicting the variation of ablated region over time: advantages and limitations. Phys Med Biol. 2019 May 31;64(11):115021. doi: 10.1088/1361-6560/ab1a67. PubMed PMID: 30995620. IF 3.030
9. Nuvoli B, Amadio B, Cortese G, Benedetti S, Antoniani B, Soriani A, Carosi M, Strigari L, Galati R. The effect of CELLFOOD(TM) on radiotherapy or combined chemoradiotherapy: preclinical evidence. Ther Adv Med Oncol. 2019 Oct 13;11:1758835919878347. doi: 10.1177/1758835919878347. eCollection 2019. PubMed PMID: 31662796; PubMed Central PMCID: PMC6792276. IF 5.670
10. Vidiri A, Marzi S, Gangemi E, Benevolo M, Rollo F, Farneti A, Marucci L, Spasiano F, Sperati F, Di Giuliano F, Pellini R, Sanguineti G. Intravoxel incoherent motion diffusion-weighted imaging for oropharyngeal squamous cell carcinoma: Correlation with human papillomavirus Status. Eur J Radiol. 2019 Oct;119:108640. IF 2.843
11. Pinzi V, Landoni V, Cattani F, Lazzari R, Jereczek-Fossa BA, Orecchia R. IMRT and brachytherapy comparison in gynaecological cancer treatment: thinking over dosimetry and radiobiology. Ecancermedicalscience. 2019 Dec 17;13:993. doi: 10.3332/ecancer.2019.993. eCollection 2019. PMID: 32010217. IF 1.12

NUCLEAR MEDICINE UNIT

Head: Dr. Rosa Sciuto, MD

Staff

Alessio Annovazzi, MD
Serenella Bergomi, MD
Pasquale Iannantuono, MD
Costanza Mazzone, MD
Rosella Pasqualoni, MD
Sandra Rea, MD
Luisa Romano, MD
Silvia Di Traglia, Fellow
Salvatore Annunziata, Fellow
Aura D'Arcangeli, Head Nurse
Gaetano Salviati, Chief Technician

Mission

The mission of the Nuclear Medicine Unit is to perform clinical and research activities in nuclear oncology aiming to the following main objectives:

- Achieve professional exellence both in nuclear diagnostics and in nuclear therapy according national and international standards
- Develope and validate innovative technologies and new radiopharmaceuticals for molecular imaging and molecular target therapy in the context of theranostic models
- Transfer research results into clinical practice and national health system program
- Monitor process influence on final outcome according to a vision of a process-oriented culture and patient's centered care

Clinical Activity

The activities of the Nuclear Medicine Unit focus on clinical research directed towards therapy and diagnostics in main oncology fields. In 2018 over 16.000 therapeutic and diagnostic procedures were performed with approximately 300 cancer radionuclide treatments. Standard of all diagnostic and therapy activities are assured by ISO 9000 and professional quality certification is assured by AIMN-Bureau Veritas.

1. Therapy, as the main field of clinical activities, includes the radionuclide treatment of thyroid carcinoma, liver tumors and bone metastases using both beta emitters and alfa-emitters. The Centre is leader in Italy and Europe in the field of selective internal radiation therapy of liver tumors with more than 950 treatment performed and followed. Biological optimization of radiation dose studies have been performed using new algorithms and integrated imaging to evaluate heterogeneous dose distribution in tumor lesions and to develop personalized therapy plans. Training on innovative treatments with new alfa-emitters radiopharmaceuticals were performed and clinical protocols validated
2. Diagnostics includes: - PET / CT imaging with FDG and non FDG tracer and in particular the Centre is leader in F-Choline PET imaging of prostate cancer and FDG PET imaging of musculoskeletal tumors ; - all traditional planar and SPET oncological scan (mainly sentinel node mapping, cardiac gated-SPET and 131I whole –body scan) and state of art SPET/CT imaging.

Research Activity

Research activities of the Nuclear Medicine Unit focus on radionuclide therapy and molecular imaging SPET/CT and PET/CT in different tumors (thyroid, head and neck, sarcoma, gynecological and urological tumors, lymphoma, breast and lung cancer, liver tumors) aiming to improve early diagnosis, biological characterization and response monitoring, biological volume contouring to guide radiotherapy.

Main currently specific topic of research includes:

- new PET radiopharmaceuticals (64-Cu and 64 Cu-PSMA) performance and safety evaluation in prostate cancer
- F-choline diagnostic performance in early prostate cancer recurrence detection at low PSA values
- clinical impact of SPET/CT vs. to standard planar or SPET protocols in oncology

- comparison of clinical impact and cost-effectiveness of different available diagnostic technologies of bone imaging (bone scintigraphy vs. F-choline PET)
- role of FDG PET in clinical management of musculoskeletal tumors
- biodistribution, radiobiological effects and long –term safety studies after treatment with alfa – emitter (223-radium) in metastatic prostate cancer patients and adapted protocols
- role of integrated imaging with 131I SPET/CT and 18F-FDG PET/CT in advanced thyroid carcinoma both for diagnosis than for biological and dosimetric optimization
- identification of specific selective internal radiation therapy with 90Y-microspheres indications in the context of the standard HCC guidelines
- quantitative 3D dosimetry based on hybrid imaging and biomarkers correlation to optimize therapy in HCC patients treated with 90Y-microspheres

PUBLICATIONS

1. Annovazzi A, Anelli V, Zoccali C, Rumi N, Persichetti A, Novello M, Sciuto R, Bertoni F, Ferraresi V, Biagini R. (18)F-FDG PET/CT in the Evaluation of Cartilaginous Bone Neoplasms: The Added Value of Tumor Grading. Ann.Nucl.Med. 2019 Aug 8
2. Annovazzi A, Faiella A, Pescarmona E, Sanguineti G, Sciuto R. Asymptomatic Metastasis to Thyroid Cartilage Detected by 18F-Choline and 64Cu-PSMA PET/CT as a Single Site of Disease Relapse in a Patient with Castration-Resistant Prostate Carcinoma. Clin.Nucl.Med. 2019 10/17; : 10.1097/RLU.0000000000002786°
3. Paladini A, Vallati GE, Beomonte Zobel D, Paladini L, Annovazzi A, Sciuto R, Cappelli F, Borzelli A, Pane F, Negroni D, Cernigliaro M, Galbiati A, Del Sette B, Spinetta M, Guzzardi G, Carriero A, Pizzi G. Delivery of Selective Internal Radiation Therapy Complicated by Variant Hepatic Vascular Anatomy. Radiol.Case Rep. 2019 Mar 23; 14(6): 662a

RADIOTHERAPY UNIT
HEAD: PROF. GIUSEPPE SANGUINETI, MD

STAFF

Pinnarò Paola, MD
Saracino Bianca Maria, MD
Marucci Laura, MD
Petrongari Maria Grazia, MD
Farneti Alessia, MD
Faiella Adriana, MD
Genoveva Ionela Boboc, MD
Di Ridolfi Paolo, Nurse coordinator
Avram Camelia, Nurse
Bigiarini Luciano, Nurse
Mondati Mara, Nurse
Pacella Rossella, Nurse
Petitti Patrizia, Nurse
Giardina Giuseppa Barbara, Nurse
Lunghi Vincenzo, Therapist coordinator
Bedini Fabio, Therapist
Canciani Laura, Therapist
De Luca Francesco, Therapist
Di Giammaria Flavio, Therapist
Gabriele Teresa, Therapist
Labonia Alessandro, Therapist
Mafrica Carmelo, Therapist
Marcelli Francesca, Therapist
Marini Roberto, Therapist
Mei Stefano, Therapist
Musella Giuseppe, Therapist
Pepe Stefano, Therapist
Rispoli Antonio, Therapist
Vorzillo Maria, Therapist
Parodi Laura, Administrative assistant
Moretti Luisa, Administrative assistant
Franzoso Paola, Data manager

MISSION

The Department of Radiotherapy is characterized by experienced professionals and technology that allow the realization of high-precision irradiation techniques such as Intensity Modulated Radiotherapy (IMRT) and Rapid Arc (RA)/Volumetric Modulated Arc Therapy (VMAT), Stereotactic Radiotherapy Surgery (SRS), Stereotactic Body Radiotherapy (SBRT), Image-Guided Radiation Therapy (IGRT). Moreover, respiratory movement control techniques are available to reduce the confounding effect of the position of the target to be irradiated, as well as 'tracking' techniques through the placement of radiopaque fiducials and Cyberknife irradiation. A constant collaboration with the Radiology and Nuclear Medicine allows us to have access to advanced imaging solutions to correctly identify the location of the disease prior to treatment planning, such as multiparametric MRI and novel tracer PET-CT.

Clinical Activity: Clinical activity covers all options of photon-based external beam radiotherapy including IMRT, VMAT, SRS, SBRT, IORT. Moreover, the recent introduction of Cyberknife (CK) allows SRS/SBRT of both intracranial and extracranial lesions (both malignant and benign) with high precision and live motion tracking.

RESEARCH AND CLINICAL ACTIVITY

1. Induction Durvalumab (MEDI4736) & Radiotherapy (RT) for Locally Advanced but Resectable Head and Neck Squamous Cell Carcinomas: A Pilot Study. The study will evaluate the feasibility/activity of upfront Durvalumab-RT before standard of care treatment in patients with locally advanced but resectable HNSCC. RT consists of low dose multifractionated RT (10 Gy in 4 fractions) to the primary tumor site only; Durvalumab at the dose of 1500 mg will be delivered on day 0 of preoperative radiotherapy
    a. Four weeks after preoperative radio-immunotherapy (day 28) patients will undergo surgery.
    b. Patients will be evaluated during both the induction phase and perioperative period for side effects and tolerance. Moreover both clinical and pathological response rates will be investigated.
2. A prospective randomized phase II trial of DCE-MRI hypoxia-targeted boost chemoradiotherapy for head and neck cancer. This is a randomized, prospective, single-institution, phase II trial, planning to enroll 91

patients affected by HNSCC. Patients will undergo a DCE-MRI before treatment (baseline, MR1). Only patients with at least 5cc or more hypoxic volume at the primary site will be considered eligible and randomized between stIMRT and deIMRT. A second DCE-MRI will be performed at 2 weeks into CRT (MR2), and the hypoxic volume will reassessed; in case of a larger than initial hypoxic sub-volume, the IMRT plan in the deIMRT arm will be adapted accordingly. Patients will then be followed for primary tumor response and recurrence. Actuarial Kaplan Meier) local control rates in the two arms will be compared with the log rank test at 2 yrs after treatment completion.

3. Phase I-II study to evaluated feasibility and the effectiveness of SBRT with Linear Accelerator in 3 fractions for low/intermediate risk Prostate cancer: evaluate the feasibility and locoregional toxicity of SBRT in 3 fractions using LINAC; evaluate the effectiveness hypofractionated "extreme" (3 fractions) delivered using SBRT for low /intermediate risk localized prostate cancer.
4. Evaluation of neurotoxicity in cancer patients with multiple (4-10) brain metastases treated with stereotaxic radiation therapy : This is a prospective observational study that aims to evaluate neuro-cognitive toxicity, quality of life and incidence of radionecrosis in patients treated with stereotactic radiation therapy for multiple lesions (from 4 to 10).
5. Radio-induced modifications of lymphoid subpopulations involved in resistance and escape mechanisms to the treatment of localized prostate cancer: This prospective study aims to evaluate the effect of radiotherapy on immuno-regulatory B, plasma cells, NK, T, and T lymphocyte populations in order to evaluate any toxicity effects and selective decrease / increase of the various populations and to correlate these effects with the clinical course of the disease. We hypothesize that the radio-induced effects are extremely early, to justify an investigation already after the first treatment session. Furthermore, we hypothesize that different RT dose fractionation schemes may induce different modifications on cell populations, allowing to identify scheduling that minimizes the risk of induction of immunosuppressive cells.
6. Toxicity and its possible association with the immune response during Radio-Cetuximab therapy in Patients with Squamous Carcinoma of the Head and Neck District, stage III or IV disease. This is a prospective cohort study aimed at assessing the impact of systemic therapy with cetuximab associated with radiation therapy on the burden of acute symptoms of the treatments proposed in locally advanced squamous carcinomas of the cervicocephalic district. It also investigates the possible correlation between activation of the ADCC and skin toxicity. For the objectives, see the statistical considerations.
7. Pilot study evaluating the use of 64Cu-PET / CT total body in patients with recurrence in the prostate lodge visible in mpMR. The study in question has the following objectives:
    a. Primary objective: To evaluate the detection rate of 64Cu-PET / CT of relapses in patients undergoing radical prostatectomy and subsequent biochemical recurrence;
    b. Secondary objectives: To evaluate any change in radiotherapy strategy in terms of lesion delineation and dose distribution planning. Evaluate the performance of both methods (mpMR and 64Cu-PET / TC) in evaluating the response to radiation treatment with or without hormone therapy
8. Single vocal cord stereotactic Radiotherapy for early stage glottis cancer (cTis-1): Prospective phase I-II study to evaluated feasibility and the effectiveness of SBRT for early stage (cTis-1N0M0) glottic cancer.
9. Accelerated Hypofractionated radiotherapy inclusive of nodal radiation after conservative surgery for women whit node-positive breast cancer. Feasibility study. To evaluated acute toxicity of radiotherapy schedule in which therapy was completed in 11 fractions over 3 weeks inclusive of a sequential boos.
10. Longitudinal Evaluation of Intestinal, Haematological and Urinary Toxicity From Pelvic Irradiation for Prostate Cancer (IHU-WPRT-TOX): The aim of this study is to develop predictive models of IMRT-WPRT induced patient-reported intestinal, hematologic and urinary toxicity in PCa treatment.

11. The rationale of the prophylactic irradiation of pelvic lymph-nodes by means of Whole-Pelvis Radiotherapy (WPRT) in prostate cancer (PCa) is to eradicate subclinical lymph-nodal involvement. Even though delivered by means of modern Intensity-Modulated Radiotherapy techniques, WPRT may result in intestinal, hematologic and urinary toxicity severely affecting patients' daily health- related quality-of-life (HRQoL) within the so-called and inadequately investigated Pelvic Radiation Disease.
12. A Randomized, Double-blind, Placebo-controlled Phase 3 Study of JNJ-56021927 in Subjects with High-risk, Localized or Locally Advanced Prostate Cancer Receiving Treatment with Primary Radiation Therapy: To determine if JNJ-56021927 plus gonadotropin releasing hormone (GnRH) agonist in subjects with high-risk, localized or locally advanced prostate cancer receiving primary radiation therapy (RT) results in an improvement of metastasis-free survival (MFS) evaluated by blinded independent central review (BICR)
13. DUE02 - Urinary and Erectile Dysfunction – 02. Validation of predictive toxicity models after radiotherapy treatment for prostate cancer: The prospective observational study (DUE02) proposes to enroll patients with prostate cancer treated with high-dose external radiotherapy and to follow them during follow-up, in order to be able to validate the models developed in the previous study DUE01 on an independent population.
14. Acral Chordoma: a Randomized & Observational study on surgery versus definitive radiation therapy in primary localized disease (SACRO): This study is aimed at estimating the effectiveness of definitive radiotherapy as compared to standard surgical treatment for patients with primary sacral chordoma who are candidates to a complete en-bloc resection, in term of relapse-free- survival (RFS).

Publications

1. Bergamini C, Cavalieri S, Sanguineti G, Farneti A, Licitra L. Treatment of HER2+ Metastatic Salivary Ductal Carcinoma in a Pregnant Woman: A Case Report. Oxford Medical Case Reports. 2019 10/31; 2019(10): omz102a IF:NO IF.
2. Cercato MC, Colella E, Fabi A, Bertazzi I, Giardina BG, Di Ridolfi P, Mondati M, Petitti P, Bigiarini L, Scarinci V, Franceschini A, Sanguineti G, Cognetti F, Cenci C. 2019. "A Narrative Digital Diary Applied to chemo/radiotherapy Treatment to Personalize Patient Care (Pilot Study) in: Abstract Book of the 21th National Congress of Italian Association of Medical Oncology (AIOM)." Abstract. Tumori Journal 105, no. 6 (11/01; 2020/01): 1-216. IF 1.234
3. Gamucci T, Pizzuti L, Natoli C, Mentuccia L, Sperduti I, Barba M, Sergi D, Iezzi L, Maugeri-Sacca M, Vaccaro A, Magnolfi E, Gelibter A, Barchiesi G, Magri V, D'Onofrio L, Cassano A, Rossi E, Botticelli A, Moscetti L, Omarini C, Fabbri MA, Scinto AF, Corsi D, Carbognin L, Mazzotta M, Bria E, Foglietta J, Samaritani R, Garufi C, Mariani L, Barni S, Mirabelli R, Sarmiento R, Graziano V, Santini D, Marchetti P, Tonini G, Di Lauro L, Sanguineti G, Paoletti G, Tomao S, De Maria R, Veltri E, Paris I, Giotta F, Latorre A, Giordano A, Ciliberto G, Vici P. A Multicenter REtrospective Observational Study of First-Line Treatment with PERtuzumab, Trastuzumab and Taxanes for Advanced HER2 Positive Breast Cancer Patients. RePer Study. Cancer.Biol.Ther. 2019 20(2): 192-200a IF:2.879.
4. Krasniqi E, Barchiesi G, Pizzuti L, Mazzotta M, Venuti A, Maugeri-Sacca M, Sanguineti G, Massimiani G, Sergi D, Carpano S, Marchetti P, Tomao S, Gamucci T, De Maria R, Tomao F, Natoli C, Tinari N, Ciliberto G, Barba M, Vici P. Immunotherapy in HER2-Positive Breast Cancer: State of the Art and Future Perspectives. J.Hematol.Oncol. 2019 Oct 29; 12(1): 111a IF:8.731
5. Lee AW, Ng WT, Pan JJ, Chiang CL, Poh SS, Choi HC, Ahn YC, AlHussain H, Corry J, Grau C, Gregoire V, Harrington KJ, Hu CS, Kwong DL, Langendijk JA, Le QT, Lee NY, Lin JC, Lu TX, Mendenhall WM, O'Sullivan B, Ozyar E, Peters LJ, Rosenthal DI, Sanguineti G, Soong YL, Tao Y, Yom SS, Wee JT. International Guideline on Dose Prioritization and Acceptance Criteria in Radiation Therapy Planning for Nasopharyngeal Carcinoma. Int.J.Radiat.Oncol.Biol.Phys. 2019 Jul 2; a IF:6.203.
6. Pizzuti L, Krasniqi E, Barchiesi G, Mazzotta M, Barba M, Amodio A, Massimiani G, Pelle F, Kayal R, Vizza E, Grassadonia A, Tomao S, Venuti A, Gamucci T, Marchetti P, Natoli C, Sanguineti G, Ciliberto

G, Vici P. Eribulin in Triple Negative Metastatic Breast Cancer: Critic Interpretation of Current Evidence and Projection for Future Scenarios. . Journal of Cancer. 2019 10(24): 5903a IF:3.182.

7. Pizzuti L, Giordano A, Michelotti A, Mazzotta M, Natoli C, Gamucci T, De Angelis C, Landucci E, Diodati L, Iezzi L, Mentuccia L, Fabbri A, Barba M, Sanguineti G, Marchetti P, Tomao S, Mariani L, Paris I, Lorusso V, Vallarelli S, Cassano A, Airoldi F, Orlandi A, Moscetti L, Sergi D, Sarobba MG, Tonini G, Santini D, Sini V, Veltri E, Vaccaro A, Ferrari L, De Tursi M, Tinari N, Grassadonia A, Greco F, Botticelli A, La Verde N, Zamagni C, Rubino D, Cortesi E, Magri V, Pomati G, Scagnoli S, Capomolla E, Kayal R, Scinto AF, Corsi D, Cazzaniga M, Laudadio L, Forciniti S, Mancini M, Carbognin L, Seminara P, Barni S, Samaritani R, Roselli M, Portarena I, Russo A, Ficorella C, Cannita K, Carpano S, Pistelli M, Berardi R, De Maria R, Sperduti I, Ciliberto G, Vici P. Palbociclib Plus Endocrine Therapy in HER2 Negative, Hormonal Receptor-Positive, Advanced Breast Cancer: A Real-World Experience. J.Cell.Physiol. 2019 Jun; 234(6): 7708a IF:4.522.
8. Pizzuti L, Krasniqi E, Barchiesi G, Della Giulia M, Izzo F, Sanguineti G, Marchetti P, Mazzotta M, Giusti R, Botticelli A, Gamucci T, Natoli C, Grassadonia A, Tinari N, Iezzi L, Tomao S, Tomao F, Tonini G, Santini D, Astone A, Michelotti A, De Angelis C, Mentuccia L, Vaccaro A, Magnolfi E, Gelibter A, Magri V, Cortesi E, D'Onofrio L, Cassano A, Rossi E, Cazzaniga M, Moscetti L, Omarini C, Piacentini F, Fabbri MA, Scinto AF, Corsi D, Carbognin L, Bria E, La Verde N, Samaritani R, Garufi C, Barni S, Mirabelli R, Sarmiento R, Veltri EM, D'Auria G, Paris I, Giotta F, Lorusso V, Cardillo F, Landucci E, Mauri M, Ficorella C, Roselli M, Adamo V, Ricciardi GRR, Russo A, Berardi R, Pistelli M, Fiorio E, Cannita K, Sini V, D'Ostilio N, Foglietta J, Greco F, Zamagni C, Garrone O, Di Cocco B, Baldini E, Livi L, Desideri I, Meattini I, Sarobba G, Del Medico P, De Tursi M, Generali D, De Maria R, Risi E, Ciliberto G, Sperduti I, Villa A, Barba M, Di Leo A, Vici P. Distinct HR Expression Patterns significantly Affect the Clinical Behavior of Metastatic HER2+ Breast Cancer and Degree of Benefit from Novel Anti-HER2 Agents in the Real World Setting. Int.J.Cancer. 2019 Jul 22; a IF:4.982.
9. Sanguineti G, Giannarelli D, Petrongari MG, Arcangeli S, Sangiovanni A, Saracino B, Farneti A, Faiella A, Conte M, Arcangeli G. Leukotoxicity After Moderately Hypofractionated Radiotherapy Versus Conventionally Fractionated Dose Escalated Radiotherapy for Localized Prostate Cancer: A Secondary Analysis from a Randomized Study. Radiat.Oncol. 2019 Jan 30; 14(1): 23a IF:2.895.
10. Spriano G, Mercante G, Manciocco V, Cristalli G, Sanguineti G, Ferreli F. A New Lateral Cervical Approach for Salvage Total Laryngo-Pharyngectomy. Acta Otorhinolaryngol.Ital. 2019 Feb; 39(1): 61a IF:1.408.
11. Vahabi M, Pulito C, Sacconi A, Donzelli S, D'Andrea M, Manciocco V, Pellini R, Paci P, Sanguineti G, Strigari L, Spriano G, Muti P, Pandolfi PP, Strano S, Safarian S, Ganci F, Blandino G. MiR-96-5p Targets PTEN Expression Affecting Radio-Chemosensitivity of HNSCC Cells. J.Exp.Clin.Cancer Res. 2019 Mar 29; 38(1): 141a IF:5.646
12. Vidiri A, Marzi S, Gangemi E, Benevolo M, Rollo F, Farneti A, Marucci L, Spasiano F, Sperati F, Di Giuliano F, Pellini R, Sanguineti G. Intravoxel Incoherent Motion Diffusion-Weighted Imaging for Oropharyngeal Squamous Cell Carcinoma: Correlation with Human Papillomavirus Status. Eur.J.Radiol. 2019 Aug 13; 119: 108640a IF:2.948.
13. Villani V, Tanzilli A, Telera SM, Terrenato I, Vidiri A, Fabi A, Zucchella C, Carapella CM, Marucci L, Casini B, Carosi M, Oppido PM, Pace A. Comorbidities in Elderly Patients with Glioblastoma: A Field-Practice Study. Future Oncol. 2019 Jan 18; a IF:2.279.

RADIOLOGY UNIT
Head: Dr. Antonello Vidiri, MD

Staff

Anelli Vincenzo MD
Bertini Luca MD
Cappelli Federico MD
Caterino Mauro MD
Ciolina Maria MD
Ferranti Francesca Romana MD
Greco Marcello MD
Greco Laura MD
Kayal Ramy MD
Marsella Annelisa MD
Piacentini Francesca MD
Piludu Francesca MD
Pizzi Giuseppe MD
Saracca Elena MD
Vallati Giulio MD
D'Auria Lorenzo, Radiology Techinician Coordinator
Fodde Francesca, Radiology Techinician Coordinator
Abrugia Maurizio, Radiology Technician
Baldolini Roberto, Radiology Technician
De Leo Rodolfo, Radiology Technician
Dominici Fabrizio, Radiology Technician
Farella Michele, Radiology Technician
Fetonti Gaetano, Radiology Technician
Fringuelli Stefania, Radiology Technician
Gessani Martina, Radiology Technician
Lattanzi Gianluca, Radiology Technician
Longo Anna, Radiology Technician
Morelli Graziella, Radiology Technician
Pandini Roberto, Radiology Technician
Pasqualucci Rita, Radiology Technician
Portieri Fabio, Radiology Technician
Rea Franco, Radiology Technician
Rinaldi Francesco, Radiology Technician
Tomassini Elisa, Radiology Technician
Trotta Simone, Radiology Technician
Sglavo Anna Rita, Radiology Technician
Strino Giulio, Radiology Technician
Colucci Pasquale, Nurse coordinator
Annibali Cristina, Nurse
Cicconardi Alba, Nurse
Del Vecchio Serena, Nurse
Desideri Manuela, Nurse
Fantozzi Roberto, Nurse
Ferraro Matteo, Nurse
Guido Franco, Nurse
Rosi Fabio, Nurse
Schiavone Raffaella, Nurse
Tolu Sebastiano, Nurse
Vita Silvano, Nurse
Boi Cristina, Administrative Collaborator

Giacinti Fausto, Administrative Collaborator
Settembrini Cristina, Administrative Collaborator
Farella Flavia, Administrative Collaborator

Mission

The mission of the Radiology Unit is diagnosis and staging of the tumor, target for surgical and radiotherapy treatments, guide patient stratification, predict and monitor therapeutic efficacy. In the Unit there are two MR at 1.5 T and 3T that permit to obtaine morphologycal and functional imaging, two multidetector CT at 128 and 68 Layers, Ultrasound with color-doppler and with use of contrast-medium, Digital Mammography, Contrast Enhanced Mammography (CESM) and Digital Breast Tomosynthesis (DBT). There is an Interventional Service image-guided for diagnosis and treatment of neoplasms. Topics are: evaluation of head-neck and prostate cancer with multiparametric approaches, pleural mesothelioma, integrated breast diagnostic, neuro-oncology, soft and osseous tumors. Neoplasms of the female pelvic, lung, colon-rectum and onco-hematologic tumors are also assessed by various imaging techiniques. The department is also involved in all diagnostic therapeutic ways (PDTA) and participates in all Disease Management Team (DMT) meetings.

Clinical Activity

The clinical diagnostic activity includes detection, characterization and monitoring of the tumors, utilizing Traditional X-ray, Ultrasound, CT, MR, and Mammography that are performed every day (morning and afternoon) except Saturday afternoon. The Interventional service is open from Monday to Friday except on Wednesdays reserved to Gastroenterology and Digestive Unit. MR unit offers service as functional imaging, diffusion and perfusion, in brain, head-neck, breast and prostate tumors; in the Breast unit is possible to obtaine biopsy image-guided with mammotome, Digital Mammography, and Digital Breast Tomosynthesis (DBT). In US is possible to perform exam with contrast medium infusion in particular in the evaluation of liver lesions. In the Interventional unit are performed biopsy and treatment with thermoablation, radiofrequences and with the use of radionuclide (Sirtex).

Research Activity

- Radiomic: involves the analysis and translation of medical images into quantitative data. High-dimensional imaging data allow an in-depth characterization of tumour phenotypes, with the underlying hypothesis that imaging reflects not only macroscopic but also the cellular and molecular properties of tissues. The objective of radiomics is to generate image-driven biomarkers that serve as instruments that provide a deeper understanding of cancer biology to better aid clinical decisions. We are using this techinique in the different tumors.
- Radiogenomic : field of research aimed at developing tools for non-invasive genotyping by identifying imaging biomarkers for genomic subtypes. Radiogenomic analysis refers to the integration of radiophenothypes and genomic data in order to find radiogenomic association.
- In Head and Neck tumors underwent surgery we investigate the correlation between the parameters identified by perfusion imaging (neo-vascularization) and diffusion (cellularity and stroma) with those of the immunohistochemistry and digital pathology, RNASEQ, and with the immunoprofiling of the cells of the immune system in the periphery.
- Investigate the possibility to obtaine before treatment diagnostic elements predictive of the response to treatment.
- Multiparametric-MR prostate studies before and after therapy, in particular in the evaluation of the alterations after radiotherapy compared with those PET-CT scan.
- Neo-adjuvant treatments using 3T MR with functional sequences (diffusion and perfusion) in the sarcomas, osteosarcoma and Ewing sarcoma.
- Multiparametric MR evaluation of breast cancer underwent to neoadjuvant chemotherapy.
- In the Interventional service we use targeted therapy dosimetry - guided that may significantly impact on patient's specific therapy selection and treatment.

- In the brain tumors we are investigating correlation between MR imaging with those pathological date and molecular profile.

PUBLICATIONS

1. Annovazzi A, Anelli V, Zoccali C, Rumi N, Persichetti A, Novello M, Sciuto R, Bertoni F, Ferraresi V, Biagini R. (18)F-FDG PET/CT in the Evaluation of Cartilaginous Bone Neoplasms: The Added Value of Tumor Grading. Ann.Nucl.Med. 2019 Aug 8; a IF:1.648.
2. Borzelli A, Amodio F, Paladini A, de Magistris G, Giurazza F, Silvestre M, Corvino F, Corvino A, Frauenfelder G, Pane F, Coppola M, Zobel DB, Paladini L, Amodeo EM, Cavaglia E, Niola R. Successful Endovascular Treatment of a Recurrent Giant Celiac Artery Aneurysm. Radiol.Case Rep. 2019 Apr 3; 14(6): 723a IF:NO IF.
3. Carboni F, Bertini L, Valle M. Unusual Incidental Finding: Azygos Vein Continuation. Surgery. 2019 MAY; 165(5): 1050a IF:3.476.
4. Carboni F, Covello R, Bertini L, Valle M. Uncommon Retroperitoneal Tumour: Follicular Dendritic Cell Sarcoma. Acta Chir.Belg. 2019 11/12; : 1a IF:0.521.
5. Costantini M, Tuderti G, Minisola F, Pompeo V, Sentinelli S, Amoreo CA, Vallati G, Poeta ML, Gallucci M, Simone G. Metachronous Isolated Splenic Metastasis in a Young Patient with Renal Cell Carcinoma: Case Report and Literature Review. Urology. 2019 May; 127: 13a IF:1.861.
6. Di Stefano AL, Berzero G, Ducray F, Eoli M, Pichiecchio A, Farina LM, Cuccarini V, Brunelli MC, Diamanti L, Auliac SC, Salmaggi A, Silvani A, Giometto B, Pace A, Vidiri A, Bourdain F, Bastianello S, Ceroni M, Marchioni E. Stroke-Like Events After Brain Radiotherapy: A Large Series with Long-Term Follow-Up. European Journal of Neurology. 2019 APR; 26(4): 639a IF:4.387.
7. Paladini A, Vallati GE, Beomonte Zobel D, Paladini L, Annovazzi A, Sciuto R, Cappelli F, Borzelli A, Pane F, Negroni D, Cernigliaro M, Galbiati A, Del Sette B, Spinetta M, Guzzardi G, Carriero A, Pizzi G. Delivery of Selective Internal Radiation Therapy Complicated by Variant Hepatic Vascular Anatomy. Radiol.Case Rep. 2019 Mar 23; 14(6): 662a IF:NO IF.
8. Pizzuti L, Krasniqi E, Barchiesi G, Mazzotta M, Barba M, Amodio A, Massimiani G, Pelle F, Kayal R, Vizza E, Grassadonia A, Tomao S, Venuti A, Gamucci T, Marchetti P, Natoli C, Sanguineti G, Ciliberto G, Vici P. Eribulin in Triple Negative Metastatic Breast Cancer: Critic Interpretation of Current Evidence and Projection for Future Scenarios. . Journal of Cancer. 2019 10(24): 5903a IF:3.182.
9. Plantone D, Piantadosi C, Ruggieri S, Anelli V, Koudriavtseva T. Tumefactive Demyelinating Lesions and Pregnancy. Neurol.India. 2019 Nov; 67(6): 1519a IF:2.708.
10. Simone G, Tuderti G, Anceschi U, Ferriero M, Costantini M, Minisola F, Vallati G, Pizzi G, Guaglianone S, Misuraca L, Gallucci M. "Ride the Green Light": Indocyanine Green-Marked Off-Clamp Robotic Partial Nephrectomy for Totally Endophytic Renal Masses. Eur.Urol. 2019 Jun; 75(6): 1008a IF:17.298.
11. Strigari L, Minosse S, D'Alessio D, Farina L, Cavagnaro M, Cassano B, Pinto R, Vallati G, Lopresto V. Microwave Thermal Ablation using CT-Scanner for Predicting the Variation of Ablated Region Over Time: Advantages and Limitations. Phys.Med.Biol. 2019 May 31; 64(11): 115021a IF:3.030.
12. Tanzilli A, Pace A, Fabi A, Telera S, Vidiri A, Carosi M, Terrenato I, Koudriavtseva T, Boccaletti R, Villani V. Neurocognitive Evaluation in Older Adult Patients Affected by Glioma. J Geriatr Oncol. 2019 a IF:3.164 .
13. Telera S, Gorgoglione N, Raus L, Vidiri A, Villani V, Pace A, Fabi A, Crispo F, Castiglione M, Sperduti I, Boccaletti R. Open Kyphoplasty for Metastatic Spine Disease: A Retrospective Clinical Series. World Neurosurg. 2019 Jul; 127: e751a IF:1.723.
14. Tuderti G, Brassetti A, Minisola F, Anceschi U, Ferriero M, Leonardo C, Misuraca L, Vallati G, Guaglianone S, Gallucci M, Simone G. Transnephrostomic Indocyanine Green-Guided Robotic Ureteral Reimplantation for Benign Ureteroileal Strictures After Robotic Cystectomy and Intracorporeal

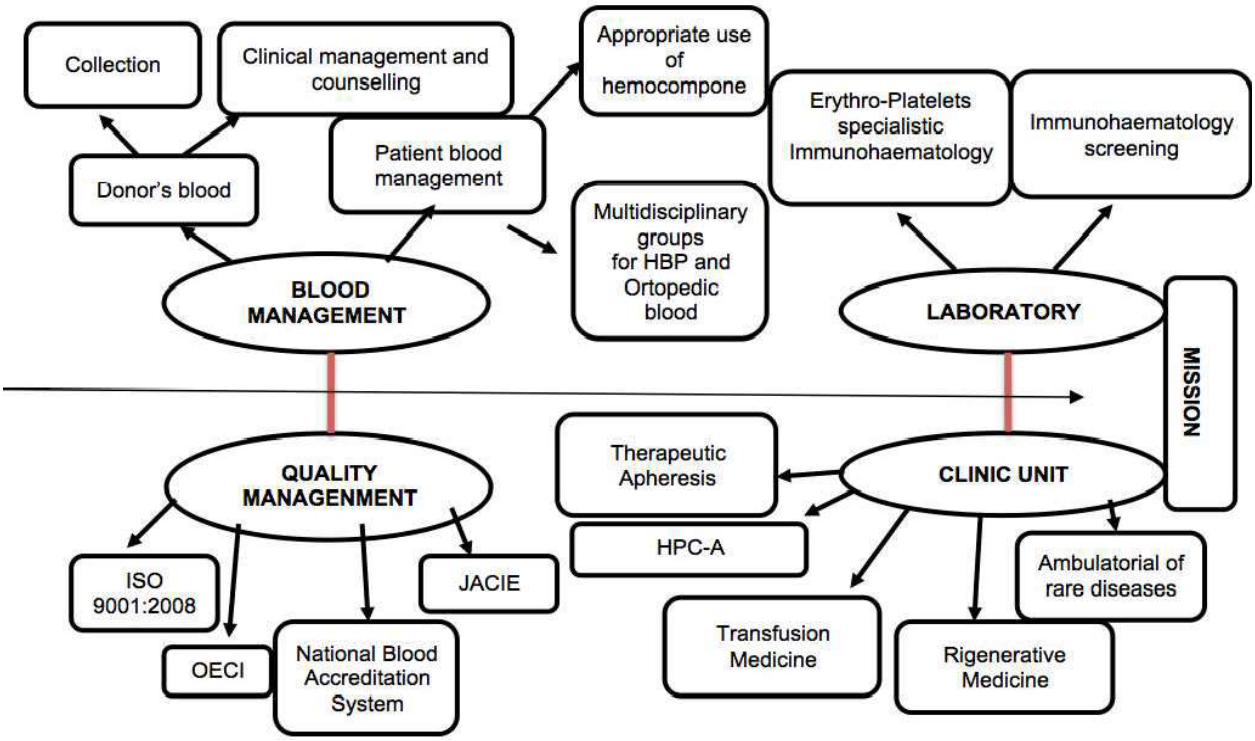
Neobladder: Step-by-Step Surgical Technique, Perioperative and Functional Outcomes. Journal of Endourology. 2019 10; 33(10): 823a IF:2.267.

15. Vidiri A, Marzi S, Gangemi E, Benevolo M, Rollo F, Farneti A, Marucci L, Spasiano F, Sperati F, Di Giuliano F, Pellini R, Sanguineti G. Intravoxel Incoherent Motion Diffusion-Weighted Imaging for Oropharyngeal Squamous Cell Carcinoma: Correlation with Human Papillomavirus Status. Eur.J.Radiol. 2019 Aug 13; 119: 108640a IF:2.948.
16. Vidiri A, Minosse S, Piludu F, Pellini R, Cristalli G, Kayal R, Carlino G, Renzi D, Covello R, Marzi S. Cervical Lymphadenopathy: Can the Histogram Analysis of Apparent Diffusion Coefficient Help to Differentiate between Lymphoma and Squamous Cell Carcinoma in Patients with Unknown Clinical Primary Tumor? Radiol.Med. 2019 Jan; a IF:1.420.
17. Vidiri A, Panfili M, Boellis A, Cristalli G, Gangemi E, Pellini R, Marzi S, Covello R. The Role of MRI-Derived Depth of Invasion in Staging Oral Tongue Squamous Cell Carcinoma: Inter-Reader and Radiological-Pathological Agreement. Acta Radiol. 2019 Jul 18; : 284185119862946a IF:1.586.
18. Villani V, Fabi A, Tanzilli A, Pasqualetti F, Lombardi G, Vidiri A, Gonnelli A, Molinari A, Cantarella M, Bellu L, Terrenato I, Carosi M, Maschio M, Telera SM, Carapella CM, Cognetti F, Paiar F, Zagonel V, Pace A. A Multicenter Real-World Study of Bevacizumab in Heavily Pretreated Malignant Gliomas: Clinical Benefit is a Plausible End Point? Future Oncol. 2019 Apr 12; 15(15): 1717-1727a IF:2.279.
19. Villani V, Pace A, Vidiri A, Tanzilli A, Sperati F, Terrenato I, Mariantonia C, Casini B, Metro G, Maschio M, Tatiana K, Cognetti F, Fabi A. Phase II Study of Weekly Carboplatin in Pretreated Adult Malignant Gliomas. J.Neurooncol. 2019 Aug; 144(1): 211a IF:3.129.
20. Villani V, Tanzilli A, Telera SM, Terrenato I, Vidiri A, Fabi A, Zucchella C, Carapella CM, Marucci L, Casini B, Carosi M, Oppido PM, Pace A. Comorbidities in Elderly Patients with Glioblastoma: A Field-Practice Study. Future Oncol. 2019 Jan 18; a IF:2.279.

TRANSFUSION MEDICINE UNIT
HEAD: DR. MARIA LAURA FODDAI, MD

STAFF

Mafalda de Rienzo, MD
Stefano Iaboni, MD
Silvia De Matteis, MD
Mara Battista, Technician Coordinator
Tonino Federico, Technician
Nadia Coculo, Technician
Patrizio Ceccacci, Technician
Daniela Mozzetti, Technician
Emanuele Fazi, Technician
Maria Piedimonte, Technician
Daniela Di Mambro, Technician
Pina Chichierchia, Biologist
Maria Rosa Piras, Nurse
Patrizia Comuzzi, Nurse
Ilenia Saladini, Nurse



CLINICAL ACTIVITY

The Immunohaematology and Trasfusion Medicine Service is an articulated structure that complies with specific tasks provided by the Italian Legislation in the field of transfusion and supports with diagnostics and therapeutic activities the clinical departments for the treatment of haematological, dermatological, oncological, internal and surgical diseases. The activities are mainly directed to:

- Ensure the constant availability of blood and hemocomponents for the departments' needs;
- Verify the appropriateness of blood and hemocomponents clinical use;
- Manage cryopreserved pheripheral blood stem cells
- Control the quality and safety requirements of the hemocomponents.

In the Unit, there are the following areas of excellence which are intended to be implemented: Therapeutic Apheresis, Regenerative Medicine and Erytro-Platdets Immunohaematology.

The unit of Therapeutic Apheresisrdies on the latest generation cdl separators that allow to perform plasma exchange and photopheresis procedures in autoimmune and dysimmune diseases, in particularly in dermatological patients affected by

Pemphigus Vulgaris, Atopic Dermatitis, Mycosis Fungoid, Psoriasis, etc.

The Regenerative Medicine is a new therapeutic approach aimed at the biological regeneration of tissues instead of replacing them, and finds its most relevant applications in orthopedics, dermatology and corrective medicine.

The Immunohaematological diagnostic is important in oncologic and polytransfused patients to prevent alloimmunization and consist in typing of rare erythrocyte groups, research of anti-erythrocyte and anti-platelets antibodies and identification of auto and allo-antibodies.

Research Activity

Blood derivatives ameliorate myogenic progenitor cells proliferation and differentiation:

In collaboration with Dr. Cesare Gargioli, researcher at the Department of Biology of Rome University Tor Vergata, we are developing a project regarding the effect of human blood derived serum and/or growth factor on human derived perivascular myogenic progenitor/stem cell, namely pericytes. So, the project purpose is to test human blood derivatives in order to supersede problems related to animal medium supplement and cell therapy for clinical application; moreover, working with human derived stem cdls, we are analyzing the effect of human serum and growth factors on the myogenic capabilities of human skeletal muscle derived pericytes.

Bcl-2 promotes recruitment and differentiation of macrophages towards a M2-like phenotype:

In collaboration Dr. Donatella del Bufalo, preclinical models and new therapeutic agents unit - proposal AIRC investigator grant - Spanning bcl-2 functions in melanoma models from 1mcro environment to microRNA modulation.

Evaluation of platelets-rich plasma effectiveness m vulvar lichen sclerosus in collaboration with plastic surgery unit IRCCS San Gallicano.

Publications

1. Tedesco M, Garelli V, Elia F, Chicherchia G, Foddai ML, Latini A, Morrone A, Migliano E. Usefulness of Video Thermography in the Evaluation of Platelet-Rich Plasma Effectiveness in Vulvar Lichen Sclerosus: Preliminary Study. The Journal of Dermatological Treatment. 2019 11/07 : 1a
2. Tedesco M, Pranteda G, Chichierchia G, Paolino G, Latini A, Orsini D, Cristaudo A, Foddai ML, Migliano E, Morrone A. The use of PRP (Platelet-Rich Plasma) in Patients Affected by Genital Lichen Sclerosus: Clinical Analysis and Results. J.Eur.Acad.Dermatol.Venereol. 2019 Feb; 33(2): e58a

PULMUNARY PHYSIOPATHOLOGY UNIT
Head: Dr. Maria Papale, MD

Staff

Eliuccia Mastropasqua, MD
Giorgio Piperno, MD
Two nurses
Annalisa Carolina Damiani, doctor in teaching

Mission

Physiopathology Respiratory Unit has forwarded its traditional mission addressing and programming in research activity through useful objectives aimed at the prevention, diagnosis, cure and rehabilitation of pulmonary diseases, in particular oncology and smoke related diseases. The directives have been:

- primary and secondary prevention in the field of pneumology through education clinical-functional diagnostics
- respiratory therapy and rehabilitation for both inpatients and outpatients
- participation in research program
- participation and organization of courses, conferences and congresses both for reports as well as professional updating.

Regarding the activities and objectives the Unit confirm his commitment to respiratory rehabilitation activities with the aim to improve the quality of life and the respiratory functionality at the same time to reduce the days of stay. The Unit is also dedicate to patients suffering from Interstitial lung disease and IPF (Idiopathic pulmonary fibrosis) rare diseases but frequently verified in our Institute as outcomes of administered therapies. In addition to early diagnosis and therapy of the IPF, it contributes to prevention of related lung cancer.

The smoking cessation clinic (referral Centre for the Observation of Smoke, Alcohol and Addiction, I.S.S.), has continued its own activity helping patients quit smoking even with pharmacologic treatment. In regards to the effort to prevent smoking, the focus has been on educational and counseling for the staff of our Institute.

Clinical Activity

During 2019 about 19.000 services (visits, consultations, instrumental tests and respiratory rehabilitation activity) have been conducted on patients coming from different Units of the Institute. Cooperation, above all, with Thoracic Surgery, for a more accurate identification of surgical risks, has been particularly intense.

There has been a total of 15.900 services conducted for outpatients who came either for pulmonary oncology and other diseases or for to quit smoking or to run respiratory rehabilitation.

Respiratory rehabilitation activity is offered mainly to external patients who either have to undergo major thoracic or abdominal surgery, or have already undergone pulmonary resection for cancer and suffer from COPD. In 2019, about 8.500 services of respiratory rehabilitation have been performed on internal patients and 4.500 services on external patients. In addition, about 100 patients were visited in the internal outpatient clinic of interstitial lung diseases and IPF.

Research Activity

The Unit has taken part along with “Mario Negri Institute for Pharmacological Research” coordinated by the Italian Association of Hospital Pneumologists (AIPO) in: “Studio multicentrico osservazionale sull’utilizzo della sigaretta elettronica in Italia” and during 2019 a manuscript about electronic cigarette use in Italy has been submitted for publication.

The Unit continued to participate in the study BR31 "A phase III prospective double blind placebo

controlled randomized study of adjuvant medi4736 in completely resected non-small cell lung cancer".

The Unit has participated, about the research line 1 "Prevention and early diagnosis of Cancer", in study "Role of the estradiol axis in the carcinogenesis and prevention of mesothelioma".

The Unit has taken part in "Registro asma grave-Studio osservazionale e/o retrospettivo non interventistico, multicentrico, nazionale" coordinated by the Italian Association of Hospital Pneumologists (AIPO).

The Unit is taking part in a national, multicentre observational study:

"The impact on the health status and adherence in a real life setting of italian patients with chronic obstructive pulmonary disease in treatment with a fixed triple association pmdi b.i.d.: a 12-month prospective observational study triple therapy in real life: impact on adherence and health status (TRITRIAL)"

EPIDEMIOLOGY AND CANCER REGISTRY UNIT

Head: Dr. Valerio Ramazzotti, MD

Staff

Maria Cecilia Cercato, MD
Oreste Aronadio, MD
Teresa Borruso, Nurse cancer registrar
Elisabetta Fragalà, Nurse cancer registrar
Emma Santoro, Nurse cancer registrar

Mission

The 'Epidemiology and Cancer Registry' Unit a branch of public health in the oncological discipline framework– aims at the monitoring, control and prevention of cancer. The unit is mainly involved in: descriptive epidemiology based on 'cancer registration'; evaluative epidemiology based on data from the 'regional and national programs for the evaluation of the health care interventions'; 'medical humanities and personalization of care'. Many activities are focused on the specific aims of the Organisation of European Cancer Institutes (OECI), that has recognized the National Cancer Institute 'Regina Elena' as a 'Comprehensive Cancer Centre' in 2015. The unit actively takes part in the ongoing projects included in the 'improvement action plan', and it contributes to the implementation of the Institute's Information and Communication Technology system, aiming at providing easy access and analysis of clinical and research data.

Clinical and Research Activity

Cancer Registration

The Unit has implemented two main activities:

1.Since 2015, in accordance to a regional law establishing the Population Based Cancer Registry of the Lazio region (RTL), the Unit has assumed – under the coordinating action of the Department of Epidemiology Lazio Regional Health Service – the role of "functional unit" for the area of the 'Città metropolitana di Roma', covering a population of over 4.330.000 inhabitants and more than 24.000 estimated incident cases of malignant neoplasms per year. The ongoing registration activity has enabled to input over 41 thousands cases of malignant neoplasms in the RTL database at 31.12.2019.

2.The hospital-based cancer registry (RTO) of the National Cancer Institute 'Regina Elena' was established to define the number, the topography and the morphology of the treated cases per year; to provide statistical reports according to the OECI standards; as collaborative unit of the Clinical Trial Centre IFO, to estimate the number of eligible patients for the clinical trials by specific neoplastic features The ongoing registration activity has enabled to input more than 4,200 cases of breast, lung and colonrectum neoplasms at 31.12.2019. Based on the RTO data, 2 technical reports were submitted to the Scientific Director.

Evaluative epidemiology.

The Unit was involved in the internal audit for: 1) the Regional Outcome Evaluation Program (P.Re.Val.E.); 2) the National Outcome Evaluation Program (PNE). The main objectives are: observational assessment of the efficacy and the effectiveness of health-care interventions; identification of factors within the health-care delivery process that affect outcomes; monitoring levels of care. In this framework, 2 technical reports for the National Cancer Institute "Regina Elena" (Report on P.Re.Val.E. 2019; Report on PNE 2018) were submitted to the Chief Medical Officer.

European Network for European Rare Solid Cancer (EURACAN)

EURACAN will enable a major improvement in the access to excellence diagnosis and treatment for European patients. IFO has been recognized as a ERN member with expertise on more than one rare malignancies. The Unit was actively involved in the ongoing activities, particularly in designing and implementing an institutional database able to collect data from the rare solid cancer patients who are diagnosed and/or treated at the Institute. From

1 January 2018 to 31 Dicember 2019, 1628 patients were registered.

Patient Empowerment Network

Since 2015 the Unit has been involved in developing the project of a network for the empowerment and involvement of patients. The following has been conducted: identification of the ongoing services, processes and resources, aiming at supporting, educating, and empowering cancer patients and their families; promotion of humanistic and narrative medicine implementation. In 2019 the IFO Institutional Working Group for Patient's Centrality, including patients' association representatives, was established. The WG aims to plan activities that involve patients in clinical pathways, in research and education, as projects of humanization of care, designing and developing research projects, information and training programs for patients and carer.

Narrative Medicine

Since 2009 the Unit has been involved in initiatives related to Narrative Medicine. In 2015 a multidisciplinary project named "Raccontami di te" based on the sharing of individual stories started. In order to increase efficacy of care, by improving narrative competence and careful listening, the ongoing project develops a strategy of communication based on promotion of reflexive writing among health care professionals, patients and caregivers, including training courses, text analysis and a story-sharing meeting. In 2017 started the first Italian project applying the DNM (Digital Narrative Medicine) diary in clinical practice for cancer patients: AMENO a pilot study addressing patients in chemotherapy treatment. In 2018 started AMENART study, addressing patients undergoing radiotherapy treatment, and in 2019 started AMENAS addressing young patients treated for bone and soft tissue sarcoma. In 2019 the IMPERO study, evaluating the impact of narration on health care professionals' role, was also conducted. The results were published and reported by oral communications at national courses and meetings.

Publications

1. Cenci C, Cercato M, Mecarelli O. La Medicina Narrativa nell'era Digitale. Scenario, Metodologie e Applicazioni Cliniche in Epilessia e Oncologia in: Relazioni Di Cura nell'era Digitale. 2019 May; : 69.
2. Cercato MC, Colella E, Fabi A, Bertazzi I, Giardina BG, Di Ridolfi P, Mondati M, Petitti P, Bigiarini L, Scarinci V, Franceschini A, Sanguineti G, Cognetti F, Cenci C. 2019. "A Narrative Digital Diary Applied to chemo/radiotherapy Treatment to Personalize Patient Care (Pilot Study) in: Abstract Book of the 21th National Congress of Italian Association of Medical Oncology (AIOM)." Abstract. Tumori Journal 105, no. 6 (11/01; 2020/01): 1-216.
3. Cristaudo A, Petrucci F, Giannarelli D, Cercato MC, Orsini D, Morrone A, Bocca B. Nickel Dermatitis from Earrings 15 Years After EU Directive Implementation: A Clinical-Epidemiological Study and a Market Survey in Rome, Italy. J.Eur.Acad.Dermatol.Venereol. 2019 May 4; a IF:5.113.
4. Maria Cecilia Cercato, Elvira Colella, Alessandra Fabi, Isabella Bertazzi, Virginia Scarinci, Alessandro Franceschini, Cristina Cenci, Francesco Cognetti. 2019. "Applicazione Della Medicina Basata Sulla Narrazione Nel Trattamento Chemioterapico Di Pazienti Oncologici (Studio AMENO: Fase Pilota) in:II Congresso Nazionale Simen. La Complicità Nella Cura. Il Racconto Dei Racconti." Arezzo, 10-12 Maggio 2018.
5. Parodi S, Seniori Costantini A, Crosignani P, Fontana A, Miligi L, Nanni O, Piro S, Ramazzotti V, Rodella S, Tumino R, Vindigni C, Vineis P, Stagnaro E. Childhood Infectious Diseases and Risk of Non-Hodgkin's Lymphoma According to the WHO Classification: A Reanalysis of the Italian Multicenter Case-Control Study. Int.J.Cancer. 2019 May 11; a IF:4.982.

PUBLICATIONS

PUBLICATIONS 2019

1. Abbruzzese C, Matteoni S, Persico M, Ascione B, Schenone S, Musumeci F, Amato R, Perrotti N, Matarrese P, Paggi MG. The Small Molecule SI113 Hinders Epithelial-to-Mesenchymal Transition and Subverts Cytoskeletal Organization in Human Cancer Cells. J.Cell.Physiol. 2019 Dec; 234(12): 22529a **IF: 4.522**.
2. Abstract of ISOLS 2019, 20th General Meeting of the International Society of Limb Salvage, Athens, Greece, September 11-14, 2019
3. Aceto P, Beretta L, Cariello C, Claroni C, Esposito C, Forastiere EM, Guarracino F, Perucca R, Romagnoli S, Sollazzi L, Cela V, Ercoli A, Scambia G, Vizza E, Ludovico GM, Sacco E, Vespasiani G, Scudeller L, Corcione A, Societa Italiana di Anestesia Analgesia Rianimazione e Terapia Intensiva (SIAARTI), Societa Italiana di Ginecologia e Ostetricia (SIGO), and Societa Italiana di Urologia (SIU). Joint Consensus on Anesthesia in Urologic and Gynecologic Robotic Surgery: Specific Issues in Management from a Task Force of the SIAARTI, SIGO, and SIU. Minerva Anestesiol. 2019 Mar 29; 85(8): 871a **IF: 2.840**.
4. Amato J, Platella C, Iachettini S, Zizza P, Musumeci D, Cosconati S, Pagano A, Novellino E, Biroccio A, Randazzo A, Pagano B, Montesarchio D. Tailoring a Lead-Like Compound Targeting Multiple G-Quadruplex Structures. Eur.J.Med.Chem. 2019 Feb; 163: 295a **IF: 4.833**.
5. Amato J, Cerofolini L, Brancaccio D, Giuntini S, Iaccarino N, Zizza P, Iachettini S, Biroccio A, Novellino E, Rosato A, Fragai M, Luchinat C, Randazzo A, Pagano B. Insights into Telomeric G-Quadruplex DNA Recognition by HMGB1 Protein. Nucleic Acids Res. 2019 10/10; 47(18): 9950a **IF: 11.147**.
6. Anceschi U,Simone G. Reply to Franco Gaboardi, Guglielmo Mantica, and Nazareno Suardi's Letter to the Editor Re: Giuseppe Simone, Umberto Anceschi, Gabriele Tuderti, Et Al. Robot-Assisted Partial Adrenalectomy for the Treatment of Conn's Syndrome: Surgical Technique, and Perioperative and Functional Outcomes. Eur Urol 2019;75:811-6. Eur.Urol. 2019 Nov; 76(5): e144a **IF: 17.298**.
7. Anceschi U, Tuderti G, Lugnani F, Biava PM, Malossini G, Luciani L, Cai T, Marsiliani D, Filianoti A, Mattevi D, Costantini M, Misuraca L, Simone G. Novel Diagnostic Biomarkers of Prostate Cancer: An Update. Curr.Med.Chem. 2019 26(6): 1045a **IF: 3.894**.
8. Anele UA, Marchioni M, Yang B, Simone G, Uzzo RG, Lau C, Mir MC, Capitanio U, Porter J, Jacobsohn K, de Luyk N, Mari A, Chang K, Fiori C, Sulek J, Mottrie A, White W, Perdona S, Quarto G, Bindayi A, Ashrafi A, Schips L, Berardinelli F, Zhang C, Gallucci M, Ramirez-Backhaus M, Larcher A, Kilday P, Liao M, Langenstroer P, Dasgupta P, Challacombe B, Kutikov A, Minervini A, Rha KH, Sundaram CP, Hampton LJ, Porpiglia F, Aron M, Derweesh I, Autorino R. Robotic Versus Laparoscopic Radical Nephrectomy: A Large Multi-Institutional Analysis (ROSULA Collaborative Group). World J.Urol. 2019 Feb 7; 37(11): 2439-2450a **IF: 2.761**.
9. Angeli D, Fanciulli M, Pallocca M. Reverse Engineering Cancer: Inferring Transcriptional Gene Signatures from Copy Number Aberrations with ICAro. Cancers (Basel). 2019 Feb 22; 11(2): E256 **IF: 6.162**.
10. Angius G, Tomao S, Stati V, Vici P, Bianco V, Tomao F. Prexasertib, a Checkpoint Kinase Inhibitor: From Preclinical Data to Clinical Development. Cancer Chemother.Pharmacol. 2019 Sep 11; a **IF: 3.008**.
11. Annibali O, Hohaus S, Marchesi F, Cantonetti M, Di Rocco A, Tomarchio V, Di Napoli A, Pelliccia S, Battistini R, Anticoli Borza P, Abruzzese E, Cenfra N, Andriani A, Tesei C, Alma E, Palombi F, Pupo L, Petrucci L, Becilli M, Maiolo E, Bellesi S, Cuccaro A, D'Alo F, Cox MC. The neutrophil/lymphocyte Ratio >/=3.5 is a Prognostic Marker in Diffuse Large B-Cell Lymphoma: A Retrospective Analysis from the Database of the Italian Regional Network 'Rete Ematologica Del Lazio Per i Linfomi' (RELLI). Leuk.Lymphoma. 2019 60(14): 3386a **IF: 2.674**.
12. Annibali O, Tendas A, Pignatelli A, Mauroni R, Carli I, Chierichini A, Tomarchio V, Cupelli L, Saltarelli D, Inzeo A, Surano M, Piedimonte M, Marchesi F, Sollazzo F, Conte E, Viggiani C, Di Piazza F, Tirindelli MC, Arcese W, Quality of Life Working Party of the Rome Transplant Network. Protection during Haempoietic Stem Cell Transplantation: A Survey from the Quality of Life Working Party of the Rome Transplant Network. BMJ Support.Palliat.Care. 2019 Mar; 9(1): 110a **IF: 3.208**.

13. Annovazzi A, Anelli V, Zoccali C, Rumi N, Persichetti A, Novello M, Sciuto R, Bertoni F, Ferraresi V, Biagini R. (18)F-FDG PET/CT in the Evaluation of Cartilaginous Bone Neoplasms: The Added Value of Tumor Grading. Ann.Nucl.Med. 2019 Nov; 33(11): 813a **IF: 1.648**.
14. Annovazzi A, Faiella A, Pescarmona E, Sanguineti G, Sciuto R. Asymptomatic Metastasis to Thyroid Cartilage Detected by 18F-Choline and 64Cu-PSMA PET/CT as a Single Site of Disease Relapse in a Patient with Castration-Resistant Prostate Carcinoma. Clin.Nucl.Med. 2019 10/17; : 10.1097/RLU.0000000000002786a **IF: 6.703**.
15. Antonini G, De Berardinis E, Busetto GM, Del Giudice F, Chung BI, Conti SL, Ferro M, Musi G, Fragas R, De Cobelli O, Sperduti I, Gross MS, Perito PE. Postoperative Vacuum Therapy Following AMS LGX 700(R) Inflatable Penile Prosthesis Placement: Penile Dimension Outcomes and overall Satisfaction. Int,J.Impot.Res. 2019 Feb 11; a **IF: 1.255**.
16. Appetecchia M, Lauretta R, Barnabei A, Pieruzzi L, Terrenato I, Cavedon E, Mian C, Castagna MG, Elisei R, SIE (Italian Society of Endocrinology) Working Group. Epidemiology of Simultaneous Medullary and Papillary Thyroid Carcinomas (MTC/PTC): An Italian Multicenter Study. Cancers (Basel). 2019 Oct 9; 11(10): E1516a **IF: 6.162**.
17. Arrigoni F, Bruno F, Palumbo P, Zugaro L, Zoccali C, Barile A, Masciocchi C. Magnetic Resonance-Guided Focused Ultrasound Surgery Treatment of Non-Spinal Intra-Articular Osteoblastoma: Feasibility, Safety, and Outcomes in a Single-Center Retrospective Analysis. Int,J.Hyperthermia. 2019 36(1): 768a **IF: 3.589**.
18. Arrigoni F, Napoli A, Bazzocchi A, Zugaro L, Scipione R, Bruno F, Palumbo P, Anzidei M, Mercatelli D, Gravina GL, Zoccali C, Ghanouni P, Barile A, Catalano C, Masciocchi C. Magnetic-Resonance-Guided Focused Ultrasound Treatment of Non-Spinal Osteoid Osteoma in Children: Multicentre Experience. Pediatr.Radiol. 2019 Aug; 49(9): 1209a **IF: 2.022**.
19. Ascierto PA, Long GV, Robert C, Brady B, Dutriaux C, Di Giacomo AM, Mortier L, Hassel JC, Rutkowski P, McNeil C, Kalinka-Warzocha E, Savage KJ, Hernberg MM, Lebbe C, Charles J, Mihalcioiu C, Chiarion-Sileni V, Mauch C, Cognetti F, Ny L, Arance A, Svane IM, Schadendorf D, Gogas H, Saci A, Jiang J, Rizzo J, Atkinson V. Survival Outcomes in Patients with Previously Untreated BRAF Wild-Type Advanced Melanoma Treated with Nivolumab Therapy: Three-Year Follow-Up of a Randomized Phase 3 Trial. JAMA Oncol. 2019 Feb 1; 5(2): 187a **IF: 22.416**.
20. Aurisicchio L, Salvatori E, Lione L, Bandini S, Pallocca M, Maggio R, Fanciulli M, De Nicola F, Goeman F, Ciliberto G, Conforti A, Luberto L, Palombo F. Poly-Specific Neoantigen-Targeted Cancer Vaccines Delay Patient Derived Tumor Growth. J.Exp.Clin.Cancer Res. 2019 Feb 14; 38(1): 78a **IF: 5.646**.
21. Bacalini MG, Franceschi C, Gentilini D, Ravaioli F, Zhou X, Remondini D, Pirazzini C, Giuliani C, Marasco E, Gensous N, Di Blasio AM, Ellis E, Gramignoli R, Castellani G, Capri M, Strom S, Nardini C, Cescon M, Grazi GL, Garagnani P. Molecular Aging of Human Liver: An Epigenetic/Transcriptomic Signature. J.Gerontol.A Biol.Sci.Med.Sci. 2019 Jan; a **IF: 4.711**.
22. Bacci L, Aiello A, Ripoli C, Loria R, Pugliese D, Pierconti F, Rotili D, Strigari L, Pinto F, Bassi PF, Mai A, Grassi C, Pontecorvi A, Falcioni R, Farsetti A, Nanni S. H19-Dependent Transcriptional Regulation of beta3 and beta4 Integrins upon Estrogen and Hypoxia Favors Metastatic Potential in Prostate Cancer. Int,J.Mol.Sci. 2019 Aug 17; 20(16): E4012a **IF: 4.183**.
23. Bagnato A,Rosanò L. New Routes in GPCR/ β -Arrestin-Driven Signalling in Cancer Progression and Metastasis. Front Pharmacol. 2019 Jan; **IF: 3.845**.
24. Baldari S, Di Rocco G, Heffern MC, Su TA, Chang CJ, Toietta G. Effects of Copper Chelation on BRAF(V600E) Positive Colon Carcinoma Cells. Cancers (Basel). 2019 May 12; 11(5): E659 **IF: 6.162**.
25. Baldari S, Di Rocco G, Magenta A, Picozza M, Toietta G. Extracellular Vesicles-Encapsulated MicroRNA-125b Produced in Genetically Modified Mesenchymal Stromal Cells Inhibits Hepatocellular Carcinoma Cell Proliferation. Cells. 2019 12/03; 8(12): 1560a **IF: 5.656**.
26. Barchetti G, Simone G, Ceravolo I, Salvo V, Campa R, Del Giudice F, De Berardinis E, Buccilli D, Catalano C, Gallucci M, Catto JWF, Panebianco V. Multiparametric MRI of the Bladder: Inter-Observer Agreement and Accuracy with the Vesical Imaging-Reporting and Data System (VI-RADS) at a Single Reference Center. Eur.Radiol. 2019 Mar 18; 29(10): 5498-5506a **IF: 3.962**.

27. Barchiesi G, Krasniqi E, Barba M, Giulia MD, Pizzuti L, Massimiani G, Ciliberto G, Vici P. Highly Durable Response to Capecitabine in Patient with Metastatic Estrogen Receptor Positive Breast Cancer: A Case Report. Medicine (Baltimore). 2019 Sep; 98(37): e17135a **IF: 1.870**.
28. Barchiesi G, McCartney A, Biagioni C, Siclari O, Rossi L, Pestrin M, Di Leo A, Biganzoli L. Early Triple Negative Breast Cancer: Are we Getting Better Outcomes? A Retrospective Analysis from a Single Institution. Breast J. 2019 Nov; 25(6): 1225a **IF: 2.433**.
29. Barni S, Livraghi L, Gravina A, Martella F, D'Onofrio L, Morritti M, Michelotti A, Vici P, Mentuccia L, Porcu L, Orditura M, Puglisi F, ESEMPiO Group. Feasibility of Eribulin Mesylate in Older Patients with Locally Advanced Or Metastatic Breast Cancer: A Post-Hoc Analysis of the ESEMPiO Study. J.Geriatr.Oncol. 2019 Nov; 10(6): 990a **IF: 3.164**.
30. Barni S, Livraghi L, Morritti M, Vici P, Michelotti A, Cinieri S, Fontanella C, Porcu L, Del Mastro L, Puglisi F, ESEMPiO Study Group. Eribulin in the Treatment of Advanced Breast Cancer: Real-World Scenario from 39 Italian Centers - ESEMPiO Study. Future Oncol. 2019 Jan; a **IF: 2.279**
31. Basile A, Liuni FM, Guidi M, Perugia D, Zoccali C, Baldi J. A Rare Case of First Metatarsal Extrusion: Results of Treatment After 12 Months. J.Foot Ankle Surg. 2019 Dec 14; a IF:1.014.
32. Basile U, Gulli F, Isgrò MA, Napodano C, Pocino K, Santini SA, Gragnani L, Conti L, Rossi E, Cordone I, Zignego AL, Rapaccini GL, Cigliana G, Berruti F, Todi L, Marino M, Di Stasio E. A Novel Biomarker Score for the Screening and Management of Patients with Plasma Cell Proliferative Disorders. Eur.Rev.Med.Pharmacol.Sci. 2019 23(10): 4293a **IF: 2.721**.
33. Bassi R, Bucci EM, Calogero RA, Carminci P, Ciliberto G, Conte P, De Luca M, Corbellini G, Giordano A, Marchionni L, Massaro Giordano G, Parini A, Sbardella G. Look for Methods, Not Conclusions. Cell.Death Dis. 2019 Dec 5; 10(12): 931a **IF: 5.959**.
34. Bazzichetto C, Conciatori F, Falcone I, Cognetti F, Milella M, Ciuffreda L. Advances in Tumor-Stroma Interactions: Emerging Role of Cytokine Network in Colorectal and Pancreatic Cancer. J.Oncol. 2019 May 5; 2019: 5373580a **IF: 2.600**.
35. Bazzichetto C, Conciatori F, Pallocca M, Falcone I, Fanciulli M, Cognetti F, Milella M, Ciuffreda L. PTEN as a Prognostic/Predictive Biomarker in Cancer: An Unfulfilled Promise? Cancers (Basel). 2019 Mar 28; 11(4): 10.3390/cancers11040435a **IF: 6.162**.
36. Bedognetti D, Ceccarelli M, Galluzzi L, Lu R, Palucka K, Samayoa J, Spranger S, Warren S, Wong KK, Ziv E, Chowell D, Coussens LM, De Carvalho DD, DeNardo DG, Galon J, Kaufman HL, Kirchhoff T, Lotze MT, Luke JJ, Minn AJ, Politi K, Shultz LD, Simon R, Thorsson V, Weidhaas JB, Ascierto ML, Ascierto PA, Barnes JM, Barsan V, Bonmareddy PK, Bot A, Church SE, Ciliberto G, De Maria A, Draganov D, Ho WS, McGee HM, Monette A, Murphy JF, Nistico P, Park W, Patel M, Quigley M, Radvanyi L, Raftopoulos H, Rudqvist NP, Snyder A, Sweis RF, Valpione S, Zappasodi R, Butterfield LH, Disis ML, Fox BA, Cesano A, Marincola FM, Society for Immunotherapy of Cancer (SITC) Cancer Immune Responsiveness Task Force and Working Groups. Toward a Comprehensive View of Cancer Immune Responsiveness: A Synopsis from the SITC Workshop. J.Immunother.Cancer. 2019 7(1): 131a **IF: 8.676**.
37. Belleudi V, Rosa AC, Musicco F, Marchetti P, Martini N, Andriani A, Calamia T, Addis A. Appropriate use of Trastuzumab in Lazio Region: Therapeutic Scenarios and Estimation of Possible Savings for the Regional Health Service. Recenti Prog.Med. 2019 Dec; 110(12): 604a
38. Bellissimo T, Tito C, Ganci F, Sacconi A, Masciarelli S, Di Martino G, Porta N, Cirenza M, Sorci M, De Angelis L, Rosa P, Calogero A, Fatica A, Petrozza V, Fontemaggi G, Blandino G, Fazi F. Argonaute 2 Drives miR-145-5p-Dependent Gene Expression Program in Breast Cancer Cells. Cell.Death Dis. 2019 Jan 8; 10(1): 17a **IF: 5.959**.
39. Bergamini A, Cormio G, Ferrandina G, Lorusso D, Giorda G, Scarfone G, Bocciolone L, Raspagliesi F, Tateo S, Cassani C, Savarese A, Breda E, De Giorgi U, Mascilini F, Candiani M, Kardhashi A, Biglia N, Perrone AM, Pignata S, Mangili G. Conservative Surgery in Stage I Adult Type Granulosa Cells Tumors of the Ovary: Results from the MITO-9 Study. Gynecol.Oncol. 2019 Aug; 154(2): 323a **IF: 4.393**.
40. Bergamini C, Cavalieri S, Sanguineti G, Farneti A, Licitra L. Treatment of HER2+ Metastatic Salivary Ductal Carcinoma in a Pregnant Woman: A Case Report. Oxford Medical Case Reports. 2019 10/31; 2019(10): omz102a

41. Bersanelli M, Buti S, De Giorgi U, Di Maio M, Giannarelli D, Pignata S, Banna GL. State of the Art about Influenza Vaccination for Advanced Cancer Patients Receiving Immune Checkpoint Inhibitors: When Common Sense is Not enough. Crit.Rev.Oncol.Hematol. 2019 Jul; 139: 87a **IF: 5.012**.
42. Bertolo R, Simone G, Garisto J, Nakhoul G, Armanyous S, Agudelo J, Costantini M, Tuderti G, Gallucci M, Kaouk J. Off-Clamp Vs on-Clamp Robotic Partial Nephrectomy: Perioperative, Functional and Oncological Outcomes from a Propensity-Score Matching between Two High-Volume Centers. Eur.J.Surg.Oncol. 2019 Jul; 45(7): 1232a **IF: 3.379**.
43. Biacchi D, Accarpio F, Ansaloni L, Macri A, Ciardi A, Federici O, Spagnoli A, Cavaliere D, Vaira M, Sapienza P, Sammartino P. Upfront Debulking Surgery Versus Interval Debulking Surgery for Advanced Tubo-Ovarian High-Grade Serous Carcinoma and Diffuse Peritoneal Metastases Treated with Peritonectomy Procedures Plus HIPEC. J.Surg.Oncol. 2019 Dec; 120(7): 1208a **IF: 3.114**.
44. Biagioli V, Piredda M, Annibali O, Tirindelli MC, Pignatelli A, Marchesi F, Mauroni MR, Soave S, Del Giudice E, Ponticelli E, Clari M, Cavallero S, Monni P, Ottani L, Sica S, Cioce M, Cappucciati L, Bonifazi F, Alvaro R, De Marinis MG, Gargiulo G. Development and Initial Validation of a Questionnaire to Assess Patients' Perception of Protective Isolation Following Haematopoietic Stem Cell Transplantation. Eur.J.Cancer.Care.(Engl). 2019 Mar; : e12955a **IF: 2.421**.
45. Biagioli V, Piredda M, Annibali O, Tirindelli MC, Pignatelli A, Marchesi F, Mauroni MR, Soave S, Del Giudice E, Ponticelli E, Clari M, Cavallero S, Monni P, Ottani L, Sica S, Cioce M, Cappucciati L, Bonifazi F, Alvaro R, De Marinis MG, Gargiulo G. Factors Influencing the Perception of Protective Isolation in Patients Undergoing Haematopoietic Stem Cell Transplantation: A Multicentre Prospective Study. Eur.J.Cancer.Care.(Engl). 2019 28(6): e13148a **IF: 2.421**.
46. Bianchini M, Gargiulo P. L' utilizzo del trabecular bone score nell'acromegalia. Acrocare anno 3, numero 1, marzo 2019
47. Biscaglia L, di Caccamo P, Terrenato I, Arrica MA, Seita A, Campus G, UNRWA group. Oral Health Status and Caries Trend among 12-Year Old Palestine Refugee Students: Results from the UNRWA's Oral Health Surveys 2011 and 2016. BMC Oral Health. 2019 Jul 18; 19(1): 157a **IF: 2.048**.
48. Blandino G, Lo Sardo F. In Vivo Experimental Models Account for Higher Complexity than in Vitro Preclinical Settings in Cancer. J.Thorac.Dis. 2019 Mar; 11(Suppl 3): S461a **IF: 2.027**.
49. Blandino G, Valenti F, Sacconi A, Di Agostino S. Wild Type- and Mutant p53 Proteins in Mitochondrial Dysfunction: Emerging Insights in Cancer Disease. Semin.Cell Dev.Biol. 2019 May 23; a **IF: 5.460**.
50. Blot S, Antonelli M, Arvaniti K, Blot K, Creagh-Brown B, de Lange D, De Waele J, Deschepper M, Dikmen Y, Dimopoulos G, Eckmann C, Francois G, Girardis M, Koulenti D, Labeau S, Lipman J, Lipovestky F, Maseda E, Montravers P, Mikstacki A, Paiva J, Pereyra C, Rello J, Timsit J, Vogelaers D, Abdominal Sepsis Study (AbSeS) group on behalf of the Trials Group of the European Society of Intensive,Care Medicine (Lorella Pelagalli). Epidemiology of Intra-Abdominal Infection and Sepsis in Critically Ill Patients: "AbSeS", a Multinational Observational Cohort Study and ESICM Trials Group Project. Intensive Care Med. 2019 12; 45(12): 1703a **IF: 18.967**
51. Borzelli A, Amodio F, Paladini A, de Magistris G, Giurazza F, Silvestre M, Corvino F, Corvino A, Frauenfelder G, Pane F, Coppola M, Zobel DB, Paladini L, Amodeo EM, Cavaglia E, Niola R. Successful Endovascular Treatment of a Recurrent Giant Celiac Artery Aneurysm. Radiol.Case Rep. 2019 Apr 3; 14(6): 723a
52. Bottari F, Iacobone AD, Boveri S, Preti EP, Franchi D, Mariani L, Preti M, Landoni F, Passerini R, Sandri MT. Onclarity Human Papillomavirus Extended Genotyping in the Management of Cervical Intraepithelial Neoplasia 2+ Lesions. J.Low Genit Tract Dis. 2019 Jan; 23(1): 39a **IF: 1.458**.
53. Botticelli A, Salati M, Di Pietro FR, Strigari L, Cerbelli B, Zizzari IG, Giusti R, Mazzotta M, Mazzuca F, Roberto M, Vici P, Pizzuti L, Nuti M, Marchetti P. A Nomogram to Predict Survival in Non-Small Cell Lung Cancer Patients Treated with Nivolumab. J.Transl.Med. 2019 Mar 27; 17(1): 99a **IF: 4.098**
54. Brassetti A, Cacciamani G, Anceschi U, Ferriero M, Tuderti G, Miranda G, Mastroianni R, Desai M, Aron M, Gill I, Gallucci M, Simone G. Long-Term Oncologic Outcomes of Robot-Assisted Radical Cystectomy (RARC) with Totally Intracorporeal Urinary Diversion (ICUD): A Multi-Center Study. World J.Urol. 2019 Jun 12; a **IF: 2.761**.

55. Brassetti A, Anceschi U, Bertolo R, Ferriero M, Tuderti G, Capitanio U, Larcher A, Garisto J, Antonelli A, Mottire A, Minervini A, Dell'oglio P, Veccia A, Amparore D, Flammia RS, Mari A, Porpiglia F, Montorsi F, Kaouk J, Autorino R, Carini M, Gallucci M, Simone G. Surgical Quality, Cancer Control and Functional Preservation: Introducing a Novel Trifecta for Robot-Assisted Partial Nephrectomy. Minerva Urol.Nefrol. 2019 12/12; a **IF: 2.477**.
56. Brassetti A, Mastroianni R, Simone G. Are we really Seeking for Equivalence?-the Virtue of the Robot is in Technology. Translational Andrology and Urology. 2019 12; 8: S502a **IF: 2.113**.
57. Brassetti A, Tuderti G, Anceschi U, Ferriero M, Guaglianone S, Gallucci M, Simone G. Combined Reporting of Surgical Quality, Cancer Control and Functional Outcomes of Robot-Assisted Radical Cystectomy with Intracorporeal Orthotopic Neobladder into a Novel Trifecta. Minerva Urol.Nefrol. 2019 12; 71(6): 590a **IF: 2.477**.
58. Bravo E, Franchin T, Santoro F, Conti L, Carrara S, Marino M, Di Caro A, Cigliana G, Mandoj C, Baselice S, Daniele N, Giampaoli S, Quintarelli C, Salerno M, Zinno F, Russo G, Errico MC, Minghetti L, Ricciardi W, Napolitano M. The Biological Resources and Molecule Archives Organization: Turn a Need into an Opportunity for the Smart Specialization Strategy of the Lazio Region. Recenti Prog.Med. 2019 Feb; 110(2): 68a
59. Brunetti O, Luchini C, Argentiero A, Tommasi S, Mangia A, Aprile G, Marchetti P, Vasile E, Casadei Gardini A, Scartozzi M, Barni S, Delfanti S, De Vita F, Di Costanzo F, Milella M, Cella CA, Berardi R, Cataldo I, Santini D, Doglioni C, Maiello E, Lawlor RT, Mazzaferro V, Lonardi S, Giuliante F, Brandi G, Scarpa A, Cascinu S, Silvestris N. The Italian Rare Pancreatic Exocrine Cancer Initiative. Tumori. 2019 08; 105(4): 353a **IF: 1.234**.
60. Bruschini S, di Martino S, Pisanu ME, Fattore L, De Vitis C, Laquintana V, Buglioni S, Tabbi E, Cerri A, Visca P, Alessandrini G, Facciolo F, Napoli C, Trombetta M, Santoro A, Crescenzi A, Ciliberto G, Mancini R. CytoMatrix for a Reliable and Simple Characterization of Lung Cancer Stem Cells from Malignant Pleural Effusions. J.Cell.Physiol. 2019 Aug 9; a **IF: 4.522**.
61. Cacchione S, Biroccio A, Rizzo A. Emerging Roles of Telomeric Chromatin Alterations in Cancer. J.Exp.Clin.Cancer Res. 2019 Jan 17; 38(1): 21a **IF: 5.646**.
62. Cacciamani GE, Shakir A, Tafuri A, Gill K, Han J, Ahmadi N, Hueber PA, Gallucci M, Simone G, Campi R, Vignolini G, Huang WC, Taylor J, Becher E, Van Leeuwen ,F.W.B., Van Der Poel ,H.G., Velet LP, Hemal AK, Breda A, Autorino R, Sotelo R, Aron M, Desai MM, De Castro Abreu ,A.L. Best Practices in Near-Infrared Fluorescence Imaging with Indocyanine Green (NIRF/ICG)-Guided Robotic Urologic Surgery: A Systematic Review-Based Expert Consensus. World J.Urol. 2019 07/08; : 10.1007/s00345a **IF: 2.761**.
63. Caffo O, Wissing M, Bianchini D, Bergman A, Thomsen FB, Schmid S, Yu EY, Bournakis E, Sella A, Zagonel V, De Giorgi U, Tucci M, Gelderblom H, Galli L, Pappagallo G, Bria E, Sperduti I, Oudard S, CASTOR si. Survival Outcomes from a Cumulative Analysis of Worldwide Observational Studies on Sequential use of New Agents in Metastatic Castration-Resistant Prostate Cancer. Clinical Genitourinary Cancer. 2019 09/27; : S1558a **IF: 2.450**.
64. Campi R, Tellini R, Sessa F, Mari A, Cocci A, Greco F, Crestani A, Gomez Rivas J, Fiori C, Lapini A, Gallucci M, Capitanio U, Roupret M, Abaza R, Carini M, Serni S, Ficarra V, Porpiglia F, Esperto F, Minervini A. Techniques and Outcomes of Minimally-Invasive Surgery for Nonmetastatic Renal Cell Carcinoma with Inferior Vena Cava Thrombosis: A Systematic Review of the Literature. Minerva Urol.Nefrol. 2019 71(4): 339-358a **IF: 2.477**.
65. Carboni F, Federici O, Giofre' M, Zazza S, Valle M. Empty Pelvis Syndrome: The use of Breast Prosthesis in the Prevention of Complications. Colorectal Disease : The Official Journal of the Association of Coloproctology of Great Britain and Ireland. 2019 Nov; 21(11): 1321a **IF: 2.997**.
66. Carboni F, Federici O, Giofre M, Diodoro M, Valle M. Recurrence of Gallbladder Carcinoma 12 Years After Laparoscopic Cholecystectomy. Clin.Res.Hepatol.Gastroenterol. 2019 Feb; 43(1): e1a **IF: 2.807**.
67. Carboni F, Federici O, Giofre M, Valle M. An 18-Year Experience in Diagnostic Laparoscopy of Peritoneal Carcinomatosis: Results from 744 Patients. J.Gastrointest.Surg. 2019 Aug 20; a **IF: 2.686**.
68. Carboni F, Federici O, Giofre' M, Zazza S, Valle M. Empty Pelvis Syndrome: The use of Breast Prosthesis in the Prevention of Complications. Colorectal Dis. 2019 Jun 22; a **IF: 2.997**.

69. Carboni F, Federici O, Valle M. Response to Lee Et Al. 'Addressing the Empty Pelvic Syndrome Following Total Pelvic Exenteration: Does Mesh Reconstruction Help?'. Colorectal Dis. 2019 Feb 6; a **IF: 2.997**.
70. Carboni F,Valle M. Letter to Sullivan BJ Et Al. "Diaphragmatic Peritoneal Stripping Versus Full-Thickness Resection in CRS/HIPEC: Is there a Difference?". Ann.Surg.Oncol. 2019 Dec; 26(Suppl 3): 871a **IF: 3.681**.
71. Carboni F, Valle M, Covello R. Gastric Hybrid schwannoma/perineurioma. Cirugia Espanola. 2019 a **IF: 0.835**.
72. Carboni F, Valle M, Federici O, Covello R, Garofalo A. Giant Primary Retroperitoneal Dedifferentiated Liposarcoma. J.Gastrointest.Surg. 2018 Jul; 23(7): 1521a **IF: 2.686**.
73. Carboni F, Valle M, Giofre M. Emergency Surgery for Small Bowel Metastasis from Melanoma: Report of Three Cases. Am.Surg. 2019 Mar 1; 85(3): e135a **IF: 0.610**.
74. Carboni F, Valle M, Russo A. Mixed Adenoneuroendocrine Carcinoma of the Cecum. Clin.Res.Hepatol.Gastroenterol. 2019 Nov; 43(6): 627a **IF: 2.807**.
75. Carboni F, Bertini L, Valle M. Unusual Incidental Finding: Azygos Vein Continuation. Surgery. 2019 MAY; 165(5): 1050a **IF: 3.476**.
76. Carboni F, Covello R, Bertini L, Valle M. Uncommon Retroperitoneal Tumour: Follicular Dendritic Cell Sarcoma. Acta Chir.Belg. 2019 11/12; : 1a **IF: 0.521**.
77. Carboni F, Marandino F, Valle M. Late Isolated Subcutaneous Metastasis from Colon Cancer. ANZ J.Surg. 2019 11; 89(11): E523a **IF: 1.605**.
78. Cassano T, Magini A, Giovagnoli S, Polchi A, Calcagnini S, Pace L, Lavecchia MA, Scuderi C, Bronzuoli MR, Ruggeri L, Gentileschi MP, Romano A, Gaetani S, De Marco F, Emiliani C, Dolcetta D. Early Intrathecal Infusion of Everolimus Restores Cognitive Function and Mood in a Murine Model of Alzheimer's Disease. Exp.Neurol. 2019 Jan; 311: 88a **IF: 4.562**.
79. Castelli M, Piobbico D, Chiacchiaretta M, Brunacci C, Pieroni S, Bartoli D, Gargaro M, Fallarino F, Puccetti P, Soddu S, Della-Fazia M, Servillo G. HOPS/TMUB1 Retains p53 in the Cytoplasm and Sustains p53-Dependent Mitochondrial Apoptosis. EMBO Rep. 2019 12/23; : e48073a **IF: 8.383**.
80. Cavaletti G, Cornblath DR, Merkies ISJ, Postma TJ, Rossi E, Alberti P, Bruna J, Argyriou AA, Briani C, Velasco R, Kalofonos HP, Psimaras D, Ricard D, Pace A, Faber CG, Lalisang RI, Brandsma D, Koeppen S, Kerrigan S, Schenone A, Grisold W, Mazzeo A, Padua L, Dorsey SG, Penas-Prado M, Valsecchi MG, CI-PeriNomS Group. Patients' and Physicians' Interpretation of Chemotherapy-Induced Peripheral Neurotoxicity. J.Peripher.Nerv.Syst. 2019 Mar; 24(1): 111a **IF: 2.441**.
81. Cazzaniga ME, Biganzoli L, Cortesi L, De Placido S, Donadio M, Fabi A, Ferro A, Generali D, Lorusso V, Milani A, Montagna E, Munzone E, Orlando L, Pizzuti L, Simoncini E, Zamagni C, Pappagallo GL, "Metronomic Chemotherapy in Advanced Breast Cancer" Study Group. Treating Advanced Breast Cancer with Metronomic Chemotherapy: What is Known, what is New and what is the Future? Onco Targets Ther. 2019 Apr 23; 12: 2989a **IF: 3.046**.
82. Cazzaniga ME, Ciruelos E, Fabi A, Garcia-Saenz J, Lindman H, Mavroudis D, Schem C, Steger G, Timotheadou E, Zaman K, Torri V, MACBETH Group. Metastatic Or Locally Advanced Breast Cancer Patients: Towards an Expert Consensus on Nab-Paclitaxel Treatment in HER2-Negative Tumours-the MACBETH Project. Cancer Chemother.Pharmacol. 2019 Feb; 83(2): 301-318a **IF: 3.008**.
83. Cazzaniga ME, Danesi R, Girmenia C, Invernizzi P, Elvevi A, Uguccioni M, NetworkER+. Management of Toxicities Associated with Targeted Therapies for HR-Positive Metastatic Breast Cancer: A Multidisciplinary Approach is the Key to Success. Breast Cancer Res.Treat. 2019 Aug; 176(3): 483a **IF: 3.471**.
84. Cazzaniga ME, Pinotti G, Montagna E, Amoroso D, Berardi R, Butera A, Cagossi K, Cavanna L, Ciccarese M, Cinieri S, Cretella E, De Conciliis E, Febbraro A, Ferrau F, Ferzi A, Fiorentini G, Fontana A, Gambaro AR, Garrone O, Gebbia V, Generali D, Gianni L, Giovanardi F, Grassadonia A, Leonardi V, Marchetti P, Melegari E, Musolino A, Nicolini M, Putzu C, Riccardi F, Santini D, Saracchini S, Sarobba MG, Schintu MG, Scognamiglio G, Spadaro P, Taverniti C, Toniolo D, Tralongo P, Turletti A, Valenza R, Valerio MR, Vici P, Clivio L, Torri V, VICTOR Study Group. Metronomic Chemotherapy for

Advanced Breast Cancer Patients in the Real World Practice: Final Results of the VICTOR-6 Study. Breast. 2019 Aug 22; 48: 7a **IF: 3.494**.

85. Cazzato RL, Arrigoni F, Boatta E, Bruno F, Chiang JB, Garnon J, Zugaro L, Giordano AV, Carducci S, Varrassi M, Beomonte Zobel B, Bazzocchi A, Aliprandi A, Basile A, Marcia S, Masala S, Grasso RF, Squarza S, Floridi C, Ierardi AM, Burdi N, Cioni R, Napoli A, Niola R, Rossi G, Rossi UG, Venturini M, De Cobelli F, Carotti M, Gravina GL, Di Staso M, Zoccali C, Biagini R, Tonini G, Santini D, Carrafiello G, Cariati M, Silvestri E, Sconfienza LM, Giovagnoni A, Masciocchi C, Gangi A, Barile A. Percutaneous Management of Bone Metastases: State of the Art, Interventional Strategies and Joint Position Statement of the Italian College of MSK Radiology (ICoMSKR) and the Italian College of Interventional Radiology (ICIR). Radiol.Med. 2019 Jan; a **IF: 1.420**.
86. Cecere FL, Aguilar A, Rosell R. Lung Cavitation in Lung Metastases of Gastric and Non-Small-Cell Lung Cancer Patients Treated with Apatinib. Transl.Lung Cancer.Res. 2019 Aug; 8(4): 317a **IF: 4.806**.
87. Cenci C, Cercato M, Mecarelli O. La Medicina Narrativa nell'era Digitale. Scenario, Metodologie e Applicazioni Cliniche in Epilessia e Oncologia in: Relazioni Di Cura nell'era Digitale. 2019 May; : 69.
88. Cercato MC, Colella E, Fabi A, Bertazzi I, Giardina BG, Di Ridolfi P, Mondati M, Petitti P, Bigiarini L, Scarinci V, Franceschini A, Sanguineti G, Cognetti F, Cenci C. 2019. "A Narrative Digital Diary Applied to chemo/radiotherapy Treatment to Personalize Patient Care (Pilot Study) in: Abstract Book of the 21th National Congress of Italian Association of Medical Oncology (AIOM)." Abstract. Tumori Journal 105, no. 6 (11/01; 2020/01): 1-216.
89. Chellini L, Caprara V, Spadaro F, Sestito R, Bagnato A, Rosano L. Regulation of Extracellular Matrix Degradation and Metastatic Spread by IQGAP1 through Endothelin-1 Receptor Signalling in Ovarian Cancer. Matrix Biol. 2019 Aug; 81: 17a **IF: 6.986**.
90. Cherfils-Vicini J, Iltis C, Cervera L, Pisano S, Croce O, Sadouni N, Gyorffy B, Collet R, Renault VM, Rey-Millet M, Leonetti C, Zizza P, Allain F, Ghiringhelli F, Soubeiran N, Shkreli M, Vivier E, Biroccio A, Gilson E. Cancer Cells Induce Immune Escape Via Glycocalyx Changes Controlled by the Telomeric Protein TRF2. Embo j. 2019 Jun; 38(11): e100012a **IF: 11.227**.
91. Chiappetta M, Leuzzi G, Sperduti I, Bria E, Mucilli F, Lococo F, Spaggiari L, Ratto GB, Filosso PL, Facciolo F. Lymph-Node Ratio Predicts Survival among the Different Stages of Non-Small-Cell Lung Cancer: A Multicentre Analysis. Eur.J.Cardiothorac.Surg. 2019 Mar; 55(3): 405a IF:3.847.
92. Chiappetta M, Marino M, Facciolo F. Unique Case of Atypical Type A Thymoma with Vertebral Metastasis and High 18-Fluorodeoxyglucose Avidity. ANZ J.Surg. 2019 Oct; 89(10): E450a **IF: 1.605**.
93. Chiefari A., Monti S. Tiroidectomia per ipertiroidismo: parametri vitali secondo gravità di malattia. AME News. 26 Marzo 2019
94. Chiodoni C, Di Martino MT, Zazzeroni F, Caraglia M, Donadelli M, Meschini S, Leonetti C, Scotlandi K. Cell Communication and Signaling: How to Turn Bad Language into Positive One. J.Exp.Clin.Cancer Res. 2019 Mar 13; 38(1): 128a **IF: 5.646**.
95. Chiofalo B, Bruni S, Certelli C, Sperduti I, Baiocco E, Vizza E. Primary Debulking Surgery Vs. Interval Debulking Surgery for Advanced Ovarian Cancer: Review of the Literature and Meta-Analysis. Minerva Med. 2019 Aug; 110(4): 330a **IF: 2.475**.
96. Chiofalo B, Mazzon I, Di Angelo Antonio S, Amadore D, Vizza E, Lagana AS, Vocaturo G, Calagna G, Favilli A, Palmara V, Maranto M, Vitale SG, Cucinella G, Granese R, Ghezzi F, Sperduti I, Triolo O. Hysteroscopic Evaluation of Endometrial Changes in Breast Cancer Women with Or without Hormone Therapies: Results from a Large Multicenter Cohort Study. J.Minim Invasive Gynecol. 2019 Aug 16; a **IF: 2.547**.
97. Cianci S, Abatini C, Fagotti A, Chiofalo B, Tropea A, Biondi A, Scambia G, Pacelli F. Hyperthermic Intraperitoneal Chemotherapy (HIPEC) for Peritoneal Malignancies using New Hybrid CO(2) System: Preliminary Experience in Referral Center. Updates in Surgery. 2019 09; 71(3): 555a **IF: 2.476**.
98. Cini G, Ranzani GN, Cannizzaro R, Chiappa A, Fassan M, Fornasarig M, Roncucci L, Sanchez Mete L, Tibiletti MG, Viel A. La sindrome di Lynch raccontata dalla Associazione AIFEG. MR La Rivista Italiana delle Malattie Rare giugno 2019; anno III n. 2:16-24

99. Cirone M, Gilardini Montani MS, Granato M, Garufi A, Faggioni A, D'Orazi G. Autophagy Manipulation as a Strategy for Efficient Anticancer Therapies: Possible Consequences. J.Exp.Clin.Cancer Res. 2019 Jun 14; 38(1): 262a **IF: 5.646**.
100. Claroni C, Covotta M, Torregiani G, Marcelli ME, Tuderti G, Simone G, Scotto di Uccio A, Zinilli A, Forastiere E. Recovery from Anesthesia After Robotic-Assisted Radical Cystectomy: Two Different Reversals of Neuromuscular Blockade. Journal of Clinical Medicine. 2019 10/24; 8(11): 1774a **IF: 5.688**.
101. Cocchiola R, Rubini E, Altieri F, Chichiarelli S, Paglia G, Romaniello D, Carissimi S, Giorgi A, Giamogante F, Macone A, Perugia G, Gurtner A, Eufemi M. STAT3 Post-Translational Modifications Drive Cellular Signaling Pathways in Prostate Cancer Cells. Int.J.Mol.Sci. 2019 Apr 12; 20(8): E1815 **IF: 4.183**.
102. Cognetti G. Professionisti della salute e qualità delle cure: il ruolo della informazione e della documentazione elettronica. Smart eLab - vol. 14. ITIM 2019: 19° Convegno Nazionale Associazione Italiana di Telematica ed Informatica Medica (Matera/Potenza 11-12 Novembre 2019)
103. Colafigli M, Ciccullo A, Borghetti A, Fanti I, Melis F, Modica S, Uccella I, Bonadies A, Ferraresi V, Anzalone E, Pennica A, Migliano E, Rossetti B, Madeddu G, Cauda R, Cristaudo A, Di Giambenedetto S, Latini A. Impact of Antiretroviral Therapy on the Risk of Recurrence in HIV-1 Infected Patients with Kaposi Sarcoma: A Multicenter Cohort Experience. Journal of Clinical Medicine. 2019 11/23; 8(12): 2062a **IF: 5.688.**
104. Condello M, Pellegrini E, Spugnini EP, Baldi A, Amadio B, Vincenzi B, Occhionero G, Delfine S, Mastrodonato F, Meschini S. Anticancer Activity of "Trigno M", Extract of Prunus Spinosa Drupes, Against in Vitro 3D and in Vivo Colon Cancer Models. Biomed.Pharmacother. 2019 Oct; 118: 109281a **IF: 3.743**.
105. Conforti C, Paolini F, Venuti A, Dianzani C, Zalaudek I. The Detection Rate of Human Papillomavirus (HPV) in Well Differentiated Squamous Cell Carcinoma and Keratoacanthoma: Is there New Evidence for a Viral Pathogenesis of Keratoacanthoma? Br.J.Dermatol. 2019 Jun 7; a **IF: 6.714**.
106. Contadini C, Monteonofrio L, Virdia I, Prodosmo A, Valente D, Chessa L, Musio A, Fava LL, Rinaldo C, Di Rocco G, Soddu S. P53 Mitotic Centrosome Localization Preserves Centrosome Integrity and Works as Sensor for the Mitotic Surveillance Pathway. Cell Death & Disease. 2019 11/07; 10(11): 850a **IF: 5.959**.
107. Conte B, Fabi A, Poggio F, Blondeaux E, Dellepiane C, D'Alonzo A, Buono G, Arpino G, Magri V, Naso G, Presti D, Mura S, Fontana A, Cognetti F, Molinelli C, Pastorino S, Bighin C, Miglietta L, Boccardo F, Lambertini M, Del Mastro L, Gruppo Italiano Mammella (GIM),study group. T-DM1 Efficacy in Patients with HER2-Positive Metastatic Breast Cancer Progressing After a Taxane Plus Pertuzumab and Trastuzumab: An Italian Multicenter Observational Study. Clinical Breast Cancer. 2019 10/24; : S1526a **IF: 2.762**.
108. Corrado, G., Bruni, S., Vizza,E. Robotic Surgery in Early-Stage Endometrial Cancer. Translational Cancer Research. 2019 8(6)a **IF: 1.070**
109. Corrado G, Zoccali C, Salducca N, Oddi A, Vizza E, Biagini R. Anterior Robotic Approach in En-Bloc Sacrectomy: A Preliminary Experience. J.Robot.Surg. 2019 Feb; 13(1): 53a
110. Corrado G, Mereu L, Bogliolo S, Cela V, Gardella B, Sperduti I, Certelli C, Pellegrini A, Posar G, Zampa A, Tateo S, Gadducci A, Spinillo A, Vizza E. Comparison between Single-Site and Multiport Robot-Assisted Hysterectomy in Obese Patients with Endometrial Cancer: An Italian Multi-Institutional Study. The International Journal of Medical Robotics + Computer Assisted Surgery: MRCAS. 2019 12/18; : e2066a **IF: 1.634**.
111. Cortinovis D, Chiari R, Catino A, Grossi F, DE Marinis F, Sperandi F, Piantedosi F, Vitali M, Parra HJS, Migliorino MR, Tondini C, Tassinari D, Frassoldati A, Verderame F, Pazzola A, Cognetti F, Palmiotti G, Marchetti P, Santoro A, Giannarelli D, Colonese F, Delmonte A. Italian Cohort of the Nivolumab EAP in Squamous NSCLC: Efficacy and Safety in Patients with CNS Metastases. Anticancer Res. 2019 Aug; 39(8): 4265a **IF: 1.936**.
112. Cosimelli M, Ursi P, Mancini R, Pattaro G, Perri P, Parrino C, De Peppo V, Diodoro MG, Balla A, Grazi GL. Organ-Saving Surgery for Rectal Cancer After Neoadjuvant Chemoradiation: Analysis of Failures and Long-Term Results. J.Surg.Oncol. 2019 12/01; : 10.1002/jso.25794a **IF: 3.114**.

113. Costantini M, Tuderti G, Minisola F, Pompeo V, Sentinelli S, Amoreo CA, Vallati G, Poeta ML, Gallucci M, Simone G. Metachronous Isolated Splenic Metastasis in a Young Patient with Renal Cell Carcinoma: Case Report and Literature Review. Urology. 2019 May; 127: 13a **IF: 1.861**.
114. Covotta M, Claroni C, Costantini M, Torregiani G, Pelagalli L, Zinilli A, Forastiere E. The Effects of Ultrasound-Guided Transversus Abdominis Plane Block on Acute and Chronic Postsurgical Pain After Robotic Partial Nephrectomy: A Prospective Randomized Clinical Trial. Pain Med. 2019 Aug 29; a **IF: 2.764**.
115. Crino L, Bidoli P, Delmonte A, Grossi F, De Marinis F, Ardizzoni A, Vitiello F, Lo Russo G, Parra HS, Cortesi E, Cappuzzo F, Calabro L, Tiseo M, Turci D, Gamucci T, Antonelli P, Morabito A, Chella A, Giannarelli D, Galetta D. Italian Cohort of Nivolumab Expanded Access Program in Squamous Non-Small Cell Lung Cancer: Results from a Real-World Population. Oncologist. 2019 Apr 17; a **IF: 5.252**.
116. Crino L, Bronte G, Bidoli P, Cravero P, Minenza E, Cortesi E, Garassino MC, Proto C, Cappuzzo F, Grossi F, Tonini G, Sarobba MG, Pinotti G, Numico G, Samaritani R, Ciuffreda L, Frassoldati A, Bregni M, Santo A, Piantedosi F, Illiano A, De Marinis F, Tamberi S, Giannarelli D, Delmonte A. Nivolumab and Brain Metastases in Patients with Advanced Non-Squamous Non-Small Cell Lung Cancer. Lung Cancer. 2019 Mar; 129: 35a **IF: 4.599**.
117. Criscuolo M, Marchesi F, Candoni A, Cattaneo C, Nosari A, Veggia B, Verga L, Fracchiolla N, Vianelli N, Del Principe MI, Picardi M, Tumbarello M, Aversa F, Busca A, Pagano L, SEIFEM Group (Sorveglianza Epidemiologica Infezioni nelle Emopatie). Fungaemia in Haematological Malignancies: SEIFEM-2015 Survey. Eur.J.Clin.Invest. 2019 May; 49(5): e13083a **IF: 2.784**.
118. Cristaudo A, Petrucci F, Giannarelli D, Cercato MC, Orsini D, Morrone A, Bocca B. Nickel Dermatitis from Earrings 15 Years After EU Directive Implementation: A Clinical-Epidemiological Study and a Market Survey in Rome, Italy. J.Eur.Acad.Dermatol.Venereol. 2019 Oct; 33(10): 1928a **IF: 5.113**.
119. Cuscino N, Raimondi L, De Luca A, Carcione C, Russelli G, Conti L, Baldi J, Conaldi PG, Giavaresi G, Gallo A. Gathering Novel Circulating Exosomal microRNA in Osteosarcoma Cell Lines and Possible Implications for the Disease. Cancers. 2019 12/03; 11(12): E1924a **IF: 6.162**.
120. Dal Maso A, Lorenzi M, Roca E, Pilotto S, Macerelli M, Polo V, Cecere FL, Del Conte A, Nardo G, Buoro V, Scattolin D, Monteverdi S, Urso L, Zulato E, Frega S, Bonanno L, Indraccolo S, Calabrese F, Conte P, Pasello G. Clinical Features and Progression Pattern of Acquired T790M-Positive Compared with T790M-Negative EGFR Mutant Non-Small-Cell Lung Cancer: Catching Tumor and Clinical Heterogeneity Over Time through Liquid Biopsy. Clin.Lung Cancer. 2019 Aug 5; a **IF: 4.117**.
121. D'Angelo S,P., Hunger M, Brohl AS, Nghiem P, Bhatia S, Hamid O, Mehnert JM, Terheyden P, Shih KC, Brownell I, LebbÃ© C, Lewis KD, Linette GP, Milella M, Schlichting M, Hennessy MH, Bharmal M. Early Objective Response to Avelumab Treatment is Associated with Improved overall Survival in Patients with Metastatic Merkel Cell Carcinoma. Cancer Immunology, Immunotherapy : CII. 2019 04; 68(4): 609a **IF: 4.900**.
122. Daniele G, Arenare L, Scambia G, Pisano C, Sorio R, Breda E, De Placido S, Savarese A, Ferrandina G, Raspagliesi F, Panici PB, Ferro A, Rimanti A, Cormio G, Lorusso D, Cecere SC, Scalone S, Marsico VA, Cardalesi C, Cognetti F, Salutari V, Attademo L, Guizzaro L, Schettino C, Piccirillo MC, Perrone F, Gallo C, Pignata S. Prognostic Role of Chemotherapy-Induced Neutropenia in First-Line Treatment of Advanced Ovarian Cancer. A Pooled Analysis of MITO2 and MITO7 Trials. Gynecol.Oncol. 2019 Jul; 154(1): 83-88a **IF: 4.393**.
123. De Angeli M, Carosi M, Vizza E, Corrado G. Sister Mary Joseph's Nodule in Endometrial Cancer: A Case Report and Review of the Literature. Journal of Cancer Research and Therapeutics. 2019 Oct; 15(6): 1408a **IF: 1.392**.
124. De Angelis C, Ampollini A, Bazzano G, Della Monaca S, Ghio F, Giuliani F, Lucentini M, Montereali RM, Nenzi P, Notaro C, Placido C, Piccinini M, Ronsivalle C, Santavenere F, Soriani A, Spurio A, Strigari L, Surrenti V, Trinca E, Vadrucci M, Cisbani E, Picardi L. The Top-Implart Proton Linear Accelerator: Interim Characteristics of the 35 Mev Beam. Radiat.Prot.Dosimetry. 2019 May 29; a **IF: 0.831**.
125. De Castro P, Cognetti G, Palazzesi I, Poltronieri E, Scarinci V, Perilli R. Survey on health information literacy in a cohort of elderly people in Pescara (Italy) in 2017. Are they fully aware of the

implications behind Internet search? EAHIL 2019: Learn Share Act Bridge Borders (Basilea 17-20 giugno 2019)

126. De Giorgi U, Carteni G, Giannarelli D, Basso U, Galli L, Cortesi E, Caserta C, Pignata S, Sabbatini R, Bearz A, Buti S, Lo Re G, Berruti A, Bracarda S, Cognetti F, Rastelli F, Fornarini G, Porta C, Turci D, Sternberg CN, Procopio G, Italian Nivolumab Renal Cell Cancer Early Access Program Group. Safety and Efficacy of Nivolumab for Metastatic Renal Cell Carcinoma: Real-World Results from an Expanded Access Programme. BJU Int. 2019 Jan; 123(1): 98a **IF: 4.524**.

127. De Giorgi U, Procopio G, Giannarelli D, Sabbatini R, Bearz A, Buti S, Basso U, Mitterer M, Ortega C, Bidoli P, Ferrau F, Crino L, Frassoldati A, Marchetti P, Mini E, Scoppola A, Verusio C, Fornarini G, Carteni G, Caserta C, Sternberg CN. Association of Systemic Inflammation Index and Body Mass Index with Survival in Patients with Renal Cell Cancer Treated with Nivolumab. Clin.Cancer Res. 2019 Jul 1; 25(13): 3839a **IF: 8.911**.

128. De Nunzio C, Cicione A, Izquierdo L, Lombardo R, Tema G, Lotrecchiano G, Minervini A, Simone G, Cindolo L, D'Orta C, Ajami T, Antonelli A, Dellabella M, Alcaraz A, Tubaro A. Multicenter Analysis of Postoperative Complications in Octogenarians After Radical Cystectomy and Ureterocutaneostomy: The Role of the Frailty Index. Clin.Genitourin.Cancer. 2019 Oct; 17(5): 402a **IF: 2.450**.

129. De Virgilio A, Kim S, Magnuson JS, Holsinger C, Remacle M, Lawson G, Wang C, Mercante G, Malvezzi L, Iocca O, Di Maio P, Ferreli F, Pellini R, Spriano G. Anatomical-Based Classification for Transoral Lateral Oropharyngectomy. Oral Oncol. 2019 12; 99: 104450a **IF: 3.730**.

130. De Virgilio A, Iocca O, Di Maio P, Malvezzi L, Pellini R, Mercante G, Spriano G. Head and Neck Soft Tissue Reconstruction with Anterolateral Thigh Flaps with various Components: Development of an Algorithm for Flap Selection in Different Clinical Scenarios. Microsurgery. 2019 Oct; 39(7): 590a **IF: 1.945**.

131. De Virgilio A, Iocca O, Malvezzi L, Di Maio P, Pellini R, Ferreli F, Cugini G, Colombo G, Spriano G. The Emerging Role of Robotic Surgery among Minimally Invasive Surgical Approaches in the Treatment of Hypopharyngeal Carcinoma: Systematic Review and Meta-Analysis. J.Clin.Med. 2019 Feb 18; 8(2): E256 **IF: 5.688**.

132. De Vita R, Buccheri EM, Villanucci A, Pozzi M. Breast Reconstruction Actualized in Nipple-Sparing Mastectomy and Direct-to-Implant, Prepectoral Polyurethane Positioning: Early Experience and Preliminary Results. Clin.Breast Cancer. 2019 Apr; 19(2): e358a **IF: 2.762**.

133. De Vita R, Buccheri EM, Villanucci A, Ragusa LA. Breast Asymmetry, Classification, and Algorithm of Treatment: Our Experience. Aesthetic Plast.Surg. 2019 Dec; 43(6): 1439a **IF: 1.399**.

134. De Vitis C, Corleone G, Salvati V, Ascenzi F, Pallocca M, De Nicola F, Fanciulli M, di Martino S, Bruschini S, Napoli C, Ricci A, Bassi M, Venuta F, Rendina EA, Ciliberto G, Mancini R. B4GALT1 is a New Candidate to Maintain the Stemness of Lung Cancer Stem Cells. Journal of Clinical Medicine. 2019 11/09; 8(11): 1928a **IF: 5.688**.

135. Del Giudice F, Busetto GM, De Berardinis E, Sperduti I, Ferro M, Maggi M, Gross MS, Sciarra A, Eisenberg ML. A Systematic Review and Meta-Analysis of Clinical Trials Implementing Aromatase Inhibitors to Treat Male Infertility. Asian J.Androl. 2019 10/15; : 10.4103/aja.aja_101_19a **IF: 2.862**.

136. Del Principe MI, Dragonetti G, Verga L, Candoni A, Marchesi F, Cattaneo C, Delia M, Potenza L, Farina F, Ballanti S, Decembrino N, Castagnola C, Nadali G, Fanci R, Orciulo E, Veggia B, Offidani M, Melillo L, Manetta S, Tumbarello M, Venditti A, Busca A, Aversa F, Pagano L, Sorveglianza Epidemiologica Infezioni nelle Emopatie (SEIFEM) Group. 'Real-Life' Analysis of the Role of Antifungal Prophylaxis in Preventing Invasive Aspergillosis in AML Patients Undergoing Consolidation Therapy: Sorveglianza Epidemiologica Infezioni Nelle Emopatie (SEIFEM) 2016 Study. J.Antimicrob.Chemother. 2019 Apr 1; 74(4): 1062a **IF: 5.113**.

137. Di Agostino S, Fontemaggi G, Strano S, Blandino G, D'Orazi G. Targeting Mutant p53 in Cancer: The Latest Insights. J.Exp.Clin.Cancer Res. 2019 Jul 5; 38(1): 290a **IF: 5.646**

138. Di Benedetto A, Ercolani C, Pizzuti L, Angelucci D, Sergi D, Marinelli C, Iezzi L, Sperati F, Terrenato I, Mazzotta M, Mariani L, Vizza E, Paoletti G, Tomao S, Maugeri-Sacca M, Barba M, Tinari N, Natoli C, Ciliberto G, Grassadonia A, Vici P. Prognostic Relevance of DNA Damage and Repair Biomarkers in Elderly Patients with Hormone-Receptor-Positive Breast Cancer Treated with Neoadjuvant

Hormone Therapy: Evidence from the Real-World Setting. Ther.Adv.Med.Oncol. 2019 Aug 18; 11: 1758835919853192a **IF: 5.670**.

139. Di Domenico EG, Rimoldi SG, Cavallo I, D'Agosto G, Trento E, Cagnoni G, Palazzin A, Pagani C, Romeri F, De Vecchi E, Schiavini M, Secchi D, Antona C, Rizzardini G, Dichirico RB, Toma L, Kovacs D, Cardinali G, Gallo MT, Gismondo MR, Ensoli F. Microbial Biofilm Correlates with an Increased Antibiotic Tolerance and Poor Therapeutic Outcome in Infective Endocarditis. BMC Microbiol. 2019 Oct 21; 19(1): 228a **IF: 3.287**.
140. Di Giacomo AM, Covre A, Finotello F, Rieder D, Danielli R, Sigalotti L, Giannarelli D, Petiprez F, Lacroix L, Valente M, Cutaia O, Fazio C, Amato G, Lazzeri A, Monterisi S, Miracco C, Coral S, Anichini A, Bock C, Nemc A, Oganesian A, Lowder JN, Azab M, Fridman WH, Sautes-Fridman C, Trajanoski Z, Maio M. Guadecitabine Plus Ipilimumab in Unresectable Melanoma: The NIBIT-M4 Clinical Trial. Clin.Cancer Res. 2019 Dec; 25(24): 7351a **IF: 8.911**.
141. Di Leo L, Vegliante R, Ciccarone F, Salvatori I, Scimeca M, Bonanno E, Sagnotta A, Grazi GL, Aquilano K, Ciriolo MR. Forcing ATGL Expression in Hepatocarcinoma Cells Imposes Glycolytic Rewiring through PPAR-alpha/p300-Mediated Acetylation of p53. Oncogene. 2019 Mar; 38(11): 1860a **IF: 6.634**.
142. Di Maio P, Iocca O, De Virgilio A, Giudice M, Pellini R, D'Ascanio L, GolusiÅ„ski P, Ricci G, Spriano G. Narrow Band Imaging in Head and Neck Unknown Primary Carcinoma: A Systematic Review and Meta-Analysis. Laryngoscope. 2019 11/12; : 10.1002/lary.28350a **IF: 2.343**.
143. Di Maio P, Iocca O, De Virgilio A, Ferreli F, Cristalli G, Pellini R, Golusinski P, Ricci G, Spriano G. Role of Palatine Tonsillectomy in the Diagnostic Workup of Head and Neck Squamous Cell Carcinoma of Unknown Primary Origin: A Systematic Review and Meta-Analysis. Head Neck. 2019 Apr; 41(4): 1112a **IF: 2.442**.
144. Di Matteo S, Nevi L, Costantini D, Overi D, Carpino G, Safarikia S, Giulitti F, Napoletano C, Manzi E, De Rose AM, Melandro F, Bragazzi M, Berloco PB, Giuliante F, Grazi G, Giorgi A, Cardinale V, Adorini L, Gaudio E, Alvaro D. The FXR Agonist Obeticholic Acid Inhibits the Cancerogenic Potential of Human Cholangiocarcinoma. PLoS One. 2019 Jan 24; 14(1): e0210077a **IF: 2.776**.
145. Di Modugno F, Colosi C, Trono P, Antonacci G, Ruocco G, Nistico P. 3D Models in the New Era of Immune Oncology: Focus on T Cells, CAF and ECM. J.Exp.Clin.Cancer Res. 2019 Mar 22; 38(1): 117a **IF: 5.646**.
146. Di Rocco G, Baldari S, Pani G, Toietta G. Stem Cells Under the Influence of Alcohol: Effects of Ethanol Consumption on stem/progenitor Cells. Cell Mol.Life Sci. 2019 Jan; a IF:7.014.
147. Di Stefano AL, Berzero G, Ducray F, Eoli M, Pichiecchio A, Farina LM, Cuccarini V, Brunelli MC, Diamanti L, Auliac SC, Salmaggi A, Silvani A, Giometto B, Pace A, Vidiri A, Bourdain F, Bastianello S, Ceroni M, Marchioni E. Stroke-Like Events After Brain Radiotherapy: A Large Series with Long-Term Follow-Up. European Journal of Neurology. 2019 APR; 26(4): 639a **IF: 4.387**.
148. Di Veroli A, Campagna A, De Muro M, Maurillo L, Trawinska MM, LeonettiCrescenzi S, Petriccione L, Romano A, D'Addosio A, Cenfra A, Montanaro M, Felici S, Andriani A, Carmosino I, Niscola P, Montefusco E, Breccia M, Latagliata R. Deferasirox in the Treatment of Iron Overload during Myeloproliferative Neoplasms in Fibrotic Phase: Does Ferritin Decrement Matter? Leuk.Res. 2019 Jan; 76: 65a **IF: 2.319**.
149. Diamand R, Oderda M, Al Hajj Obeid W, Albisinni S, Van Velthoven R, Fasolis G, Simone G, Ferriero M, Roche JB, Piechaud T, Pastore A, Carbone A, Fiard G, Descotes JL, Marra G, Gontero P, Altobelli E, Papalia R, Kumar P, Eldred-Evans D, Giacobbe A, Muto G, Lacetera V, Beatrici V, Roumeguere T, Peltier A. A Multicentric Study on Accurate Grading of Prostate Cancer with Systematic and MRI/US Fusion Targeted Biopsies: Comparison with Final Histopathology After Radical Prostatectomy. World J.Urol. 2019 Jan 16; a **IF: 2.761**.
150. Dinter H, Bohnenberger H, Beck J, Bornemann-Kolatzki K, Schutz E, Kuffer S, Klein L, Franks TJ, Roden A, Emmert A, Hinterthaner M, Marino M, Brcic L, Popper H, Weis CA, Pelosi G, Marx A, Strobel P. Molecular Classification of Neuroendocrine Tumors of the Thymus. J.Thorac.Oncol. 2019 Aug; 14(8): 1472a **IF: 12.460**.

151. Donà MG, Pichi B, Rollo F, Benevolo M, Latini A, Laquintana V, Pellini R, Colafigli M, Frasca M, Giuliani MCristaudo A. Human Papillomavirus Detection in Matched Oral Rinses, Oropharyngeal and Oral Brushings of Cancer-Free High-Risk Individuals. Oral Oncology. 2019 April 2019; 911 **IF: 3.730**.

152. D'Orazi V, Sacconi A, Trombetta S, Karpathiotakis M, Pichelli D, Di Lorenzo E, Ortensi A, Urciuoli P, Biffoni M, Ortensi A. May Predictors of Difficulty in Thyroid Surgery Increase the Incidence of Complications? Prospective Study with the Proposal of a Preoperative Score. BMC Surgery. 2019 04/24; 18: 116a **IF: 1.775**.

153. D'Orazi G,Cirone M. Mutant p53 and Cellular Stress Pathways: A Criminal Alliance that Promotes Cancer Progression. Cancers (Basel). 2019 May 2; 11(5): E614 **IF: 6.162**.

154. Doria F, Salvati E, Pompili L, Pirota V, D'Angelo C, Manoli F, Nadai M, Richter SN, Biroccio A, Manet I, Freccero M. Dyads of G-Quadruplex Ligands Triggering DNA Damage Response and Tumour Cell Growth Inhibition at Subnanomolar Concentration. Chemistry. 2019 Aug 22; 25(47): 11085a **IF: 5.915**.

155. Dotta L, Notarangelo LD, Moratto D, Kumar R, Porta F, Soresina A, Lougaris V, Plebani A, Smith CIE, Norlin AC, Gomez Raccio AC, Bubanska E, Bertolini P, Amendola G, Visentini M, Fiorilli M, Venuti A, Badolato R. Long-Term Outcome of WHIM Syndrome in 18 Patients: High Risk of Lung Disease and HPV-Related Malignancies. J.Allergy Clin.Immunol.Pract. 2019 May - Jun; 7(5): 1568a **IF: 7.550**.

156. Edwards JG, Chansky K, van Schil P, Nicholson AG, Boubia S, Brambilla E, Donnington J, Galateau-SallÃ© F, Hoffman H, Infante M, Marino M, Marom E, Nakajima J, Ostrowski M, Travis WD, Tsao MS, Yatabe Y, Giroux DJ, Shemanski L, Crowley J, Krasnik M, Asamura H, Rami-Porta R, International Association for the Study of Lung Cancer Staging and Prognostic Factors Committee, Advisory Board Members, and Participating Institutions. The IASLC Lung Cancer Staging Project: Analysis of Resection Margin Status and Proposals for Residual Tumor (R) Descriptors for Non-Small Cell Lung Cancer. Journal of Thoracic Oncology: Official Publication of the International Association for the Study of Lung Cancer. 2019 11/12; : S1556a **IF: 12.460**.

157. Eggermont AMM, Chiarion-Sileni V, Grob JJ, Dummer R, Wolchok JD, Schmidt H, Hamid O, Robert C, Ascierto PA, Richards JM, Lebbe C, Ferraresi V, Smylie M, Weber JS, Maio M, Hosein F, de Pril V, Kicinski M, Suciu S, Testori A. Adjuvant Ipilimumab Versus Placebo After Complete Resection of Stage III Melanoma: Long-Term Follow-Up Results of the European Organisation for Research and Treatment of Cancer 18071 Double-Blind Phase 3 Randomised Trial. Eur.J.Cancer. 2019 Aug 7; 119: 1a **IF: 6.680**.

158. Esposito M, Masi L, Zani M, Doro R, Fedele D, Garibaldi C, Clemente S, Fiandra C, Giglioli FR, Marino C, Orsingher L, Russo S, Stasi M, Strigari L, Villaggi E, Mancosu P. SBRT Planning for Spinal Metastasis: Indications from a Large Multicentric Study. Strahlenther.Onkol. 2019 Mar; 195(3): 226a **IF: 2.717**.

159. Fabi A,Catania G. LHRH Analogs: Current Role in Early and Advanced Breast Cancer Treatment of Premenopausal Patients. Recenti Prog.Med. 2019 Jul-Aug; 110(7): 347a

160. Fabi A, Lanzetta G, Vizza E, Corsi D, Moscetti L, Spinelli G, Mentuccia L, Lalle M, Perrone M, Baiocco L, Falcicchio C, Milani A, Giannarelli D, Cognetti F, Pugliese P. The Unmet Need for Oncofertility Preservation in Women: Results of a Survey by Different Oncological Specialists in Lazio, Italy. Curr.Probl.Cancer. 2019 Dec; 43(6): 100479a **IF: 3.698**.

161. Fagotti A, Gueli Alletti S, Corrado G, Cola E, Vizza E, Vieira M, Andrade CE, Tsunoda A, Favero G, Zapardiel I, Pasciuto T, Scambia G. The INTERNATIONAL MISSION Study: Minimally Invasive Surgery in Ovarian Neoplasms After Neoadjuvant Chemotherapy. Int.J.Gynecol.Cancer. 2019 Jan; 29(1): 5a **IF: 1.746.**

162. Fatti LM, Cangiano B, Vitale G, Persani L, Mantovani G, Sala E, Arosio M, Maffei P, Dassie F, Mormando M, Giampietro A, Tanda L, Masiello ER, Nazzari E, Ferone D, Corbetta S, Passeri E, Guaraldi F, Grottoli S, Cannavò S, Torre MLT, Soranna D, Zambon A, Cavagnini F, Scacchi M; Study Group on Motor Disability in Acromegaly of the Italian Society of Endocrinology. Arthropathy in acromegaly: a questionnaire-based estimation of motor disability and its relation with quality of life and work productivity. Pituitary. 2019 Oct 22;(5):552-560. **IF: 3.335**

163. Fattore L, Mancini R, Ascierto PA, Ciliberto G. The Potential of BRAF-Associated Non-Coding RNA as a Therapeutic Target in Melanoma. Expert Opin.Ther.Targets. 2019 Jan; 23(1): 53a IF:4.621.
164. Fattore L, Ruggiero CF, Liguoro D, Mancini R, Ciliberto G. Single Cell Analysis to Dissect Molecular Heterogeneity and Disease Evolution in Metastatic Melanoma. Cell.Death Dis. 2019 Oct 31; 10(11): 827a **IF: 5.959**.
165. Fattore L, Ruggiero CF, Pisanu ME, Liguoro D, Cerri A, Costantini S, Capone F, Acunzo M, Romano G, Nigita G, Mallardo D, Ragone C, Carriero MV, Budillon A, Botti G, Ascierto PA, Mancini R, Ciliberto G. Reprogramming miRNAs Global Expression Orchestrates Development of Drug Resistance in BRAF Mutated Melanoma. Cell Death Differ. 2019 Jul; 26(7): 1267a **IF: 8.086**.
166. Federici G, Varricchio L, Martelli F, Falchi M, Picconi O, Francescangeli F, Contavalli P, Girelli G, Tafuri A, Petricoin,Emanuel F.,,3rd, Mazzarini M, Zeuner A, Migliaccio AR. Phosphoproteomic Landscaping Identifies Non-Canonical cKIT Signaling in Polycythemia Vera Erythroid Progenitors. Frontiers in Oncology. 2019 11/22; 9: 1245a **IF: 4.137**.
167. Ferriero M, Mastroianni R, De Nunzio C, Cindolo L, CalabrÃ² F, Tema G, Leonardo C, Flammia RS, Tuderti G, Anceschi U, Brassetti A, Giacinti S, Guaglianone S, Ghahhari J, Schips L, Tubaro A, Gallucci M, Simone G. Managing Lines of Therapy in Castration-Resistant Prostate Cancer: Real-Life Snapshot from a Multicenter Cohort. World J.Urol. 2019 10/12; a **IF: 2.761**.
168. Fouassier L, Marzioni M, Afonso MB, Dooley S, Gaston K, Giannelli G, Rodrigues CMP, Lozano E, Mancarella S, Segatto O, Vaquero J, Marin JJG, Coulouarn C. Signalling Networks in Cholangiocarcinoma: Molecular Pathogenesis, Targeted Therapies and Drug Resistance. Liver Int. 2019 May; 39(S1): 43a **IF: 5.542**.
169. Galie E, Villani V, Ferreli F, Pace A, Pellini R. Vastus Lateralis Myofascial Free Flap for Tongue Reconstruction and Hypoglossal-Femoral Anastomosis: Neurophysiological Study. Neurol.Sci. 2019 Mar; 40(3): 553a **IF: 2.484**.
170. Gallazzi E, Cannavo L, Perrucchini GG, Morelli I, Luzzati AD, Zoccali C, Scotto G. Is the Posterior-Only Approach Sufficient for Treating Cervical Spine Metastases? the Evidence from a Case Series. World Neurosurg. 2019 Feb; a **IF: 1.723**.
171. Gamell C, Bandilovska I, Gulati T, Kogan A, Lim SC, Kovacevic Z, Takano EA, Timpone C, Agupitan AD, Litchfield C, Blandino G, Horvath LG, Fox SB, Williams SG, Russo A, Gallo E, Paul PJ, Mitchell C, Sandhu S, Keam SP, Haupt S, Richardson DR, Haupt Y. E6AP Promotes a Metastatic Phenotype in Prostate Cancer. Iscience. 2019 12/20; 22: 1a
172. Gamucci T, Pizzuti L, Natoli C, Mentuccia L, Sperduti I, Barba M, Sergi D, Iezzi L, Maugeri-Sacca M, Vaccaro A, Magnolfi E, Gelibter A, Barchiesi G, Magri V, D'Onofrio L, Cassano A, Rossi E, Botticelli A, Moscetti L, Omarini C, Fabbri MA, Scinto AF, Corsi D, Carbognin L, Mazzotta M, Bria E, Foglietta J, Samaritani R, Garufi C, Mariani L, Barni S, Mirabelli R, Sarmiento R, Graziano V, Santini D, Marchetti P, Tonini G, Di Lauro L, Sanguineti G, Paoletti G, Tomao S, De Maria R, Veltri E, Paris I, Giotta F, Latorre A, Giordano A, Ciliberto G, Vici P. A Multicenter REtrospective Observational Study of First-Line Treatment with PERtuzumab, Trastuzumab and Taxanes for Advanced HER2 Positive Breast Cancer Patients. RePer Study. Cancer.Biol.Ther. 2019 20(2): 192-200a **IF: 2.879**.
173. Garufi A, Traversi G, Cirone M, D'Orazi G. HIPK2 Role in the Tumor-Host Interaction: Impact on Fibroblasts Transdifferentiation CAF-Like. IUBMB Life. 2019 Dec; a **IF: 3.051**.
174. Garufi A, Traversi G, Gilardini Montani MS, D'Orazi V, Pistritto G, Cirone M, D'Orazi G. Reduced Chemotherapeutic Sensitivity in High Glucose Condition: Implication of Antioxidant Response. Oncotarget. 2019 Jul 23; 10(45): 4691a
175. Giampaolino P, Della Corte L, Foreste V, Vitale SG, Chiofalo B, Cianci S, Zullo F, Bifulco G. Unraveling a Difficult Diagnosis: The Tricks for Early Recognition of Ovarian Cancer. Minerva Med. 2019 Aug; 110(4): 279a **IF: 2.475**.
176. Gilardini Montani MS, Cecere N, Granato M, Romeo MA, Falcinelli L, Ciciarelli U, D'Orazi G, Faggioni A, Cirone M. Mutant p53, Stabilized by its Interplay with HSP90, Activates a Positive Feed-Back Loop between NRF2 and p62 that Induces Chemo-Resistance to Apigenin in Pancreatic Cancer Cells. Cancers (Basel). 2019 May 22; 11(5): E703a **IF: 6.162**.

177. Giordano G, Parcesepe P, D'Andrea MR, Coppola L, Di Raimo T, Remo A, Manfrin E, Fiorini C, Scarpa A, Amoreo CA, Conciatori F, Milella M, Caruso FP, Cerulo L, Porras A, Pancione M. JAK/Stat5-Mediated Subtype-Specific Lymphocyte Antigen 6 Complex, Locus G6D (LY6G6D) Expression Drives Mismatch Repair Proficient Colorectal Cancer. J.Exp.Clin.Cancer Res. 2019 Jan 22; 38(1): 28a **IF: 5.646**.
178. Giusti R, Mazzotta M, Verna L, Sperduti I, Di Pietro FR, Marchetti P, Porzio G. The Incidence of Alcoholism in Patients with Advanced Cancer Receiving Active Treatment in Two Tertiary Care Centers in Italy. Alcohol Alcohol. 2019 Jan; 54(1): 47-50a **IF: 2.777**.
179. Gkountakos A, Sartori G, Falcone I, Piro G, Ciuffreda L, Carbone C, Tortora G, Scarpa A, Bria E, Milella M, Rosell R, Corbo V, Pilotto S. PTEN in Lung Cancer: Dealing with the Problem, Building on New Knowledge and Turning the Game Around. Cancers. 2019 08/09; 11(8): 1141a **IF: 6.162**.
180. Gobbini E, Chiari R, Pizzutillo P, Bordi P, Ghilardi L, Pilotto S, Osman G, Cappuzzo F, Cecere F, Riccardi F, Scotti V, Martelli O, Borra G, Maiello E, Rossi A, Graziano P, Gregorc V, Casartelli C, Sergi C, Del Conte A, Delmonte A, Bareggi C, Cortinovis D, Rizzo P, Tabbo F, Rossi G, Bria E, Galetta D, Tiseo M, Di Maio M, Novello S. Real-World Outcomes According to Treatment Strategies in ALK-Rearranged Non-Small-Cell Lung Cancer (NSCLC) Patients: An Italian Retrospective Study. Clin.Transl.Oncol. 2019 Oct 19; a **IF: 2.441**.
181. Goeman F, De Nicola F, Scalera S, Sperati F, Gallo E, Ciuffreda L, Pallocca M, Pizzuti L, Krasniqi E, Barchiesi G, Vici P, Barba M, Buglioni S, Casini B, Visca P, Pescarmona E, Mazzotta M, De Maria R, Fanciulli M, Ciliberto G, Maugeri-Sacca M. Mutations in the KEAP1-NFE2L2 Pathway Define a Molecular Subset of Rapidly Progressing Lung Adenocarcinoma. J.Thorac.Oncol. 2019 14(11): 1924a **IF: 12.460**.
182. Gori S, Puglisi F, Moroso S, Fabi A, La Verde N, Frassoldati A, Tarenzi E, Garrone O, Vici P, Laudadio L, Cretella E, Turazza M, Foglietta J, Leonardi V, Cavanna L, Barni S, Galanti D, Russo A, Marchetti F, Valerio M, Lunardi G, Alongi F, Inno A. The HERBA Study: A Retrospective Multi-Institutional Italian Study on Patients with Brain Metastases from HER2-Positive Breast Cancer. Clin.Breast Cancer. 2019 Aug; 19(4): e501a **IF: 2.762**.
183. Grammatica A, Piazza C, Pellini R, Montalto N, Lancini D, Vural A, Barbara F, Ferrari M, Nicolai P. Free Flaps for Advanced Oral Cancer in the "Older Old" and "Oldest Old": A Retrospective Multi-Institutional Study. Frontiers in Oncology. 2019 Jul; 9: 604a **IF: 4.137**.
184. Granato M, Gilardini Montani MS, Zompetta C, Santarelli R, Gonnella R, Romeo MA, D'Orazi G, Faggioni A, Cirone M. Quercetin Interrupts the Positive Feedback Loop between STAT3 and IL-6, Promotes Autophagy, and Reduces ROS, Preventing EBV-Driven B Cell Immortalization. Biomolecules. 2019 09/12; 9(9): 482a **IF: 4.694**.
185. Grassadonia A, Di Marino P, Ficorella C, Cortellini A, Cannita K, Parisi A, Gamucci T, Zoratto F, Vici P, Barba M. Impact of Primary Tumor Location in Patients with RAS Wild-Type Metastatic Colon Cancer Treated with First-Line Chemotherapy Plus Anti-EGFR Or Anti-VEGF Monoclonal Antibodies: A Retrospective Multicenter Study. a **IF: 3.182**.
186. Grassi L, Alfonsi R, Francescangeli F, Signore M, De Angelis ML, Addario A, Costantini M, Flex E, Ciolfi A, Pizzi S, Bruselles A, Pallocca M, Simone G, Haoui M, Falchi M, Milella M, Sentinelli S, Di Matteo P, Stellacci E, Gallucci M, Muto G, Tartaglia M, De Maria R, Bonci D. Organoids as a New Model for Improving Regenerative Medicine and Cancer Personalized Therapy in Renal Diseases. Cell.Death Dis. 2019 Feb 27; 10(3): 201a **IF: 5.959**.
187. Graziano V, Grassadonia A, Iezzi L, Vici P, Pizzuti L, Barba M, Quinzii A, Camplese A, Di Marino P, Peri M, Veschi S, Alberti S, Gamucci T, Di Gioacchino M, De Tursi M, Natoli C, Tinari N. Combination of Peripheral Neutrophil-to-Lymphocyte Ratio and Platelet-to-Lymphocyte Ratio is Predictive of Pathological Complete Response After Neoadjuvant Chemotherapy in Breast Cancer Patients. Breast. 2019 Apr; 44: 33a **IF: 3.494**.
188. Grisanti S, Bianchi S, Locati LD, Triggiani L, Vecchio S, Bonetta A, Bergamini C, Conte P, Airoldi M, Merlano M, Carlini P, Ibrahim T, Rossetto C, Alfieri S, Pronzato P, Tonoli S, Maroldi R, Nicolai P, Resteghini C, Magrini SM, Berruti A. Bone Metastases from Head and Neck Malignancies: Prognostic Factors and Skeletal-Related Events. PLoS One. 2019 Mar 20; 14(3): e0213934a **IF: 2.776**.

189. Grossi F, Genova C, CrinÃ² L, Delmonte A, Turci D, Signorelli D, Passaro A, Soto Parra H, Catino A, Landi L, Gelsomino F, Tiseo M, Puppo G, Roila F, Ricciardi S, Tonini G, Cognetti F, Toschi L, Tassinari D, Scoppola A, Giannarelli D, Cortesi E. Real-Life Results from the overall Population and Key Subgroups within the Italian Cohort of Nivolumab Expanded Access Program in Non-Squamous Non-Small Cell Lung Cancer. European Journal of Cancer (Oxford, England : 1990). 2019 12; 123: 72a **IF: 6.680**.

190. Iacorossi L, Gambalunga F, De Domenico R, Serra V, Marzo C, Carlini P. Qualitative Study of Patients with Metastatic Prostate Cancer to Adherence of Hormone Therapy. Eur,J.Oncol.Nurs. 2019 Feb; 38: 8a **IF: 1.697.**

191. Iacorossi L, Gambalunga F, Molinaro S, De Domenico R, Giannarelli D, Fabi A. The Effectiveness of the Sport "Dragon Boat Racing" in Reducing the Risk of Lymphedema Incidence: An Observational Study. Cancer Nurs. 2019 Jul/Aug; 42(4): 323a **IF: 2.022**.

192. Infante M, Fabi A, Cognetti F, Gorini S, Caprio M, Fabbri A. RANKL/RANK/OPG System Beyond Bone Remodeling: Involvement in Breast Cancer and Clinical Perspectives. J.Exp.Clin.Cancer Res. 2019 Jan 8; 38(1): 12a **IF: 5.646**.

193. Iocca O, Farcomeni A, De Virgilio A, Di Maio P, Golusinski P, Malvezzi L, Pellini R, Golusinski W, Rassekh CH, Spriano G. Prognostic Significance of Lymph Node Yield and Lymph Node Ratio in Patients Affected by Squamous Cell Carcinoma of the Oral Cavity and Oropharynx: Study Protocol for a Prospective, Multicenter, Observational Study. Contemp.Clin.Trials Commun. 2019 Jan 14; 14: 100324a

194. Koudriavtseva T,Salvetti M. Brain Fibrinogen Deposition Plays a Key Role in MS Pathophysiology - Commentary. Mult.Scler. 2019 Oct; 25(11): 1437a **IF: 5.649**.

195. Krasniqi E, Barchiesi G, Pizzuti L, Mazzotta M, Venuti A, Maugeri-Sacca M, Sanguineti G, Massimiani G, Sergi D, Carpano S, Marchetti P, Tomao S, Gamucci T, De Maria R, Tomao F, Natoli C, Tinari N, Ciliberto G, Barba M, Vici P. Immunotherapy in HER2-Positive Breast Cancer: State of the Art and Future Perspectives. J.Hematol.Oncol. 2019 Oct 29; 12(1): 111a **IF: 8.731**

196. La Rosa VL, Barra F, Chiofalo B, Platania A, Di Guardo F, Conway F, Di Angelo Antonio S, Lin L. An Overview on the Relationship between Endometriosis and Infertility: The Impact on Sexuality and Psychological Well-being. J.Psychosom.Obstet.Gynaecol. 2019 08/30; : 1a **IF: 1.900**.

197. Lamberti D, Cristinziano G, Porru M, Leonetti C, Egan JB, Shi CX, Buglioni S, Amoreo CA, Castellani L, Borad MJ, Alema S, Anastasi S, Segatto O. HSP90 Inhibition Drives Degradation of FGFR2 Fusion Proteins: Implications for Treatment of Cholangiocarcinoma. Hepatology. 2019 Jan; 69(1): 131-142.a **IF: 14.971**.

198. Lambertini M, Poggio F, Bruzzone M, Conte B, Bighin C, de Azambuja E, Giuliano M, De Laurentiis M, Cognetti F, Fabi A, Bisagni G, Durando A, Turletti A, Urracci Y, Garrone O, Puglisi F, Montemurro F, Ceppi M, Del Mastro L, investigators G. Dose-Dense Adjuvant Chemotherapy in HER2-Positive Early Breast Cancer Patients before and After the Introduction of Trastuzumab: Exploratory Analysis of the GIM2 Trial. International Journal of Cancer. 2019 11/13; : 10.1002/ijc.32789a **IF:4.982**.

199. Landi L, Chiari R, Tiseo M, D'Inca F, Dazzi C, Chella A, Delmonte A, Bonanno L, Giannarelli D, Cortinovis DL, De Marinis F, Borra G, Morabito A, Gridelli C, Galetta D, Barbieri F, Grossi F, Capelletto E, Minuti G, Mazzoni F, Verusio C, Bria E, Ali G, Bruno R, Proietti A, Fontanini G, Crino L, Cappuzzo F. Crizotinib in MET Deregulated Or ROS1 Rearranged Pretreated Non-Small-Cell Lung Cancer (METROS): A Phase II, Prospective, Multicentre, Two-Arms Trial. Clin.Cancer Res. 2019 Aug 15; a **IF: 8.911**.

200. Landi L, D'Incà F, Gelibter A, Chiari R, Grossi F, Delmonte A, Passaro A, Signorelli D, Gelsomino F, Galetta D, Giannarelli D, Soto Parra H, Minuti G, Tiseo M, Migliorino MR, Cognetti F, Toschi L, Bidoli P, Piantedosi F, Calabro' L, Cappuzzo F. Bone Metastases and Immunotherapy in Patients with Advanced Non-Small-Cell Lung Cancer. Journal for Immunotherapy of Cancer. 2019 11/21; 7(1): 316a **IF: 8.728**.

201. Langiano N, Fiorelli S, Deana C, Baroselli A, Bignami EG, Matellon C, Pompei L, Tornaghi A, Piccioni F, Orsetti R, Coccia C, Sacchi N, D'Andrea R, Brazzi L, Franco C, Accardo R, Di Fuccia A, Baldinelli F, De Negri P, Gratarola A, Angeletti C, Pugliese F, Micozzi MV, Massullo D, Della Rocca G.

Airway Management in Anesthesia for Thoracic Surgery: A "Real Life" Observational Study. Journal of Thoracic Disease. 2019 08; 11(8): 3257a **IF: 2.027**.

202. Lasala R, Santoleri F, Romagnoli A, Musicco F, Costantini A. Dosage Adjustments in Pivotal Clinical Trials with Oral Targeted Therapies in Solid Tumors Conducted in Europe. Eur.J.Clin.Pharmacol. 2019 May; a **IF: 2.774.**

203. Latina R, De Marinis MG, Giordano F, Osborn JF, Giannarelli D, Di Biagio E, Varrassi G, Sansoni J, Bertini L, Baglio G, D'Angelo D, Baldeschi GC, Piredda M, Carassiti M, Camilloni A, Paladini A, Casale G, Mastroianni C, Notaro P, PRG, Pain Researchers Group into Latium Region, Diamanti P, Coaccioli S, Tarsitani G, Cattaruzza MS. Epidemiology of Chronic Pain in the Latium Region, Italy: A Cross-Sectional Study on the Clinical Characteristics of Patients Attending Pain Clinics. Pain Manag.Nurs. 2019 Aug; 20(4): 373a **IF: 1.455**.

204. Latini A, Alei L, Covello R, Cristaudo A, Colafigli M, Dona MG, Orsini D, Morrone A, Pellini R, Pichi B. Tonsillar Kaposi Sarcoma in an HIV-Negative Patient. Aids. 2019 Jun 1; 33(7): 1263a **IF: 4.499**.

205. Lattante S, Doronzio PN, Marangi G, Conte A, Bisogni G, Bernardo D, Russo T, Lamberti D, Patrizi S, Apollo FP, Lunetta C, Scarlino S, Pozzi L, Zollino M, Riva N, Sabatelli M. Coexistence of Variants in TBK1 and in Other ALS-Related Genes Elucidates an Oligogenic Model of Pathogenesis in Sporadic ALS. Neurobiol.Aging. 2019 Mar 27; a **IF: 4.398**.

206. Lattanzio R, Iezzi M, Sala G, Tinari N, Falasca M, Alberti S, Buglioni S, Mottolese M, Perracchio L, Natali PG, Piantelli M. PLC-Gamma-1 Phosphorylation Status is Prognostic of Metastatic Risk in Patients with Early-Stage Luminal-A and -B Breast Cancer Subtypes. BMC Cancer. 2019 Jul 30; 19(1): 747a **IF: 2.933**.

207. Lauretta R, Sansone A, Sansone M, Romanelli F, Appetecchia M. Endocrine Disrupting Chemicals: Effects on Endocrine Glands. Front.Endocrinol.(Lausanne). 2019 Mar 21; 10: 178a **IF: 3.634**.

208. Lee AW, Ng WT, Pan JJ, Chiang CL, Poh SS, Choi HC, Ahn YC, AlHussain H, Corry J, Grau C, Gregoire V, Harrington KJ, Hu CS, Kwong DL, Langendijk JA, Le QT, Lee NY, Lin JC, Lu TX, Mendenhall WM, O'Sullivan B, Ozyar E, Peters LJ, Rosenthal DI, Sanguineti G, Soong YL, Tao Y, Yom SS, Wee JT. International Guideline on Dose Prioritization and Acceptance Criteria in Radiation Therapy Planning for Nasopharyngeal Carcinoma. Int.J.Radiat.Oncol.Biol.Phys. 2019 Nov; 105(3): 567a **IF: 6.203**.

209. Leonetti E, Gesualdi L, Scheri KC, Dinicola S, Fattore L, Masiello MG, Cucina A, Mancini R, Bizzarri M, Ricci G, Catizone A. C-Src Recruitment is Involved in c-MET-Mediated Malignant Behaviour of NT2D1 Non-Seminoma Cells. Int.J.Mol.Sci. 2019 Jan 14; 20(2): E320 **IF: 4.183**.

210. Levi Sandri GB, Ettorre GM, Aldrighetti L, Cillo U, Dalla Valle R, Guglielmi A, Mazzaferro V, Ferrero A, Di Benedetto F, Gruttadauria S, De Carlis L, Vennarecci G, I Go MILS Group on HCC. Laparoscopic Liver Resection of Hepatocellular Carcinoma Located in Unfavorable Segments: A Propensity Score-Matched Analysis from the I Go MILS (Italian Group of Minimally Invasive Liver Surgery) Registry (Gian Luca Grazi). Surg.Endosc. 2019 May; 33(5): 1451a **IF: 3.209**

211. Logozzi M, Spugnini E, Mizzoni D, Di Raimo R, Fais S. Extracellular Acidity and Increased Exosome Release as Key Phenotypes of Malignant Tumors. Cancer Metastasis Rev. 2019 Feb 4; a IF:6.667.

212. Lombardi D, Taboni S, Paderno A, Giordano D, Bertagna F, Albano D, Barbieri V, Spriano G, Mercante G, Piana S, Bellafiore S, Cappelli C, Nicolai P. Lateral Neck Dissection for Aggressive Variants of Well-Differentiated Thyroid Cancer. Endocr.Pract. 2019 Apr; 25(4): 328a **IF: 4.149**.

213. Lombardi G, De Salvo GL, Brandes AA, Eoli M, Ruda R, Faedi M, Lolli I, Pace A, Daniele B, Pasqualetti F, Rizzato S, Bellu L, Pambuku A, Farina M, Magni G, Indraccolo S, Gardiman MP, Soffietti R, Zagonel V. Regorafenib Compared with Lomustine in Patients with Relapsed Glioblastoma (REGOMA): A Multicentre, Open-Label, Randomised, Controlled, Phase 2 Trial. Lancet Oncol. 2019 Jan; 20(1): 110-119a **IF: 35.386**.

214. Lorenzano S, Inglese M, Koudriavtseva T. Editorial: Role of Coagulation Pathways in Neurological Diseases. Front.Neurol. 2019 Jul 23; 10: 791a **IF: 2.635**.

215. Loria R, Giliberti C, Bedini A, Palomba R, Caracciolo G, Ceci P, Falvo E, Marconi R, Falcioni R, Bossi G, Strigari L. Very Low Intensity Ultrasounds as a New Strategy to Improve Selective Delivery of Nanoparticles-Complexes in Cancer Cells. J.Exp.Clin.Cancer Res. 2019 Jan 3; 38(1): 1a **IF: 5.646**.

216. Luca R, di Blasio G, Gallo D, Monteleone V, Manni I, Fici L, Buttarelli M, Ciolli G, Pellegrino M, Teveroni E, Maiullari S, Ciucci A, Apollo A, Mancini F, Gentileschi MP, Zannoni GF, Pontecorvi A, Scambia G, Moretti F. Estrogens Counteract Platinum-Chemosensitivity by Modifying the Subcellular Localization of MDM4. Cancers (Basel). 2019 Sep 12; 11(9): E1349a **IF: 6.162**.
217. Lurvink RJ, Villeneuve L, Govaerts K, de Hingh IHJT, Moran BJ, Deraco M, Van der Speeten K, Glehen O, Kepenekian V, Kusamura S, List of PSOGI collaborators. The Delphi and GRADE Methodology used in the PSOGI 2018 Consensus Statement on Pseudomyxoma Peritonei and Peritoneal Mesothelioma. Eur,J.Surg.Oncol. 2019 Mar 23.
218. Maggi G, Terrenato I, Giacomelli L, Zoccali C, Condoleo MF, Falcicchio C, Baldi J, Vari S, Ferraresi V, Biagini R, Pugliese P. Sarcoma Patients' Quality of Life from Diagnosis to Yearly Follow-Up: Experience from an Italian Tertiary Care Center. Future Oncol. 2019 Sep; 15(27): 3125a **IF: 2.279**.
219. Maggi M, Panebianco V, Mosca A, Salciccia S, Gentilucci A, Di Pierro G, Busetto GM, Barchetti G, Campa R, Sperduti I, Del Giudice F, Sciarra A. Prostate Imaging Reporting and Data System 3 Category Cases at Multiparametric Magnetic Resonance for Prostate Cancer: A Systematic Review and Meta-Analysis. Eur.Urol.Focus. 2019 Jul 3.
220. Magistri P, Battistelli C, Toietta G, Strippoli R, Sagnotta A, Forgione A, Di Benedetto F, Uccini S, Vittorioso P, D'Angelo F, Aurello P, Ramacciato G, Nigri G. In Vivo Bioluminescence-Based Monitoring of Liver Metastases from Colorectal Cancer: An Experimental Model. J.Microsc.Ultrastruct. 2019 Jul-Sep; 7(3): 136.
221. Magnani C, Calvieri A, Giannarelli D, Espino M, Casale G. Peripherally Inserted Central Catheter, Midline, and "Short" Midline in Palliative Care: Patient-Reported Outcome Measures to Assess Impact on Quality of Care. J.Vasc.Access. 2019 Sep; 20(5): 475a **IF: 1.397**.
222. Magnani C, Mastroianni C, Giannarelli D, Stefanelli MC, Di Cienzo V, Valerioti T, Casale G. Oral Hygiene Care in Patients with Advanced Disease: An Essential Measure to Improve Oral Cavity Conditions and Symptom Management. Am,J.Hosp.Palliat.Care. 2019 36(9): 815a **IF: 1.655**.
223. Magnani T, Bracarda S, D'Angelillo RM, Artibani W, Barni S, Beretta G, Brausi M, Caffo O, Corvo R, Gallucci M, Gunelli R, Mirone V, Novara G, Pinto C, Russi E, Santoni R, Tomirotti M, Volpe A, Conti G, Valdagni R. Multidisciplinary Teams for the Proper Management of Patients with Genitourinary Tumors: When Topics Set Scientific Societies' Agenda. Tumori. 2019 Apr; 105(2): 161a **IF: 1.234**.
224. Mandoj C, Tomao L, Conti L. Coagulation in Brain Tumors: Biological Basis and Clinical Implications. Front.Neurol. 2019 Mar 18; 10: 181a **IF: 2.635**.
225. Manni I, de Latouliere L, Gurtner A, Piaggio G. Transgenic Animal Models to Visualize Cancer-Related Cellular Processes by Bioluminescence Imaging. Front.Pharmacol. 2019 Mar 15; 10: 235a **IF: 3.845**.
226. Marchesi F, Cattaneo C, Criscuolo M, Delia M, Dargenio M, Del Principe MI, Spadea A, Fracchiolla NS, Melillo L, Perruccio K, Alati C, Russo D, Garzia M, Brociner M, Cefalo M, Armiento D, Cesaro S, Decembrino N, Mengarelli A, Tumbarello M, Busca A, Pagano L, Sorveglianza Epidemiologica Infezioni nelle Emopatie (SEIFEM) Group. A Bronchoalveolar Lavage-Driven Antimicrobial Treatment Improves Survival in Hematologic Malignancy Patients with Detected Lung Infiltrates: A Prospective Multicenter Study of the SEIFEM Group. Am,J.Hematol. 2019 Oct; 94(10): 1104a **IF: 6.137**.
227. Marchesi F, Pimpinelli F, Di Domenico EG, Renzi D, Gallo MT, Regazzo G, Rizzo MG, Gumenyuk S, Toma L, Marino M, Cordone I, Cantonetti M, Liberati AM, Montanaro M, Ceribelli A, Prignano G, Palombi F, Romano A, Papa E, Pisani F, Spadea A, Arcese W, Ensoli F, Mengarelli A. Association between CMV and Invasive Fungal Infections After Autologous Stem Cell Transplant in Lymphoproliferative Malignancies: Opportunistic Partnership Or Cause-Effect Relationship? Int,J.Mol.Sci. 2019 Mar 19; 20(6): E1373 **IF: 4.183**.
228. Marchesi F, Salvatorelli E, Renzi D, Mengarelli A, Minotti G, Menna P. Efficacy and Safety of Low Dose Ponatinib in a Case of Ph-Positive Acute Lymphoblastic Leukaemia. Br,J.Haematol. 2019 187(1): e15-e17.a **IF: 5.206**.
229. Marconi R, Serafini A, Giovanetti A, Bartoleschi C, Pardini MC, Bossi G, Strigari L. Cytokine Modulation in Breast Cancer Patients Undergoing Radiotherapy: A Revision of the most Recent Studies. Int,J.Mol.Sci. 2019 Jan 17; 20(2): E382 **IF: 4.183**.

230. Maria Cecilia Cercato, Elvira Colella, Alessandra Fabi, Isabella Bertazzi, Virginia Scarinci, Alessandro Franceschini, Cristina Cenci, Francesco Cognetti. 2019. "Applicazione Della Medicina Basata Sulla Narrazione Nel Trattamento Chemioterapico Di Pazienti Oncologici (Studio AMENO: Fase Pilota) in:II Congresso Nazionale Simen. La Complicità Nella Cura. Il Racconto Dei Racconti." Arezzo, 10-12 Maggio 2018.

231. Marrocco I, Altieri F, Rubini E, Paglia G, Chichiarelli S, Giamogante F, Macone A, Perugia G, Magliocca FM, Gurtner A, Maras B, Ragno R, Patsilinakos A, Manganaro R, Eufemi M. Shmt2: A Stat3 Signaling New Player in Prostate Cancer Energy Metabolism. Cells. 2019 Sep 6; 8(9): E1048a **IF: 5.656**.

232. Martelli AM, Paganelli F, Fazio A, Bazzichetto C, Conciatori F, McCubrey JA. The Key Roles of PTEN in T-Cell Acute Lymphoblastic Leukemia Development, Progression, and Therapeutic Response. Cancers. 2019 05/06; 11(5): 629a **IF: 6.162**.

233. Martinello R, Becco P, Vici P, Airoldi M, Del Mastro L, Garrone O, Barone C, Pizzuti L, D'Alonzo A, Bellini E, Milani A, Bonzano A, Montemurro F. Trastuzumab-Related Cardiotoxicity in Patients with Nonlimiting Cardiac Comorbidity. Breast J. 2019 May; 25(3): 444a **IF: 2.433**.

234. Maschio M, Aguglia U, Avanzini G, Banfi P, Buttinelli C, Capovilla G, Casazza MML, Colicchio G, Coppola A, Costa C, Dainese F, Daniele O, De Simone R, Eoli M, Gasparini S, Giallonardo AT, La Neve A, Maialetti A, Mecarelli O, Melis M, Michelucci R, Paladin F, Pauletto G, Piccioli M, Quadri S, Ranzato F, Rossi R, Salmaggi A, Terenzi R, Tisei P, Villani F, Vitali P, Vivalda LC, Zaccara G, Zarabla A, Beghi E, Brain Tumor-related Epilepsy study group of Italian League Against Epilepsy (LICE). Management of Epilepsy in Brain Tumors. Neurol.Sci. 2019 Oct; 40(10): 2217a **IF: 2.484**.

235. Maschio M, Mengarelli A, Zarabla A, Giannarelli D, Maialetti A, Gumenyuk S, Renzi D, Palombi F, Pisani F, Romano A, Spadea A, Galie E, Marchesi F. Role of Pregabalin in Treatment of Polyneuropathy in Multiple Myeloma Patients: A Retrospective Study. Clin.Neuropharmacol. 2019 42(5): 167a **IF: 1.272**.

236. Maschio M, Pauletto G, Zarabla A, Maialetti A, Lus T, Villani V, Fabi A, Koudriavtseva T, Giannarelli D. Perampanel in Patients with Brain Tumor-Related Epilepsy in Real-Life Clinical Practice: A Retrospective Analysis. Int.J.Neurosci. 2019 Jun; 129(6): 593a **IF: 1.852**.

237. Maschio M, Zarabla A, Maialetti A, Marchesi F, Giannarelli D, Gumenyuk S, Pisani F, Renzi D, GaliÃ¨ E, Mengarelli A. The Effect of Docosahexaenoic Acid and Î±-Lipoic Acid as Prevention of Bortezomib-Related Neurotoxicity in Patients with Multiple Myeloma. Integrative Cancer Therapies. 2019 Jan; 18: 1534735419888584a **IF: 2.634**.

238. Maselli A, Parlato S, Puglisi R, Raggi C, Spada M, Macchia D, Pontecorvi G, Iessi E, Pagano MT, Cirulli F, Gabriele L, Care A, Vici P, Pizzuti L, Barba M, Matarrese P, Pierdominici M, Ortona E. Autoantibodies Specific to ERalpha are Involved in Tamoxifen Resistance in Hormone Receptor Positive Breast Cancer. Cells. 2019 Jul 19; 8(7): E750a **IF: 5.656**.

239. Massa S, Paolini F, Marino C, Franconi R, Venuti A. Bioproduction of a Therapeutic Vaccine Against Human Papillomavirus in Tomato Hairy Root Cultures. Front.Plant.Sci. 2019 Apr 11; 10: 452a **IF: 4.106**.

240. Mastroianni R, Brassetti A, Costantini M, Simone G. Predicting Biological Behaviour of Newly Diagnosed Renal Masses: A Possible Role of Cell Proliferation Biomarkers? Ann.Transl.Med. 2019 Jul; 7(Suppl 3): S143a **IF: 3.689**.

241. Matteoni S, Abbruzzese C, Matarrese P, De Luca G, Mileo AM, Miccadei S, Schenone S, Musumeci F, Haas TL, Sette G, Carapella CM, Amato R, Perrotti N, Signore M, Paggi MG. The Kinase Inhibitor SI113 Induces Autophagy and Synergizes with Quinacrine in Hindering the Growth of Human Glioblastoma Multiforme Cells. J.Exp.Clin.Cancer Res. 2019 May 17; 38(1): 202a **IF: 5.646**.

242. Mazzotta M, Krasniqi E, Barchiesi G, Pizzuti L, Tomao F, Barba M, Vici P. Long-Term Safety and Real-World Effectiveness of Trastuzumab in Breast Cancer. J.Clin.Med. 2019 Feb 18; 8(2): E254 **IF: 5.688**.

243. Mercante G, Anelli A, Giannarelli D, Giordano D, Sinopoli I, Ferreli F, Digiesi G, Appetecchia ML, Barnabei A, Cristalli G, Conti L, Pellini R, Fabio P, Lombardi D, De Virgilio A, Spriano G. Cost-Effectiveness in Transient Hypocalcemia Post-Thyroidectomy. Head Neck. 2019 41(11): 3940-3947a **IF: 2.442**.

244. Mete LS, Vocaturo G, Martayan A, Casini B, Diodoro M, Mannisi E, Vizza E, Stigliano V. P.02.21 Early- Onset Endometrial Cancer Patients are at High Risk for Lynch Syndrome Regardless of Family History. Digestive and Liver Disease. 2019 03/25; 2020/01; 51: e156a **IF: 3.037**
245. Mileo AM, Nistico P, Miccadei S. Polyphenols: Immunomodulatory and Therapeutic Implication in Colorectal Cancer. Front.Immunol. 2019 Apr 11; 10: 729a **IF: 4.716**.
246. Minopoli M, Botti G, Gigantino V, Ragone C, Sarno S, Motti ML, Scognamiglio G, Greggi S, Scaffa C, Roca MS, Stoppelli MP, Ciliberto G, Losito NS, Carriero MV. Targeting the Formyl Peptide Receptor Type 1 to Prevent the Adhesion of Ovarian Cancer Cells Onto Mesothelium and Subsequent Invasion. J.Exp.Clin.Cancer Res. 2019 Nov 8; 38(1): 459a **IF: 5.646**.
247. Minopoli M, Polo A, Ragone C, Ingangi V, Ciliberto G, Pessi A, Sarno S, Budillon A, Costantini S, Carriero MV. Structure-Function Relationship of an Urokinase Receptor-Derived Peptide which Inhibits the Formyl Peptide Receptor Type 1 Activity. Sci.Rep. 2019 Aug 21; 9(1): 12169a **IF: 4.011**.
248. Minotti G, Menna P, Calabrese V, Greco C, Armento G, Annibali O, Marchesi F, Salvatorelli E, Reggiardo G. Pharmacology of Ranolazine Versus Common Cardiovascular Drugs in Patients with Early Diastolic Dysfunction Induced by Anthracyclines Or Nonanthracycline Chemotherapeutics: A Phase 2b Minitrial. J.Pharmacol.Exp.Ther. 2019 Aug; 370(2): 197a **IF: 3.615**.
249. Mistraletti G, Mezzetti A, Anania S, Ionescu Maddalena A, Del Negro S, Giusti GD, Gili A, Iacobone E, Pulitanò SM, Conti G, Bocci MG. (Lorella Pelagalli Collaborator). Improving communication toward ICU families to facilitate understanding and reduce stress. Protocol for a multicenter randomized and controlled Italian study. 2019 Contemp Clin Trials. Nov;86:105847. **IF: 2.280**
250. Molica S, Giannarelli D, Levato L, Mirabelli R, Levato D, Lentini M, Piro E. A Simple Score Based on Geriatric Assessment Predicts Survival in Elderly Newly Diagnosed Chronic Lymphocytic Leukemia Patients. Leuk.Lymphoma. 2019 Mar; 60(3): 845a **IF: 2.674**.
251. Molica S, Giannarelli D, Mirabelli R, Levato L, Shanafelt TD. The Magnitude of Improvement in Progression-Free Survival with Targeted Therapy in relapsed/refractory Chronic Lymphocytic Leukemia Based on Prognostic Risk Category: A Systematic Review and Meta-Analysis. Leuk.Lymphoma. 2019 Jul; 60(7): 1644a **IF: 2.674**.
252. Molica S, Giannarelli D, Montserrat E. Minimal Residual Disease and Survival Outcomes in Patients with Chronic Lymphocytic Leukemia: A Systematic Review and Meta-Analysis. Clin.Lymphoma Myeloma Leuk. 2019 19(7): 423a **IF: 2.274**.
253. Molica S, Giannarelli D, Shanafelt TD. Comparison of Venetoclax Plus Rituximab with B-Cell Receptor Inhibitors in Patients with relapsed/refractory Chronic Lymphocytic Leukemia: A Systematic Review and Network Meta-Analysis. Leuk.Lymphoma. 2019 11/14; : 1a **IF: 2.674**.
254. Monteonofrio L, Valente D, Rinaldo C, Soddu S. Extrachromosomal Histone H2B Contributes to the Formation of the Abscission Site for Cell Division. Cells. 2019 11/05; 8(11): E1391a **IF: 5.656**.
255. Mora Roman JJ, Del Campo M, Villar J, Paolini F, Curzio G, Venuti A, Jara L, Ferreira J, Murgas P, Lladser A, Manubens A, Becker MI. Immunotherapeutic Potential of Mollusk Hemocyanins in Combination with Human Vaccine Adjuvants in Murine Models of Oral Cancer. J.Immunol.Res. 2019 Jan 20; 2019: 7076942a **IF: 3.404**.
256. Morlino S, Dordoni C, Sperduti I, Clark CJ, Piedimonte C, Fontana A, Colombi M, Grammatico P, Copetti M, Castori M. Italian Validation of the Functional Difficulties Questionnaire (FDQ-9) and its Correlation with Major Determinants of Quality of Life in Adults with Hypermobile Ehlers-Danlos syndrome/hypermobility Spectrum Disorder. Am.J.Med.Genet.B.Neuropsychiatr.Genet. 2019 Jan; 180(1): 25a **IF: 3.123**.
257. Morsiani C, Bacalini MG, Santoro A, Garagnani P, Collura S, D'Errico A, de Eguileor M, Grazi GL, Cescon M, Franceschi C, Capri M. The Peculiar Aging of Human Liver: A Geroscience Perspective within Transplant Context. Ageing Res.Rev. 2019 May; 51: 24a **IF: 10.390**.
258. Moschini M, Soria F, Mathieu R, Xylinas E, D'Andrea D, Tan WS, Kelly JD, Simone G, Tuderti G, Meraney A, Krishna S, Konety B, Zamboni S, Baumeister P, Mattei A, Briganti A, Montorsi F, Galucci M, Rink M, Karakiewicz PI, Roupret M, Aziz A, Perry M, Rowe E, Koupparis A, Kassouf W, Scherr DS, Ploussard G, Boorjian SA, Sooriakumaran P, Shariat SF, European Association of Urology - Young

Academic Urologists (EAU-YAU), Urothelial Carcinoma Working Group. Propensity-Score-Matched Comparison of Soft Tissue Surgical Margins Status between Open and Robotic-Assisted Radical Cystectomy. Urol.Oncol. 2019 Mar; 37(3): 179.e1a **IF: 2.863**.

259. Moschini M, Zamboni S, Soria F, Mathieu R, Xylinas E, Tan WS, Kelly JD, Simone G, Meraney A, Krishna S, Konety B, Mattei A, Baumeister P, Mordasini L, Montorsi F, Briganti A, Gallina A, Stabile A, Sanchez-Salas R, Cathelineau X, Rink M, Necchi A, Karakiewicz PI, Roupret M, Koupparis A, Kassouf W, Scherr DS, Ploussard G, Boorjian SA, Lotan Y, Sooriakumaran P, Shariat SF. Open Versus Robotic Cystectomy: A Propensity Score Matched Analysis Comparing Survival Outcomes. J.Clin.Med. 2019 Aug 9; 8(8): E1192a **IF: 5.688**.

260. Mottini C, Napolitano F, Li Z, Gao X, Cardone L. Computer-Aided Drug Repurposing for Cancer Therapy: Approaches and Opportunities to Challenge Anticancer Targets. Semin.Cancer Biol. 2019 Sep 25; a **IF: 9.658**.

261. Mottini C, Tomihara H, Carrella D, Lamolinara A, Iezzi M, Huang JK, Amoreo CA, Buglioni S, Manni I, Robinson FS, Minelli R, Kang Y, Fleming JB, Kim MP, Bristow CA, Trisciuoglio D, Iuliano A, Del Bufalo D, di Bernardo D, Melisi D, Draetta GF, Ciliberto G, Carugo A, Cardone L. Predictive Signatures Inform the Effective Repurposing of Decitabine to Treat K-RAS-Dependent Pancreatic Ductal Adenocarcinoma. Cancer Res. 2019 Sep 5; a **IF: 8.378**.

262. Nava MB, Blondeel P, Botti G, Casabona F, Catanuto G, Clemens MW, De Fazio D, De Vita R, Grotting J, Hammond DC, Harris P, Montemurro P, Mendonca Munhoz A, Nahabedian M, Pompei S, Rancati A, Rigotti G, Salgarello M, Scaperrotta G, Spano A, Stan C, Rocco N. International Expert Panel Consensus on Fat Grafting of the Breast. Plast.Reconstr.Surg.Glob.Open. 2019 Oct 28; 7(10): e2426a

263. Nava MB, Rancati A, De Vita R, Catanuto G, Rocco N. Clarification about "Expert Consensus on the use of a New Bioengineered, Cell-Friendly, Smooth Surface Breast Implant". Aesthet.Surg.J. 2019 Nov; 39(12): NP538a **IF: 3.480**.

264. Nicolazzo C, Busetto GM, Gradilone A, Sperduti I, Del Giudice F, Loreni F, Cortesi E, de Berardinis E, Gazzaniga P, Raimondi C. Circulating Tumor Cells Identify Patients with Super-High-Risk Non-Muscle-Invasive Bladder Cancer: Updated Outcome Analysis of a Prospective Single-Center Trial. Oncologist. 2019 May; 24(5): 612a **IF: 5.252**.

265. Nigri G, Petrucciani N, Pinna AD, Ravaioli M, Jovine E, Minni F, Grazi GL, Chirletti P, Balzano G, Ferla F, De Carlis L, Tisone G, Napoli N, Boggi U, Ramacciato G. Corrigendum to "Evolution of Pancreatectomy with En Bloc Venous Resection for Pancreatic Cancer in Italy. Retrospective Cohort Study on 425 Cases in 10 Pancreatic Referral Units" [Int. J. Surg. 55 (2018) 103-109. Int.J.Surg. 2019 Jul; 67: 129a IF:3.158.

266. Nuvoli B, Amadio B, Cortese G, Benedetti S, Antoniani B, Soriani A, Carosi M, Strigari L, Galati R. The Effect of CELLFOOD(TM) on Radiotherapy Or Combined Chemoradiotherapy: Preclinical Evidence. Ther.Adv.Med.Oncol. 2019 Oct 13; 11: 1758835919878347a **IF: 5.670**.

267. Orosco RK, Tam K, Nakayama M, Holsinger FC, Spriano G. Transoral Supraglottic Laryngectomy using a Next-Generation Single-Port Robotic Surgical System. Head Neck. 2019 Jul; 41(7): 2143a **IF: 2.442**.

268. Pace, A. and V. Villani. 2019. "Palliative Care and Palliative Rehabilitation: Approaches to the End-of-Life." In Neurorehabilitation in Neuro-Oncology, edited by M. Bartolo, R. Soffietti and M. Klein. 1st ed.: Springer International Publishing.

269. Paladini A, Vallati GE, Beomonte Zobel D, Paladini L, Annovazzi A, Sciuto R, Cappelli F, Borzelli A, Pane F, Negroni D, Cernigliaro M, Galbiati A, Del Sette B, Spinetta M, Guzzardi G, Carriero A, Pizzi G. Delivery of Selective Internal Radiation Therapy Complicated by Variant Hepatic Vascular Anatomy. Radiol.Case Rep. 2019 Mar 23; 14(6): 662a

270. Palaia G, Impellizzeri A, Tenore G, Caporali F, Visca P, Del Vecchio A, Galluccio G, Polimeni A, Romeo U. Ex Vivo Histological Analysis of the Thermal Effects Created by a 445-Nm Diode Laser in Oral Soft Tissue Biopsy. Clin.Oral Investig. 2019 11/16; : 10.1007/s00784a **IF: 2.453**.

271. Palchetti S, Caputo D, Digiacomo L, Capriotti AL, Coppola R, Pozzi D, Caracciolo G. Protein Corona Fingerprints of Liposomes: New Opportunities for Targeted Drug Delivery and Early Detection in Pancreatic Cancer. Pharmaceutics. 2019 Jan 15; 11(1): E31 **IF: 4.773**.

272. Pallocca M, Angeli D, Palombo F, Sperati F, Milella M, Goeman F, De Nicola F, Fanciulli M, Nistico P, Quintarelli C, Ciliberto G. Combinations of Immuno-Checkpoint Inhibitors Predictive Biomarkers Only Marginally Improve their Individual Accuracy. J.Transl.Med. 2019 Apr 23; 17(1): 131a **IF: 4.098.**

273. Pane F, Cavaglia E, Silvestre M, Coppola M, Corvino F, Borzelli A, Paladini A, Giurazza F, Corvino A, Zobel DB, Amodio F, Capasso F, Niola R. Successful Endovascular Treatment of a Spontaneous Bleeding Accessory Spleen: A Case Report. Radiol.Case Rep. 2019 Apr 12; 14(7):787.

274. Panozzo G, Staurenghi G, Dalla Mura G, Giannarelli D, Alessio G, Alongi S, Appolloni R, Baldascino A, Boscia F, Caporossi A, Cereda M, D'Ugo E, Fallico M, Avitabile T, Galan A, La Spina C, Lo Giudice G, Mastropasqua L, Palmisano C, Panico C, Parravano MC, Penna R, Pintore P, Vaiano A, Reibaldi M, Rizzo S, Rossi T, Varano M, Virgili G. Prevalence of Diabetes and Diabetic Macular Edema in Patients Undergoing Senile Cataract Surgery in Italy: The DIabetes and CATaract Study. Eur.J.Ophthalmol. 2019 Mar 11; : 1120672119830578a **IF: 1.716.**

275. Paolini F, Bonomo C, Terrenato I, Pennetti A, Covello R, Cristalli G, Venuti A. Beta Human Papillomaviruses in Middle Ear Squamous Cell Carcinoma. Oral Oncol. 2019 Mar; 90: 134a **IF: 3.730.**

276. Papalia R, Panebianco V, Mastroianni R, Del Monte M, Altobelli E, Faiella E, Grasso FR, Bellangino M, Simone G, Ciccozzi M, Angeletti S, D'ovidio G, Catalano C, Gallucci M, Scarpa RM, Muto G. Accuracy of Magnetic Resonance Imaging to Identify Pseudocapsule Invasion in Renal Tumors. World J.Urol. 2019 Apr 25; a **IF: 2.761.**

277. Parodi S, Seniori Costantini A, Crosignani P, Fontana A, Miligi L, Nanni O, Piro S, Ramazzotti V, Rodella S, Tumino R, Vindigni C, Vineis P, Stagnaro E. Childhood Infectious Diseases and Risk of Non-Hodgkin's Lymphoma According to the WHO Classification: A Reanalysis of the Italian Multicenter Case-Control Study. Int.J.Cancer. 2019 May 11; a **IF: 4.982.**

278. Passaro N, Casagrande A, Chiara M, Fosso B, Manzari C, D'Erchia AM, Iesari S, Pisani F, Famulari A, Tulissi P, Mastrosimone S, Maresca MC, Mercante G, Spriano G, Corrado G, Vizza E, Garbuglia AR, Capobianchi MR, Mottini C, Cenci A, Tartaglia M, Costa AN, Pesole G, Crescenzi M. No Metagenomic Evidence of Tumorigenic Viruses in Cancers from a Selected Cohort of Immunosuppressed Subjects. Scientific Reports. 2019 12/24; 9(1): 19815a **IF: 4.011.**

279. Passiglia F, Cappuzzo F, Alabiso O, Bettini AC, Bidoli P, Chiari R, Defferrari C, Delmonte A, Finocchiaro G, Francini G, Gelsomino F, Giannarelli D, Giordano M, Illiano A, Livi L, Martelli O, Natoli C, Puppo G, Ricevuto E, Roca E, Turci D, Galetta D. Efficacy of Nivolumab in Pre-Treated Non-Small-Cell Lung Cancer Patients Harbouring KRAS Mutations. Br.J.Cancer. 2019 Jan; 120(1): 57a **IF: 5.922.**

280. Pellini R, De Virgilio A, Petruzzi G, Pichi B, Mercante G, Malvezzi L, Vidiri A, Spriano G. Low-Grade Fibromyxoid Sarcoma of the Tongue: A Rare Nosological Entity. Otorinolaringologia. 2019 Sep; 69(3): 188a

281. Peri M, Grassadonia A, Iezzi L, Vici P, De Tursi M, Natoli C, Tinari N, Zilli M. A Case of Stage I Vulvar Squamous Cell Carcinoma with Early Relapse and Rapid Disease Progression. Case Rep.Oncol.Med. 2019 Jul 3; 2019: 1018492a

282. Perrone F, Di Maio M, Efficace F, Gallo C, Giannarelli D, Montesarchio V, Riva S. Assessing Financial Toxicity in Patients with Cancer: Moving Away from a One-Size-Fits-all Approach. J.Oncol.Pract. 2019 Aug; 15(8): 460a **IF: 2.509.**

283. Persico M, Aglitti A, Milella M, Coppola C, Messina V, Claar E, Gentile I, Sogari F, Pierri P, Surace LA, Morisco F, Tundo P, Brancaccio G, Serviddio G, Gatti P, Termite AP, Di Costanzo GG, Caroleo B, Cozzolongo R, Coppola N, Longo A, Fontanella L, Federico A, Rosato V, Terrenato I, Masarone M. Real-Life glecaprevir/pibrentasvir in a Large Cohort of Patients with Hepatitis C Virus Infection: The MISTRAL Study. Liver Int. 2019 Jun 7; **IF: 5.542.**

284. Petrozza V, Costantini M, Tito C, Giammusso LM, Sorrentino V, Cacciotti J, Porta N, Iaiza A, Pastore AL, Di Carlo A, Simone G, Carbone A, Gallucci M, Fazi F. Emerging Role of Secreted miR-210-3p as Potential Biomarker for Clear Cell Renal Cell Carcinoma Metastasis. Cancer Biomarkers: Section A of Disease Markers. 2019 11/13; a **IF: 2.859.**

285. Petruzzi G, Zocchi J, Moretto S, Pichi B, Cristalli G, Mercante G, Spriano G, De Virgilio A, Pellini R. Transoral Robotic Retropharyngeal Lymph Node Dissection in a Recurrent Head and Neck Carcinoma. Head Neck. 2019 Nov; 41(11): 4051a **IF: 2.442**.
286. Petti E, Buemi V, Zappone A, Schillaci O, Broccia PV, Dinami R, Matteoni S, Benetti R, Schoeftner S. SFPQ and NONO Suppress RNA: DNA-Hybrid-Related Telomere Instability. Nat.Commun. 2019 Mar 1; 10(1): 1001a **IF: 11.878**.
287. Pichi B, Pellini R, Spriano G. Electrochemotherapy - A Locoregional Therapy with Well-Established Palliative Effect in Patient with Large Recurrent Lesion of Head and Neck. J.Craniomaxillofac.Surg. 2019 Jan; a **IF: 1.942**.
288. Pignata S, Scambia G, Lorusso D, De Giorgi U, Nicoletto MO, Lauria R, Mosconi AM, Sacco C, Omarini C, Tagliaferri P, Ferrandina G, Cinieri S, Savarese A, Valabrega G, Pisano C, Salutari V, Raspagliesi F, Kopf B, Cecere SC, Amadio G, Maltese G, Di Napoli M, Greggi S, Signoriello S, Daniele G, Sacco A, Losito S, Normanno N, Perrone F, Gallo C, Piccirillo MC, MITO Investigators. The MITO CERV-2 Trial: A Randomized Phase II Study of Cetuximab Plus Carboplatin and Paclitaxel, in Advanced Or Recurrent Cervical Cancer. Gynecol.Oncol. 2019 Jun; 153(3): 535-540a IF:4.393.
289. Pillai SR, Damaghi M, Marunaka Y, Spugnini EP, Fais S, Gillies RJ. Causes, Consequences, and Therapy of Tumors Acidosis. Cancer Metastasis Rev. 2019 Jun; 38(1-2): 205a **IF: 6.667**.
290. Pinzi V, Landoni V, Cattani F, Lazzari R, Jereczek-Fossa BA, Orecchia R. IMRT and Brachytherapy Comparison in Gynaecological Cancer Treatment: Thinking Over Dosimetry and Radiobiology. Ecancermedicalscience. 2019 Dec 17; 13: 993a
291. Piredda M, Fiorini J, Facchinetti G, Biagioli V, Marchetti A, Conti F, Iacorossi L, Giannarelli D, Matarese M, De Marinis MG. Risk Factors for a Difficult Intravenous Access: A Multicentre Study Comparing Nurses' Beliefs to Evidence. J.Clin.Nurs. 2019 Oct; 28(19-20): 3492a **IF: 1.757**.
292. Pisciottani A, Biancolillo L, Ferrara M, Valente D, Sardina F, Monteonofrio L, Camerini S, Crescenzi M, Soddu S, Rinaldo C. HIPK2 Phosphorylates the Microtubule-Severing Enzyme Spastin at S268 for Abscission. Cells. 2019 Jul 5; 8(7): E684a **IF: 5.656**.
293. Pizzuti L, Krasniqi E, Barchiesi G, Mazzotta M, Barba M, Amodio A, Massimiani G, Pelle F, Kayal R, Vizza E, Grassadonia A, Tomao S, Venuti A, Gamucci T, Marchetti P, Natoli C, Sanguineti G, Ciliberto G, Vici P. Eribulin in Triple Negative Metastatic Breast Cancer: Critic Interpretation of Current Evidence and Projection for Future Scenarios. . Journal of Cancer. 2019 10(24): 5903a **IF: 3.182**.
294. Pizzuti L, Giordano A, Michelotti A, Mazzotta M, Natoli C, Gamucci T, De Angelis C, Landucci E, Diodati L, Iezzi L, Mentuccia L, Fabbri A, Barba M, Sanguineti G, Marchetti P, Tomao S, Mariani L, Paris I, Lorusso V, Vallarelli S, Cassano A, Airoldi F, Orlandi A, Moscetti L, Sergi D, Sarobba MG, Tonini G, Santini D, Sini V, Veltri E, Vaccaro A, Ferrari L, De Tursi M, Tinari N, Grassadonia A, Greco F, Botticelli A, La Verde N, Zamagni C, Rubino D, Cortesi E, Magri V, Pomati G, Scagnoli S, Capomolla E, Kayal R, Scinto AF, Corsi D, Cazzaniga M, Laudadio L, Forciniti S, Mancini M, Carbognin L, Seminara P, Barni S, Samaritani R, Roselli M, Portarena I, Russo A, Ficorella C, Cannita K, Carpano S, Pistelli M, Berardi R, De Maria R, Sperduti I, Ciliberto G, Vici P. Palbociclib Plus Endocrine Therapy in HER2 Negative, Hormonal Receptor-Positive, Advanced Breast Cancer: A Real-World Experience. J.Cell.Physiol. 2019 Jun; 234(6): 7708a **IF: 4.522**.
295. Pizzuti L, Krasniqi E, Barchiesi G, Della Giulia M, Izzo F, Sanguineti G, Marchetti P, Mazzotta M, Giusti R, Botticelli A, Gamucci T, Natoli C, Grassadonia A, Tinari N, Iezzi L, Tomao S, Tomao F, Tonini G, Santini D, Astone A, Michelotti A, De Angelis C, Mentuccia L, Vaccaro A, Magnolfi E, Gelibter A, Magri V, Cortesi E, D'Onofrio L, Cassano A, Rossi E, Cazzaniga M, Moscetti L, Omarini C, Piacentini F, Fabbri MA, Scinto AF, Corsi D, Carbognin L, Bria E, La Verde N, Samaritani R, Garufi C, Barni S, Mirabelli R, Sarmiento R, Veltri EM, D'Auria G, Paris I, Giotta F, Lorusso V, Cardillo F, Landucci E, Mauri M, Ficorella C, Roselli M, Adamo V, Ricciardi GRR, Russo A, Berardi R, Pistelli M, Fiorio E, Cannita K, Sini V, D'Ostilio N, Foglietta J, Greco F, Zamagni C, Garrone O, Di Cocco B, Baldini E, Livi L, Desideri I, Meattini I, Sarobba G, Del Medico P, De Tursi M, Generali D, De Maria R, Risi E, Ciliberto G, Sperduti I, Villa A, Barba M, Di Leo A, Vici P. Distinct HR Expression Patterns significantly Affect the Clinical Behavior of Metastatic HER2+ Breast Cancer and Degree of Benefit from Novel Anti-HER2 Agents in the Real World Setting. Int.J.Cancer. 2019 Jul 22; a **IF: 4.982**.

296. Plantone D, Inglese M, Salvetti M, Koudriavtseva T. A Perspective of Coagulation Dysfunction in Multiple Sclerosis and in Experimental Allergic Encephalomyelitis. Front.Neurol. 2019 Jan 14; 9: 1175a **IF: 2.635**.
297. Plantone D, Piantadosi C, Ruggieri S, Anelli V, Koudriavtseva T. Tumefactive Demyelinating Lesions and Pregnancy. Neurol.India. 2019 Nov; 67(6): 1519a **IF: 2.708**.
298. Plebani M, Banfi G, Bernardini S, Bondanini F, Conti L, Dorizzi R, Ferrara FE, Mancini R, Trenti T. Serum Or Plasma? an Old Question Awaiting for New Answers. Clin Chem Lab Med. 2019 a **IF: 3.638**.
299. Policicchio D, Dipellegrini G, Muggianu G, Pintus A, Sgaramella E, Veneziani Santonio F, Boccaletti R. Flexible Fiber CO2 Laser in Microsurgical Treatment of Intraventricular Tumors: Usefulness and Limitations. World Neurosurg. 2019 Feb; 122: e427a **IF: 1.723**.
300. Policicchio D, Doda A, Muggianu G, Dipellegrini G, Boccaletti R. Ethical and Therapeutic Dilemmas in Glioblastoma Management during Pregnancy: Two Case Reports and Review of the Literature. Surg.Neurol.Int. 2019 Mar 26; 10: 41a
301. Pompili L, Maresca C, Dello Stritto A, Biroccio A, Salvati E. BRCA2 Deletion Induces Alternative Lengthening of Telomeres in Telomerase Positive Colon Cancer Cells. Genes. 2019 09/10; 10(9): 697a **IF: 3.331.**
302. Procopio G, Apollonio G, Cognetti F, Miceli R, Milella M, Mosca A, Chiuri VE, Bearz A, Morelli F, Ortega C, Atzori F, Donini M, Ratta R, Raimondi A, Claps M, Martinetti A, Capitanio U, de Braud FG, Cappelletti V, Verzoni E. Sorafenib Versus Observation Following Radical Metastasectomy for Clear-Cell Renal Cell Carcinoma: Results from the Phase 2 Randomized Open-Label RESORT Study. Eur.Urol.Oncol. 2019 Sep 18.
303. Prosperini L, Cortese A, Lucchini M, Boffa L, Borriello G, Buscarinu MC, Capone F, Centonze D, De Fino C, De Pascalis D, Fantozzi R, Ferraro E, Filippi M, Galgani S, Gasperini C, Haggiag S, Landi D, Marfia G, Mataluni G, Millefiorini E, Mirabella M, Monteleone F, Nociti V, Pontecorvo S, Romano S, Ruggieri S, Salvetti M, Tortorella C, Zannino S, Di Battista G. Exit Strategies for "Needle Fatigue" in Multiple Sclerosis: A Propensity Score-Matched Comparison Study. J.Neurol. 2019 11/13; : 10.1007/s00415a **IF: 4.204**.
304. Pulito C, Korita E, Sacconi A, Valerio M, Casadei L, Lo Sardo F, Mori F, Ferraiuolo M, Grasso G, Maidecchi A, Lucci J, Sudol M, Muti P, Blandino G, Strano S. Dropwort-Induced Metabolic Reprogramming Restrains YAP/TAZ/TEAD Oncogenic Axis in Mesothelioma. J.Exp.Clin.Cancer Res. 2019 Aug 9; 38(1): 349a **IF: 5.646**.
305. Reda G, Cassin R, Gentile M, Mauro FR, Giannarelli D, Fattizzo B, Barbieri M, Silvestris I, Fabris S, Morabito F, Neri A, Barcellini W, Cortelezzi A. IgA Hypogammaglobulinemia Predicts Outcome in Chronic Lymphocytic Leukemia. Leukemia. 2019 Jun; 33(6): 1519a **IF: 9.944**.
306. Reislander T, Lombardi EP, Groelly FJ, Miar A, Porru M, Di Vito S, Wright B, Lockstone H, Biroccio A, Harris A, Londono-Vallejo A, Tarsounas M. BRCA2 Abrogation Triggers Innate Immune Responses Potentiated by Treatment with PARP Inhibitors. Nat.Commun. 2019 Jul 17; 10(1): 3143a **IF: 11.878**.
307. Rihawi K, Giannarelli D, Galetta D, Delmonte A, Giavarra M, Turci D, Garassino M, Tiseo M, Barbieri F, Panni S, Ardizzoni A. BRAF Mutant NSCLC and Immune Checkpoint Inhibitors: Results from a Real-World Experience. J.Thorac.Oncol. 2019 Mar; 14(3): e57a **IF: 12.460**.
308. Rinoldi C, Costantini M, Kijenska-Gawronska E, Testa S, Fornetti E, Heljak M, Cwiklinska M, Buda R, Baldi J, Cannata S, Guzowski J, Gargioli C, Khademhosseini A, Swieszkowski W. Tendon Tissue Engineering: Effects of Mechanical and Biochemical Stimulation on Stem Cell Alignment on Cell-Laden Hydrogel Yarns. Adv.Healthc.Mater. 2019 Apr; 8(7): e1801218a **IF: 6.270**.
309. Riva S, Bryce J, De Lorenzo F, Del Campo L, Di Maio M, Efficace F, Frontini L, Giannarelli D, Gitto L, Iannelli E, Jommi C, Montesarchio V, Traclo F, Vaccaro CM, Gallo C, Perrone F. Development and Validation of a Patient-Reported Outcome Tool to Assess Cancer-Related Financial Toxicity in Italy: A Protocol. BMJ Open. 2019 Sep 9; 9(9): e031485a **IF: 2.376**.

310. Roberto M, Botticelli A, Cecere F, Cognetti F, Giusti R, Gelibter A, Lugini A, Nelli F, Nuti M, Santini D, Marchetti P. Immunotherapy in Non-Small Cell Lung Cancer Patients: Back to the Future. Recenti Prog.Med. 2019 12; 110(12): 587a.
311. Rogliani P, Matera MG, Facciolo F, Page C, Cazzola M, Calzetta L. Beclomethasone Dipropionate, Formoterol Fumarate and Glycopyrronium Bromide: Synergy of Triple Combination Therapy on Human Airway Smooth Muscle Ex Vivo. Br.J.Pharmacol. 2019 10/29; : 10.1111/bph.14909a **IF: 6.583**.
312. Roila F, Fumi G, Ruggeri B, Antonuzzo A, Ripamonti C, Fatigoni S, Cavanna L, Gori S, Fabi A, Marzano N, Graiff C, De Sanctis V, Mirabile A, Serpentini S, Bocci C, Pino MS, Cilenti G, Verusio C, Ballatori E, NICSO (Network Italiano per le Cure di Supporto in Oncologia). Prevalence, Characteristics, and Treatment of Fatigue in Oncological Cancer Patients in Italy: A Cross-Sectional Study of the Italian Network for Supportive Care in Cancer (NICSO). Support.Care Cancer. 2019 Mar; 27(3): 1041a **IF: 2.754**.
313. Rollo F, Dona MG, Pichi B, Pellini R, Covello R, Benevolo M. Evaluation of the Anyplex II HPV28 Assay in the Detection of Human Papillomavirus in Archival Samples of Oropharyngeal Carcinomas. Arch.Pathol.Lab.Med. 2019 Sep 11; a **IF: 4.151**.
314. Rollo F, Pichi B, Benevolo M, Giuliani M, Latini A, Lorenzon L, Colafigli M, Frasca M, Pellini R, Cristaudo A, Dona MG. Oral Testing for High-Risk Human Papillomavirus DNA and E6/E7 Messenger RNA in Healthy Individuals at Risk for Oral Infection. Cancer. 2019 Aug 1; 125(15): 2587a **IF: 6.102**.
315. Rosanò L, Bagnato A. New Insights into the Regulation of the Actin Cytoskeleton Dynamics by GPCR/ß-Arrestin in Cancer Invasion and Metastasis. Int. Rev. Cell Mol. Biol. 2019 346129. **IF: 3.788**.
316. Rosano, L., R. Cianfrocca, and A. Bagnato. 2019. "Methods to Investigate Beta-Arrestin-1/beta-Catenin Signaling in Ovarian Cancer Cells." In. Vol. 1957, 393-406. United States.
317. Rossi A, Noia VD, Gkountakos A, D'Argento E, Sartori G, Vita E, Monteverdi S, Lombardo F, Iacovelli R, Carbognin L, Sperduti I, Milella M, Tortora G, Bria E, Pilotto S. PD-L1 for Selecting Non-Small-Cell Lung Cancer Patients for First-Line Immuno-Chemotherapy Combination: A Systematic Review and Meta-Analysis. Immunotherapy. 2019 07; 11(10): 921a **IF:3.028**.
318. Rossi L, Verrico M, Tomao S, Ricci F, Fontana A, Spinelli GP, Colonna M, Vici P, Tomao F. Expression of ER, PgR, HER-2, and Ki-67 in Core Biopsies and in Definitive Histological Specimens in Patients with Locally Advanced Breast Cancer Treated with Neoadjuvant Chemotherapy. Cancer Chemother.Pharmacol. 2019 11/21; : 10.1007/s00280a **IF: 3.008**.
319. Rossi V, Berchialla P, Giannarelli D, NisticÃ² C, Ferretti G, Gasparro S, Russillo M, Catania G, Vigna L, Mancusi RL, Bria E, Montemurro F, Cognetti F, Fabi A. Should all Patients with HR-Positive HER2-Negative Metastatic Breast Cancer Receive CDK 4/6 Inhibitor as First-Line Based Therapy? A Network Meta-Analysis of Data from the PALOMA 2, MONALEESA 2, MONALEESA 7, MONARCH 3, FALCON, SWOG and FACT Trials. Cancers. 2019 10/26; 11(11): 1661a **IF: 6.162**.
320. Rudà R, Pellerino A, Pace A, Carapella CM, Dealis C, Caroli M, Faedi M, Bello L, Migliore E, Marchese G, Bertero L, Cassoni P, Soffietti R. Efficacy of Initial Temozolomide for High-Risk Low Grade Gliomas in a Phase II AINO (Italian Association for Neuro-Oncology) Study: A Post-Hoc Analysis within Molecular Subgroups of WHO 2016. J.Neurooncol. 2019 Oct; 145(1): 115a **IF: 3.129**.
321. Ruffini E, Fang W, Guerrera F, Huang J, Okumura M, Kim DK, Girard N, BillÃ¨ A, Boubia S, Cangir AK, Detterbeck F, Falkson C, Filosso PL, Giaccone G, Kondo K, Infante M, Lucchi M, Marino M, Marom EM, Nicholson AG, Rimner A, Rami-Porta R, Asamura H, Staging and Prognostic FC, Staging and Prognostic Factors-Thymic,Domain Subcommittee, Staging and Prognostic FS, Members of the AB. The International Association for the Study of Lung Cancer Thymic Tumors Staging Project: The Impact of the Eighth Edition of the Union for International Cancer Control and American Joint Committee on Cancer TNM Stage Classification of Thymic Tumors. Journal of Thoracic Oncology: Official Publication of the International Association for the Study of Lung Cancer. 2019 11/27; : S1556a **IF: 12.460**.
322. Ruggiero CF, Malpicci D, Fattore L, Madonna G, Vanella V, Mallardo D, Liguoro D, Salvati V, Capone M, Bedogni B, Ascierto PA, Mancini R, Ciliberto G. ErbB3 Phosphorylation as Central Event in Adaptive Resistance to Targeted Therapy in Metastatic Melanoma: Early Detection in CTCs during Therapy and Insights into Regulation by Autocrine Neuregulin. Cancers (Basel). 2019 Sep 25; 11(10): 10.3390/cancers11101425a **IF: 6.162**.

323. Russignan A, Spina C, Tamassia N, Cassaro A, Rigo A, Bagnato A, Rosano L, Bonalumi A, Gottardi M, Zanatta L, Giacomazzi A, Scupoli MT, Tinelli M, Salvadori U, Mosna F, Zamo A, Cassatella MA, Vinante F, Tecchio C. In Reply to Schafer Et Al: New Evidence on the Role of Endothelin-1 Axis as a Potential Therapeutic Target in Multiple Myeloma. Br.J.Haematol. 2019 Mar; 184(6): 1052a **IF: 5.128**.

324. Ruzzenente A, Bagante F, Bertuzzo F, Aldrighetti L, Campagnaro T, Ercolani G, Conci S, Giuliante F, Dore A, Ferrero A, Torzilli G, Grazi GL, Ratti F, Cucchetti A, De Rose AM, Russolillo N, Cimino M, Perri P, Guglielmi A, Iacono C. Liver Resection for Neuroendocrine Tumor Liver Metastases within Milan Criteria for Liver Transplantation. J.Gastrointest.Surg. 2019 Jan; 23(1): 93a **IF: 2.686**.

325. Sanchez-Mete L,Stigliano V. Update on Small Bowel Surveillance in Hereditary Colorectal Cancer Syndromes. Tumori. 2019 Feb; : 300891618792461a **IF: 1.234**.

326. Sanguineti G, Giannarelli D, Petrongari MG, Arcangeli S, Sangiovanni A, Saracino B, Farneti A, Faiella A, Conte M, Arcangeli G. Leukotoxicity After Moderately Hypofractionated Radiotherapy Versus Conventionally Fractionated Dose Escalated Radiotherapy for Localized Prostate Cancer: A Secondary Analysis from a Randomized Study. Radiat.Oncol. 2019 Jan 30; 14(1): 23a **IF: 2.895**.

327. Sansone A, Lauretta R, Vottari S, Chiefari A, Barnabei A, Romanelli F, Appetecchia M. Specific and Non-Specific Biomarkers in Neuroendocrine Gastroenteropancreatic Tumors. Cancers (Basel). 2019 Aug 4; 11(8): E1113a **IF: 6.162**.

328. Sansone A, Fegatelli DA, Pozza C, Fattorini G, Lauretta R, Minnetti M, Romanelli F, Lucatelli P, Corona M, Bezzi M, Lombardo F, Lenzi A, Gianfrilli D. Effects of Percutaneous Varicocele Repair on Testicular Volume: Results from a 12-Month Follow-Up. Asian J.Androl. 2019 Jul; 21(4): 408a **IF: 2.862**.

329. Santarelli R, Carillo V, Romeo MA, Gaeta A, Nazzari C, Gonnella R, Granato M, D'Orazi G, Faggioni A, Cirone M. STAT3 Phosphorylation Affects p53/p21 Axis and KSHV Lytic Cycle Activation. Virology. 2019 Feb; 528: 137a **IF: 2.657**.

330. Santo A, Pilotto S, Galetta D, Grossi F, Fasola G, Romano G, Bonanno L, Bearz A, Papi M, Roca E, Catino A, Follador A, Rijavec E, Genova C, Petrillo P, Favaretto A, Giannone L, Milella M, Tortora G, Giannarelli D, Bria E, Italian association FONICAP (Operative National Interdisciplinary Force against Lung Cancer). Maintenance with Lanreotide in Small-Cell Lung Cancer Expressing Somatostatine Receptors: A Multicenter, Randomized, Phase 3 Trial. Lung Cancer. 2019 Aug; 134: 121a **IF: 4.599**.

331. Sarogni P, Palumbo O, Servadio A, Astigiano S, D'Alessio B, Gatti V, Cukrov D, Baldari S, Pallotta MM, Aretini P, Dell'Orletta F, Soddu S, Carella M, Toietta G, Barbieri O, Fontanini G, Musio A. Overexpression of the Cohesin-Core Subunit SMC1A Contributes to Colorectal Cancer Development. J.Exp.Clin.Cancer Res. 2019 Mar 1; 38(1): 108a **IF: 5.646**.

332. Sartori E, Ghezzi F, Cromi A, Lagana AS, Garzon S, Raffaelli R, Scambia G, Franchi M, Italian Society of Gynecology and Obstetrics (SIGO). Learning Climate and Quality of Italian Training Courses in Gynecology and Obstetrics. Eur.J.Obstet.Gynecol.Reprod.Biol. 2019 Oct; 241: 13a **IF: 2.024**.

333. Scalea S, Maresca C, Catalanotto C, Marino R, Cogoni C, Reale A, Zampieri M, Zardo G. Modifications of H3K4 Methylation Levels are Associated with DNA Hypermethylation in Acute Myeloid Leukemia. The FEBS Journal. 2019 10/09; : 10.1111/febs.15086a **IF: 4.739**.

334. Scambia G, Nero C, Uccella S, Vizza E, Ghezzi F, Cosentino F, Chiantera V, Fagotti A. Sentinel-Node Biopsy in Early Stage Ovarian Cancer: A Prospective Multicentre Study (SELLY). International Journal of Gynecological Cancer: Official Journal of the International Gynecological Cancer Society. 2019 11; 29(9): 1437a **IF: 1.746**.

335. Scambia G, Scollo P, Vizza E, Ghezzi A. Trattato di chirurgia ostetrica e ginecologica. Edra Edizioni. Ottobre 2019; 560 pp; ISBN:882144869X, EAN:9788821448690

336. Scoppola A, Strigari L, Barnabei A, Petasecca P, De Galitiis F, Fulgenzi CAM, Roselli M, De Lorenzo A, Di Renzo L, Marchetti P, Torino F. Insulin Resistance as a Risk Factor for Cutaneous Melanoma. A Case Control Study and Risk-Assessment Nomograms. Frontiers in Endocrinology. 2019 11/05; 10: 757a **IF: 3.634.**

337. Selvaggia Serini, Elena Papa. 2019. "Presentazione Di Un Modello Di Presa in Carico Del Paziente in Epilessia Tumorale. Aspetti Clinici, Percorsi Di Cura e Riabilitazione." Chap. Cap.6, In Epilessia Tumorale. Aspetti Clinici, Percorsi Di Cura e Riabilitazione, edited by IFO-IRCCS Istituto Nazionale

Tumori Regina Elena, Centro Epilessia Tumorale and Associazione Blaze-Matteo Blasi: Società Editrice Esculapio.

338. Setti Boubaker N, Cicchillitti L, Said R, Gurtner A, Ayed H, Blel A, Karray O, Essid MA, Gharbi M, Bouzouita A, Rammeh Rommeni S, Chebil M, Piaggio G, Ouerhani S. The Clinical and Prognostic Value of miR-9 Gene Expression in Tunisian Patients with Bladder Cancer. Mol.Biol.Rep. 2019 Oct; 46(5): 4743a **IF: 2.107.**

339. Signorelli C, Chilelli MG, Sperduti I, Giacinti S, Amodio PM, Palmieri RM, Ranalli TV, Gomes VV, Rosetto ME, Nelli F, Ruggeri EM. Correlation of Tumor Location to Clinical Outcomes in Colorectal Cancer: A Single-Institution Retrospective Analysis. Anticancer Res. 2019 Sep; 39(9): 4917a **IF: 1.935.**

340. Silvani A, De Simone I, Fregoni V, Biagioli E, Marchioni E, Caroli M, Salmaggi A, Pace A, Torri V, Gaviani P, Quaquarini E, Simonetti G, Rulli E, D'Incalci M, Italian Association of Neuro-Oncology. Multicenter, Single Arm, Phase II Trial on the Efficacy of Ortataxel in Recurrent Glioblastoma. J.Neurooncol. 2019 Feb 6; a **IF: 3.129.**

341. Simone G, Anceschi U, Tuderti G, Misuraca L, Celia A, De Concilio B, Costantini M, Stigliano A, Minisola F, Ferriero M, Guaglianone S, Gallucci M. Robot-Assisted Partial Adrenalectomy for the Treatment of Conn's Syndrome: Surgical Technique, and Perioperative and Functional Outcomes. Eur.Urol. 2019 May; 75(5): 811a **IF: 17.298.**

342. Simone G, Capitanio U, Tuderti G, Presicce F, Leonardo C, Ferriero M, Misuraca L, Costantini M, Larcher A, Minisola F, Guaglianone S, Anceschi U, Muttin F, Nini A, Trevisani F, Montorsi F, Bertini R, Gallucci M. On-Clamp Versus Off-Clamp Partial Nephrectomy: Propensity Score-Matched Comparison of Long-Term Functional Outcomes. Int.J.Urol. 2019 Oct; 26(10): 985a **IF: 2.107.**

343. Simone G, Misuraca L, Anceschi U, Minisola F, Ferriero M, Guaglianone S, Tuderti G, Gallucci M. Urethra and Ejaculation Preserving Robot-Assisted Simple Prostatectomy: Near-Infrared Fluorescence Imaging-Guided Madigan Technique. Eur.Urol. 2019 Mar; 75(3): 492a **IF: 17.298.**

344. Simone G, Tuderti G, Anceschi U, Ferriero M, Costantini M, Minisola F, Vallati G, Pizzi G, Guaglianone S, Misuraca L, Gallucci M. "Ride the Green Light": Indocyanine Green-Marked Off-Clamp Robotic Partial Nephrectomy for Totally Endophytic Renal Masses. Eur.Urol. 2019 Jun; 75(6): 1008a **IF: 17.298.**

345. Solari D, Zenga F, Angileri FF, Barbanera A, Berlucchi S, Bernucci C, Carapella C, Catapano D, Catapano G, Cavallo LM, D'Arrigo C, de Angelis M, Denaro L, Desogus N, Ferroli P, Fontanella MM, Galzio RJ, Gianfreda CD, Iacoangeli M, Lauretti L, Locatelli D, Locatelli M, Luglietto D, Mazzatenta D, Menniti A, Milani D, Nasi MT, Romano A, Ruggeri AG, Saladino A, Santonocito O, Schwarz A, Skrap M, Stefini R, Volpin L, Wembagher GC, Zoia C, Zona G, Cappabianca P. A Survey on Pituitary Surgery in Italy. World Neurosurg. 2019 Mar; a **IF: 1.723.**

346. Spagnuolo M, Regazzo G, De Dominici M, Sacconi A, Pelosi A, Korita E, Marchesi F, Pisani F, Magenta A, Lulli V, Cordone I, Mengarelli A, Strano S, Blandino G, Rizzo MG, Calabretta B. Transcriptional Activation of the miR-17-92 Cluster is Involved in the Growth-Promoting Effects of MYB in Human Ph-Positive Leukemia Cells. Haematologica. 2019 Jan; 104(1): 82a **IF: 7.570.**

347. Spinal Cord and Spinal Column Tumors. Alessandro Landi, Fabrizio Gregori, Roberto Delfini. Neuroscience Research Progress, Cancer Etiology, Diagnosis and Treatments BISAC: MED062000, Nova Science Publishers, Inc. Hauppauge, NY ISBN: 978-1-53616-474-9

348. Spriano G, Mercante G, Anelli A, Cristalli G, Ferreli F. Lateral Cervical Approach for Open Laryngeal Surgery: Technical Notes. Head Neck. 2019 Mar; 41(3): 813a **IF: 2.471.**

349. Spriano G, Mercante G, Manciocco V, Cristalli G, Sanguineti G, Ferreli F. A New Lateral Cervical Approach for Salvage Total Laryngo-Pharyngectomy. Acta Otorhinolaryngol.Ital. 2019 Feb; 39(1): 61a **IF: 1.408.**

350. Spugnini EP, Vincenzi B, Amadio B, Baldi A. Adjuvant Electrochemotherapy with Bleomycin and Cisplatin Combination for Canine Soft Tissue Sarcomas: A Study of 30 Cases. Open Vet.J. 2019 Apr; 9(1): 88a

351. Stramucci L,Bossi G. Approaching the Challenges of MKK3/p38delta MAPK Targeting for Therapeutic Purpose in Colorectal Cancer. Journal of Experimental & Clinical Cancer Research: CR. 2019 12/27; 38(1): 504a **IF: 5.646.**

352. Stramucci L, Pranteda A, Stravato A, Amoreo CA, Pennetti A, Diodoro MG, Bartolazzi A, Milella M, Bossi G. MKK3 Sustains Cell Proliferation and Survival through p38DELTA MAPK Activation in Colorectal Cancer. Cell Death & Disease. 2019 11/06; 10(11): 842a IF:5.959.
353. Strano S,Blandino G. CTAZ: A Safeguard Factor of Antiviral Response. EMBO Rep. 2019 Jun; 20(6): e48169a **IF: 8.383**.
354. Strigari L, Minosse S, D'Alessio D, Farina L, Cavagnaro M, Cassano B, Pinto R, Vallati G, Lopresto V. Microwave Thermal Ablation using CT-Scanner for Predicting the Variation of Ablated Region Over Time: Advantages and Limitations. Phys.Med.Biol. 2019 May 31; 64(11): 115021a **IF: 3.030**.
355. Tacconi EM, Badie S, De Gregoriis G, Reislander T, Lai X, Porru M, Folio C, Moore J, Kopp A, Baguna Torres J, Sneddon D, Green M, Dedic S, Lee JW, Batra AS, Rueda OM, Bruna A, Leonetti C, Caldas C, Cornelissen B, Brino L, Ryan A, Biroccio A, Tarsounas M. Chlorambucil Targets BRCA1/2-Deficient Tumours and Counteracts PARP Inhibitor Resistance. EMBO Mol.Med. 2019 Jul; 11(7): e9982a **IF: 10.624**.
356. Tanzilli A, Pace A, Fabi A, Telera S, Vidiri A, Carosi M, Terrenato I, Koudriavtseva T, Boccaletti R, Villani V. Neurocognitive Evaluation in Older Adult Patients Affected by Glioma. J Geriatr Oncol. 2019 a **IF: 3.164**.
357. Tedesco M, Garelli V, Elia F, Chicherchia G, Foddai ML, Latini A, Morrone A, Migliano E. Usefulness of Video Thermography in the Evaluation of Platelet-Rich Plasma Effectiveness in Vulvar Lichen Sclerosus: Preliminary Study. The Journal of Dermatological Treatment. 2019 11/07; : 1a **IF: 2.112**.
358. Tedesco M, Pranteda G, Chichierchia G, Paolino G, Latini A, Orsini D, Cristaudo A, Foddai ML, Migliano E, Morrone A. The use of PRP (Platelet-Rich Plasma) in Patients Affected by Genital Lichen Sclerosus: Clinical Analysis and Results. J.Eur.Acad.Dermatol.Venereol. 2019 Feb; 33(2): e58a **IF: 5.113**.
359. Telera S, Gorgoglione N, Raus L, Vidiri A, Villani V, Pace A, Fabi A, Crispo F, Castiglione M, Sperduti I, Boccaletti R. Open Kyphoplasty for Metastatic Spine Disease: A Retrospective Clinical Series. World Neurosurg. 2019 Jul; 127: e751a **IF: 1.723**.
360. Tendas A, Marchesi F, Mengarelli A, Annibali O, Tomarchio V, Saltarelli D, Chierichini A, Di Venanzio M, Sollazzo F, Piedimonte M, Cupelli L, Bruno A, De Angelis G, Delbono L, Niscola P, Perrotti AP, de Fabritiis P, Arcese W, Rome Transplant Network. Prevention of Chemotherapy-Induced Nausea and Vomiting After High-Dose Melphalan and Stem Cell Transplantation: Review of the Evidence and Suggestions. Support.Care Cancer. 2019 Mar; a **IF: 2.754**.
361. Tocci P, Cianfrocca R, Di Castro V, Rosano L, Sacconi A, Donzelli S, Bonfiglio S, Bucci G, Vizza E, Ferrandina G, Scambia G, Tonon G, Blandino G, Bagnato A. Beta-arrestin1/YAP/mutant p53 Complexes Orchestrate the Endothelin A Receptor Signaling in High-Grade Serous Ovarian Cancer. Nat.Commun. 2019 Jul 19; 10(1): 3196a **IF: 11.878**.
362. Tocci P, Rosano L, Bagnato A. Targeting Endothelin-1 Receptor/beta-Arrestin-1 Axis in Ovarian Cancer: From Basic Research to a Therapeutic Approach. Front.Endocrinol.(Lausanne). 2019 Sep 4; 10: 609a **IF: 3.634.**
363. Tomao F, Vici P, Tomao S. Fertility Preservation and Reproductive Health in Patients Undergoing Hematopoietic Stem Cell Transplant HCT). Biol.Blood Marrow Transplant. 2019 Dec; 25(12): e389a **IF: 3.599**.
364. Toss A, Venturelli M, Sperduti I, Molinaro E, Isca C, Barbieri E, Piacentini F, Omarini C, Cortesi L, Cascinu S, Moscetti L. First-Line Treatment for Endocrine-Sensitive Bone-Only Metastatic Breast Cancer: Systematic Review and Meta-Analysis. Clin.Breast Cancer. 2019 Jul 24; a **IF: 2.762**.
365. Traversi G, Staid DS, Fiore M, Percario Z, Trisciuoglio D, Antonioletti R, Morea V, Degrassi F, Cozzi R. A Novel Resveratrol Derivative Induces Mitotic Arrest, Centrosome Fragmentation and Cancer Cell Death by Inhibiting Gamma-Tubulin. Cell.Div. 2019 Apr 10; 14: 3a **IF: 4.056**.
366. Trecarichi EM, Giuliano G, Cattaneo C, Ballanti S, Criscuolo M, Candoni A, Marchesi F, Laurino M, Dargenio M, Fanci R, Cefalo M, Delia M, Spolzino A, Maracci L, Nadali G, Busca A, Del Principe MI, Daffini R, Simonetti E, Dragonetti G, Zannier ME, Pagano L, Tumbarello M, Haematologic Malignancies Associated Bloodstream Infections Surveillance (HEMABIS) registryâ€“Sorveglianza Epidemiologica Infezioni Fungine in Emopatie Maligne (SEIFEM) group, Italy. Bloodstream Infections

Caused by Escherichia Coli in Onco-Haematological Patients: Risk Factors and Mortality in an Italian Prospective Survey. PloS One. 2019 10/29; 14(10): e0224465a **IF: 2.776**.

367. Treglia G, Annunziata S, Pizzuto DA, Giovanella L, Prior JO, Ceriani L. Detection Rate of (18)F-Labeled PSMA PET/CT in Biochemical Recurrent Prostate Cancer: A Systematic Review and a Meta-Analysis. Cancers. 2019 05/23; 11(5): 710a **IF: 6.162**.
368. Trimboli P, Palermo A, Deandrea M, Piccardo A, Campenni A, Valabrega S, Grani G, Santolamazza G, Bottoni G, Barnabei A, Ramundo V, Lauretta R, Monte L, Ferrarazzo G, Paone G, Crosetto C, Ruggeri RM, Baldari S, Chiefari A, Vottari S, Giarnieri E, Perrella E, Limone P, Durante C, Giovanella L, Appetecchia M, Crescenzi A. Prognosis of Patients with Differentiated Thyroid Carcinomas having a Preoperative Cytological Report of Indeterminate at Low Or High Risk. A Multicenter Study. Endocrine. 2019 Jul 16; 66(3): 557-562a **IF: 3.296**.
369. Trivisonno A, Cohen SR, Magalon G, Magalon J, Sterodimas A, Pascali M, Cervelli V, Toietta G, Colaprietra A, Calcagni F, Orlandi A, Scioli MG, Gentile P. Fluid Cartilage as New Autologous Biomaterial in the Treatment of Minor Nose Defects: Clinical and Microscopic Difference Amongst Diced, Crushed, and Fluid Cartilage. Materials (Basel). 2019 Mar 31; 12(7): 1062. doi: 10.3390/ma12071062a **IF: 2.972**.
370. Trivisonno A, Alexander RW, Baldari S, Cohen SR, Di Rocco G, Gentile P, Magalon G, Magalon J, Miller RB, Womack H, Toietta G. Intraoperative Strategies for Minimal Manipulation of Autologous Adipose Tissue for Cell- and Tissue-Based Therapies: Concise Review. Stem Cells Translational Medicine. 2019 12; 8(12): 1265a **IF: 5.962**.
371. Tuderti G, Brassetti A, Minisola F, Anceschi U, Ferriero M, Leonardo C, Misuraca L, Vallati G, Guaglianone S, Gallucci M, Simone G. Transnephrostomic Indocyanine Green-Guided Robotic Ureteral Reimplantation for Benign Ureteroileal Strictures After Robotic Cystectomy and Intracorporeal Neobladder: Step-by-Step Surgical Technique, Perioperative and Functional Outcomes. Journal of Endourology. 2019 10; 33(10): 823a **IF: 2.267**.
372. Uccella S, Capozzi VA, Ricco' M, Perrone E, Zanello M, Ferrari S, Zorzato PC, Seracchioli R, Cromi A, Serati M, Ergasti R, Fanfani F, Berretta R, Malzoni M, Cianci S, Vizza E, Guido M, Legge F, Ciravolo G, Gueli Alletti S, Ghezzi F, Candiani M, Scambia G. Sexual Function Following Laparoscopic Versus Transvaginal Closure of the Vaginal Vault After Laparoscopic Hysterectomy: Secondary Analysis of a Randomized Trial by the Italian Society of Gynecological Endoscopy using a Validated Questionnaire. J.Minim Invasive Gynecol. 2019 Apr 3; a **IF: 2.414**.
373. Uccella S, Nero C, Vizza E, Vargiu V, Corrado G, Bizzarri N, Ghezzi F, Cosentino F, Turco LC, Fagotti A, Scambia G. Sentinel-Node Biopsy in Early-Stage Ovarian Cancer: Preliminary Results of a Prospective Multicentre Study (SELLY). Am,J.Obstet.Gynecol. 2019 Oct; 221(4): 324.e1a **IF: 6.120**.
374. Vahabi M, Pulito C, Sacconi A, Donzelli S, D'Andrea M, Manciocco V, Pellini R, Paci P, Sanguineti G, Strigari L, Spriano G, Muti P, Pandolfi PP, Strano S, Safarian S, Ganci F, Blandino G. MiR-96-5p Targets PTEN Expression Affecting Radio-Chemosensitivity of HNSCC Cells. J.Exp.Clin.Cancer Res. 2019 Mar 29; 38(1): 141a **IF: 5.646**
375. Valenti F, Sacconi A, Ganci F, Grasso G, Strano S, Blandino G, Di Agostino S. The miR-205-5p/BRCA1/RAD17 Axis Promotes Genomic Instability in Head and Neck Squamous Cell Carcinomas. Cancers (Basel). 2019 Sep 11; 11(9): E1347 **IF: 6.162**.
376. Vanella G, Coluccio C, Di Giulio E, Assisi D, Lapenta R. Tertiary Stent-in-Stent for Obstructing Colorectal Cancer: A Case Report and Literature Review. World J.Gastrointest.Endosc. 2019 Jan 16; 11(1): 61a
377. Veccia A, Dell'oglio P, Antonelli A, Minervini A, Simone G, Challacombe B, Perdona S, Porter J, Zhang C, Capitanio U, Sundaram CP, Cacciamani G, Aron M, Anele U, Hampton LJ, Simeone C, de Naeyer G, Bradshawh A, Mari A, Campi R, Carini M, Fiori C, Gallucci M, Jacobsohn K, Eun D, Lau C, Kaouk J, Derweesh IH, Porpiglia F, Mottrie A, Autorino R. Robotic Partial Nephrectomy Versus Radical Nephrectomy in Elderly Patients with Large Renal Masses. Minerva Urol.Nefrol. 2019 Sep 13; a **IF: 2.477**.
378. Vennarecci G, Ferraro D, Tudisco A, Levi Sandri GB, Guglielmo N, Berardi G, Sperduti I, Ettorre GM. The ALPPS Procedure: Hepatocellular Carcinoma as a Main Indication. an Italian Single-Center Experience. Updates Surg. 2019 Mar; 71(1): 67a **IF: 2.476**.

379. Venuti A. Review of DNA Tumour Viruses. Hum.Vaccin Immunother. 2019 Feb; 15(5): 1133a **IF: 2.592**.
380. Verduci L, Blandino G. Circular RNA YAP1: A New Player in Gastric Cancer. Translational Cancer Research. 2019 8S195. **IF: 1.070**.
381. Verduci L, Strano S, Yarden Y, Blandino G. The circRNA-microRNA Code: Emerging Implications for Cancer Diagnosis and Treatment. Mol.Oncol. 2019 Apr; 13(4): 669a **IF: 5.962**.
382. Verrico M, Rossi L, Tomao S, Colonna M, Vici P, Tomao F. Metachronous and Synchronous Cancers in Patients with Neuroendocrine Tumors. Oncology. 2019 Sep 10; : 1a **IF: 2.278**.
383. Verzoni E, Carteni G, Cortesi E, Giannarelli D, De Giglio A, Sabbatini R, Buti S, Rossetti S, Cognetti F, Rastelli F, Sobrero A, Turci D, Sternberg CN, Porta C, Cappuzzo F, Tortora G, Tassinari D, Panni S, Pazzola A, Surico G, Raimondi A, De Giorgi U, Procopio G, Italian Nivolumab Renal Cell Cancer Early Access Program group. Real-World Efficacy and Safety of Nivolumab in Previously-Treated Metastatic Renal Cell Carcinoma, and Association between Immune-Related Adverse Events and Survival: The Italian Expanded Access Program. J.Immunother.Cancer. 2019 Apr 3; 7(1): 99a **IF: 8.676**.
384. Vidiri A, Marzi S, Gangemi E, Benevolo M, Rollo F, Farneti A, Marucci L, Spasiano F, Sperati F, Di Giuliano F, Pellini R, Sanguineti G. Intravoxel Incoherent Motion Diffusion-Weighted Imaging for Oropharyngeal Squamous Cell Carcinoma: Correlation with Human Papillomavirus Status. Eur.J.Radiol. 2019 Aug 13; 119: 108640a **IF: 2.948**.
385. Vidiri A, Minosse S, Piludu F, Pellini R, Cristalli G, Kayal R, Carlino G, Renzi D, Covello R, Marzi S. Cervical Lymphadenopathy: Can the Histogram Analysis of Apparent Diffusion Coefficient Help to Differentiate between Lymphoma and Squamous Cell Carcinoma in Patients with Unknown Clinical Primary Tumor? Radiol.Med. 2019 Jan; a **IF: 1.420**.
386. Vidiri A, Panfili M, Boellis A, Cristalli G, Gangemi E, Pellini R, Marzi S, Covello R. The Role of MRI-Derived Depth of Invasion in Staging Oral Tongue Squamous Cell Carcinoma: Inter-Reader and Radiological-Pathological Agreement. Acta Radiol. 2019 Jul 18; : 284185119862946a **IF: 1.586**.
387. Viganò L, Cimino M, Aldrighetti L, Ferrero A, Cillo U, Guglielmi A, Ettorre GM, Giuliante F, Dalla Valle R, Mazzaferro V, Jovine E, De Carlis L, Calise F, Torzilli G, Ratti F, Gringeri E, Russolillo N, Levi Sandri GB, Ardito F, Boggi U, Gruttadauria S, Di Benedetto F, Rossi GE, Berti S, Ceccarelli G, Vincenti L, Belli G, Zamboni F, Coratti A, Mezzatesta P, Santambrogio R, Navarra G, Giuliani A, Pinna AD, Parisi A, Colledan M, Slim A, Antonucci A, Grazi GL, Frena A, Sgroi G, Brolese A, Morelli L, Floridi A, Patriti A, Veneroni L, Boni L, Maida P, Griseri G, Filauro M, Guerriero S, Tisone G, Romito R, Tedeschi U, Zimmitti Gon behalf of the Italian Group of Minimally Invasive Liver Surgery (I Go MILS). Multicentre Evaluation of Case Volume in Minimally Invasive Hepatectomy. British Journal of Surgery. 2019 **IF: 5.572**.
388. Villani V, Fabi A, Tanzilli A, Pasqualetti F, Lombardi G, Vidiri A, Gonnelli A, Molinari A, Cantarella M, Bellu L, Terrenato I, Carosi M, Maschio M, Telera SM, Carapella CM, Cognetti F, Paiar F, Zagonel V, Pace A. A Multicenter Real-World Study of Bevacizumab in Heavily Pretreated Malignant Gliomas: Clinical Benefit is a Plausible End Point? Future Oncol. 2019 Apr 12; 15(15): 1717-1727a **IF: 2.279**.
389. Villani V, Pace A, Vidiri A, Tanzilli A, Sperati F, Terrenato I, Mariantonia C, Casini B, Metro G, Maschio M, Tatiana K, Cognetti F, Fabi A. Phase II Study of Weekly Carboplatin in Pretreated Adult Malignant Gliomas. J.Neurooncol. 2019 Aug; 144(1): 211a **IF: 3.129**.
390. Villani V, Tanzilli A, Telera SM, Terrenato I, Vidiri A, Fabi A, Zucchella C, Carapella CM, Marucci L, Casini B, Carosi M, Oppido PM, Pace A. Comorbidities in Elderly Patients with Glioblastoma: A Field-Practice Study. Future Oncol. 2019 Jan 18; **IF: 2.279**.
391. Vitale I, Manic G, Coussens LM, Kroemer G, Galluzzi L. Macrophages and Metabolism in the Tumor Microenvironment. Cell.Metab. 2019 Jul 2; 30(1): 36a **IF: 22.415**.
392. Vitale I, Manic G, Galassi C, Galluzzi L. Stress Responses in Stromal Cells and Tumor Homeostasis. Pharmacol.Ther. 2019 Apr 16; **IF: 9.396**.
393. Vitale I, Sistigu A, Manic G, Rudqvist NP, Trajanoski Z, Galluzzi L. Mutational and Antigenic Landscape in Tumor Progression and Cancer Immunotherapy. Trends Cell Biol. 2019 May; 29(5): 396a **IF: 16.588**

394. Vitale MG, Baldessari C, Milella M, Buti S, Militello AM, Di Girolamo S, Fornarini G, Perri G, Basso U, Maruzzo M, Porta C, Cosmai L, Pipitone S, Cerma K, Cascinu S, Sabbatini R. Immunotherapy in Dialysis-Dependent Cancer Patients: Our Experience in Patients with Metastatic Renal Cell Carcinoma and a Review of the Literature. Clinical Genitourinary Cancer. 2019 10; 17(5): e903a **IF :2.450**.

395. Vizza E, Mancini E, Laquintana V, Loria R, Carosi M, Baiocco E, Cicchillitti L, Piaggio G, Patrizi L, Sperduti I, Zampa A, Cutillo G, Falcioni R, Corrado G. The Prognostic Significance of Positive Peritoneal Cytology in Endometrial Cancer and its Correlations with L1-CAM Biomarker. Surg.Oncol. 2019 Mar; 28: 151a **IF: 3.000**.

396. Willan J, Cleasby AJ, Flores-Rodriguez N, Stefani F, Rinaldo C, Pisciottani A, Grant E, Woodman P, Bryant HE, Ciani B. ESCRT-III is Necessary for the Integrity of the Nuclear Envelope in Micronuclei but is Aberrant at Ruptured Micronuclear Envelopes Generating Damage. Oncogenesis. 2019 Apr 15; 8(5): 29a **IF: 5.995**.

397. Zamboni S, Foerster B, Abufaraj M, Seisen T, Roupret M, Colin P, De la Taille A, Di Bona C, Peyronnet B, Bensalah K, Herout R, Wirth MP, Novotny V, Soria F, Chlosta P, Antonelli A, Simeone C, Baumeister P, Mattei A, Montorsi F, Simone G, Gallucci M, Matsumoto K, Karakiewicz PI, Briganti A, Xylinas E, Shariat SF, Moschini M, Upper Tract Urothelial Carcinoma Collaboration Group, European Association of Urology - Young Academic Urologists (EAU-YAU), Urothelial carcinoma working group. Incidence and Survival Outcomes in Patients with Upper Urinary Tract Urothelial Carcinoma Diagnosed with Variant Histology and Treated with Nephroureterectomy. BJU Int. 2019 Mar 25; 124(5): 738-745a **IF: 4.524**.

398. Zamboni S, Soria F, Mathieu R, Xylinas E, Abufaraj M, D'Andrea D, Tan WS, Kelly JD, Simone G, Gallucci M, Meraney A, Krishna S, Konety BR, Antonelli A, Simeone C, Baumeister P, Mattei A, Briganti A, Gallina A, Montorsi F, Rink M, Aziz A, Karakiewicz PI, Roupret M, Koupparis A, Scherr DS, Ploussard G, Sooriakumaran P, Shariat SF, Moschini M, European Association of Urology - Young Academic Urologists (EAU-YAU) Urothelial carcinoma working group, EAU Research Foundation. Differences in Trends in the use of Robot-Assisted and Open Radical Cystectomy and Changes Over Time in Peri-Operative Outcomes among Selected Centres in North America and Europe: An International Multicentre Collaboration. BJU Int. 2019 May 4; **IF: 4.524**.

399. Zizza P, Dinami R, Porru M, Cingolani C, Salvati E, Rizzo A, D'Angelo C, Petti E, Amoreo CA, Mottolese M, Sperduti I, Chambery A, Russo R, Ostano P, Chiorino G, Blandino G, Sacconi A, Cherfils-Vicini J, Leonetti C, Gilson E, Biroccio A. TRF2 Positively Regulates SULF2 Expression Increasing VEGF-A Release and Activity in Tumor Microenvironment. Nucleic Acids Res. 2019 Apr 23; 47(7): 3365a **IF: 11.147**.

400. Zoccali C, Baldi J, Anelli V, Annovazzi A, Scotto di Uccio A, Arrigoni F, Barile A, Masciocchi C. The Giant Aggressive Chondroma: A Rare Entity, a Difficult Approach. J.Orthop. 2019 Sep 11; 18: 181a

401. Zoccali C, Scotto G, Cannavo L, Baldi J, Scaffidi-Argentina U, Luzzati A. En Bloc Spondylectomy in Patients Older than 60 Years: Indications, Results and Complications in a Series of 37 Patients. Eur.Spine J. 2019 Apr 10; a **IF: 2.513**.

402. Zocchi J, Pietrobon G, Campomagnani I, Riggi E, Veronesi G, Borchini R, Pellini R, Volpi L, Bignami M, Castelnuovo P. The Role of a Post Therapeutic Surveillance Program for Sinonasal Malignancies: Analysis of 417 Patients. Head Neck. 2019 12/31; : 10.1002/hed.26069a **IF: 2.442**.

CLINICAL TRIALS

CLINICAL TRIALS 2019

BRAIN

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	Percorso di assistenza integrata e teleconsulenza al paziente con epilessia secondaria a neoplasia cerebrale	Neuroncology	Marta Maschio	18
O	Efficacy and tolerability of low vs. Standard daily doses of antiepileptic drugs in newly diagnosed, previously untreated epilepsy (standlow). A multicenter, randomized, single-blind, parallel group trial	Neuroncology	Marta Maschio	0
O	Studio clinico-neuropatologico-molecolare di pazienti affetti da glioblastoma lungo-sopravviventi	Neuroncology	Veronica Villani	8
O	Glioma: aspetti biomolecolari dal tessuto alla Radiomica	Neuroncology	Veronica Villani	3
O	Andamento delle cefalee primarie in pazienti con glioma ad alto grado, uno studio osservazionale multicentrico	Neuroncology	Andrea Pace	0
O	Il processo decisionale relativo al trattamento nei pazienti neuronocologici	Neuroncology	Andrea Pace	3
O	Spinal fluid microRNA as new diagnostic and prognostic biomarkers in CNS	Pathology	Mariantonia Carosi	0
C	Liquid biopsy: circulating/blood microRNAs as novel non-invasive diagnostic biomarkers in brain tumor (an integrated platform for developing brain cancer diagnostic techniques)	Oncogenomics and Epigenetics	Maria Giulia Rizzo	4
O	Revision of the european organisation for research and treatment of cancer (EORTC) quality of life questionnaire (QLQ)-BN20 brain tumour module	Neuroncology	Andrea Pace	5
O	Definizione dei temi rilevanti per le cure palliative nei pazienti affetti da neoplasia cerebrale e loro caregivers attraverso un questionario semi-strutturato e focus group (Studio ancillare per la produzione di Linee Guida Italiane sulle cure palliative nei pazienti affetti da neoplasia cerebrale)	Neuroncology	Andrea Pace	0

Breast

Status*	Title	Division	Principal investigator	Patients IRE 2019
C	A randomized, open-label, phase 3 study of Abemaciclib Combined with standard adjuvant endocrine therapy versus standard adjuvant endocrine therapy alone in patients with high risk, node positive, early stage, hormone receptor positive, human epidermal receptor 2 negative, breast cancer	Medical Oncology 1	Francesco Cognetti	3
O	Studio osservazionale, retrospettivo, multicentrico atto a valutare il beneficio del trattamento ormonale adiuvante nelle pazienti affette da eraly breast cancer HER2 negativo con espressione recettoriale di ER e/o PgR compresa tra 1 e 9% e =>10%	Medical Oncology 2	Patrizia Vici	0
C	A phase 3 open-label, randomized, multicenter study of NKTR-102 versus treatment of physician's choice (TPC) in patients with metastatic breast cancer who have stable brain metastases and have been previously treated with an Anthracycline, a Taxane, and Capecitabine	Medical Oncology 1	Francesco Cognetti	1
O	A dangerous RNA: DNA affair: unraveling r-loop management in breast cancer genome integrity and chromatid cohesion	Pathology	Simonetta Buglioni	0
C	Studio osservazionale per la valutazione della compliance al trattamento a base di inibitori dell'Aromatasi nelle pazienti affette da carcinoma della mammella ormonopositivo	Medical Oncology 1	Alessandra Fabi	32
O	A study evaluating the pregnancy outcomes and safety of interrupting endocrine therapy for young women with endocrine responsive breast cancer who desire pregnancy	Medical Oncology 2	Patrizia Vici	0
O	Multicenter, randomized, phase ii study of neoadjuvant chemotherapy associated or not with zoledronate and atorvastatin in triple negative breast cancers - yappetizer study	Medical Oncology 1	Alessandra Fabi	2
C	Dissecting the role of anti-estrogen receptor alpha autoantibodies in breast cancer	Medical Oncology 2	Patrizia Vici	0
C	Il ruolo del TDM-1 nella real world evidence	Medical Oncology 1	Alessandra Fabi	30

C	Valutazione delle variazioni quantitative e qualitative del DNA tumorale libero circolante in paziente affette da carcinoma mammario avanzato in trattamento con Everolimus e Exemestane	Medical Oncology 2	Patrizia Vici	0
O	Adjuvant treatment for high-risk triple negative breast cancer patients with the anti-pd-l1 antibody avelumab: a phase III randomized trial	Medical Oncology 1	Francesco Cognetti	3
C	Observational prospective study with Eribulin for breast cancer with brain metastases	Medical Oncology 1	Alessandra Fabi	2
C	Terapia con T-DM1 in pazienti affette da carcinoma mammario avanzato HER2 positivo. Studio osservazionale retrospettivo multicentrico	Medical Oncology 2	Patrizia Vici	0
O	Radioterapia accelerata ipofrazionata in pazienti operate per tumore della mammella con indicazione anche all'irradiazione delle stazioni linfonodali regionali. Studio di fattibilità	Radiotherapy	Giuseppe Sanguineti	2
C	Studio retrospettivo osservazionale multicentrico sulle sequenze della terapia ormonale nel trattamento del tumore della mammella metastatico ormonodipendente	Medical Oncology 1	Alessandra Fabi	3
C	Diagnostic accuracy of contrast-enhanced, spectral mammography (CESM) and 3 tesla magnetic resonance compared with full field digital mammography plus ultrasound in breast lesion detection and characterization: results from a (pilot), open-label, single-centre prospective study	Radiology	Francesca Ferranti	43
O	A multi-centre, open-label, randomized clinical trial comparing the efficacy and safety of the antibody-drug conjugate SYD985 to physician's choice in patients with HER2-positive unresectable locally advanced or metastatic breast cancer	Medical Oncology 1	Francesco Cognetti	4
C	Studio osservazionale prospettico sull'aderenza al trattamento con Everolimus ed Exemestane nelle donne con neoplasia della mammella in fase avanzata di malattia: Studio ADEVEX	Medical Oncology 1	Alessandra Fabi	0
O	Identificazione biomarcatori predittivi/prognostici nel carcinoma mammario triplo-negativo. NeoTAZ study	Medical Oncology 2	Patrizia Vici	0
C	Validazione prospettica del TAZ-score come biomarker di risposta completa patologica in pazienti affette da carcinoma mammario luminal B/HER2-positivo trattate con terapia neoadiuvante a base di trastuzumab - TRISKELE Trial	Medical Oncology 2	Patrizia Vici	0

O	Studio di correlazione fra le modificazioni dei marker di riserva ovarica e sviluppo di insufficienza ovarica primaria in pazienti affette da carcinoma mammario che necessitano di trattamento polichemioterapico con finalità neo-/adiuvante	Medical Oncology 2	Patrizia Vici	0
O	Efficacia e tollerabilità della chemioterapia neoadiuvante contenente carboplatino nelle pazienti affette da carcinoma mammario triplo negativo: studio multicentrico osservazionale prospettico. NeoCarbo study	Medical Oncology 2	Patrizia Vici	3
O	Fulvestrant followed by Everolimus plus exemestane vs Examestane and Everolimus followed by Fulvestrant in postmenopausal women with HR+ and HER2- locally advanced (LABC) or metastatic breast cancer (MBC) previously treated with NSAI	Medical Oncology 2	Patrizia Vici	0
O	Fulvestrant followed by Everolimus plus exemestane vs Examestane and Everolimus followed by Fulvestrant in postmenopausal women with HR+ and HER2- locally advanced (LABC) or metastatic breast cancer (MBC) previously treated with NSAI	Medical Oncology 1	Francesco Cognetti	0
O	Impact of hippo pathway component in breast cancer patients treated or to be treated with neoadjuvant chemotherapy	Medical Oncology 2	Patrizia Vici	0
O	LIQBREASTRACK: tracking mutational hotspots in breast cancer patients treated with t-dm1 by liquid biopsy	Oncogenomics and Epigenetics	Matteo Allegretti	0
O	Studio osservazionale prospettico sul trattamento del carcinoma mammario in gravidanza e sul follow up delle donne che hanno avuto una gravidanza dopo diagnosi e trattamento di un carcinoma mammario: PREFER2 (PREgnacy and FERtility)	Medical Oncology 1	Francesco Cognetti	0
O	PREgnancy and FERtility - PREFER Studio osservazionale prospettico sulla preservazione della fertilità nelle pazienti giovani con patologia oncologica. PREFER (PREgnacy and FERtility)	Medical Oncology 1	Francesco Cognetti	0
C	A phase III study comparing the concurrent versus the sequential administration of chemotherapy and aromatase inhibitors, as adjuvant treatment of post-menopausal patients with endocrine responsive early breast cancer	Medical Oncology 1	Francesco Cognetti	1
C	A randomised, multicentre, open-label phase II trial investigating activity of chemotherapy and Lapatinib and Trastuzumab in patients with HER2-	Medical Oncology 1	Francesco Cognetti	1

	positive metastatic breast cancer (MBC) refractory to anti her2 therapies			
O	Evaluation of medical treatments (chemotherapy, ormonal therapy and biological therapy) in metastatic breast cancer patients according to biological subtype and line of treatment	Medical Oncology 1	Francesco Cognetti	68
C	Studio osservazionale prospettico sui cambiamenti delle abitudini alimentari dopo la diagnosi di carcinoma mammario (ECHO STUDY)	Medical Oncology 2	Patrizia Vici	36
C	Studio osservazionale prospettico sui cambiamenti delle abitudini alimentari dopo la diagnosi di carcinoma mammario (ECHO STUDY)	Medical Oncology 1	Alessandra Fabi	40
O	Studio BRIDE. Diagnosi e trattamento del carcinoma mammario in Italia: studio osservazionale prospettico nazionale della Fondazione AIOM	Medical Oncology 1	Alessandra Fabi	84
O	Studio BRIDE. Diagnosi e trattamento del carcinoma mammario in Italia: studio osservazionale prospettico nazionale della Fondazione AIOM	Medical Oncology 2	Patrizia Vici	29
O	Studio retrospettivo osservazionale multicentrico sulle sequenze della terapia ormonale nel trattamento del tumore della mammella metastatico ormonodipendente	Medical Oncology 2	Patrizia Vici	0
C	A randomised, double-blind, parallel group, equivalence, multicentre phase III trial to compare the efficacy, safety, and pharmacokinetics of HD201 to Herceptin® in patients with HER2+ early breast cancer	Medical Oncology 2	Patrizia Vici	0
C	Studio osservazionale retrospettivo per la valutazione della tossicità cardiaca del trastuzumab nel trattamento adiuvante delle pazienti affette da carcinoma mammario HER2-positivo con età >=70 anni	Medical Oncology 2	Patrizia Vici	0
C	Studio osservazionale retrospettivo per la valutazione della tossicità cardiaca del trastuzumab nel trattamento adiuvante delle pazienti affette da carcinoma mammario HER2-positivo con età >=70 anni	Medical Oncology 1	Alessandra Fabi	0
C	Associazione di EVErolimus ed EXEmestane: ruolo nel trattamento di I linea nella neoplasia della mammella localmente avanzata o metastatica ormono-sensibile. Studio osservazionale retrospettivo	Medical Oncology 2	Patrizia Vici	4

O	Associazione di EVErolimus ed EXEmestane: ruolo nel trattamento di I linea nella neoplasia della mammella localmente avanzata o metastatica ormono-sensibile. Studio osservazionale retrospettivo	Medical Oncology 1	Alessandra Fabi	0
O	Second line Eribulin followed by Capecitabine or the reverse sequence in HER2-negative metastatic breast cancer (MBC) patients: a randomized phase II study – ERICA trial	Medical Oncology 1	Alessandra Fabi	6
C	Impact of Everolimus-induced precocious modifications of systemic metabolism on the prognosis of postmenopausal women with advanced hormone receptor-positive HER2 negative breast cancer: the retrospective, multicenter italian EVERMET study	Medical Oncology 1	Alessandra Fabi	12
O	Liquid biopsy: intercepting mutational trajectories of HER2 breast cancer in patients under t-DM1 treatment	Medical Oncology 1	Alessandra Fabi	13
O	Atezolizumab, Pertuzumab and Trastuzumab with chemotherapy as neoadjuvant treatment of HER2 positive early high-risk and locally advanced breast cancer (APTNEO)	Medical Oncology 1	Alessandra Fabi	10
O	Eribulin Concomitatn to radiotherapy in HER-2 negative advanced breast cancer disease with bone metastases: multicenter non interventistic observational study	Medical Oncology 1	Alessandra Fabi	0
O	Infiltrato linfocitario tumorale nel carcinoma della mammella triplo negativo pT1 pN0	Medical Oncology 2	Patrizia Vici	1
O	New therapeutic approaches in HER2-driven breast cancer: role of the chaperonin HSP90 in response to pharmacological treatments	Medical Oncology 1	Gianluigi Ferretti	0
O	Genomic test aiming to identify actionable mutations in hormone receptor (HR) negative/HER2 positive or triple negative (TN) breast cancer resistant to neoadjuvant therapy: feasibility and improvement	Medical Oncology 1	Francesco Cognetti	0
O	Valutazione di biomarcatori predittivi di efficacia e tossicità in pazienti affette da carcinoma mammario avanzato HR+HER2- in trattamento con inibitori delle chinasi ciclino-dipendenti CDK4/6. Lo studio INDACO.	Medical Oncology 2	Patrizia Vici	21
O	Genomic test aiming to identify actionable mutations in hormone receptor (HR) negative/HER2 positive or triple negative (TN) breast cancer resistant to neoadjuvant therapy: feasibility and improvement	Medical Oncology 2	Patrizia Vici	0

C	Studio retrospettivo osservazionale multicentrico di real life sull'uso del Palbociclib in associazione alla terapia ormonale e sulle sequenze terapeutiche nel trattamento del tumore della mammella metastatico ormonodipendente	Medical Oncology 1	Alessandra Fabi	1
O	GINSENG AMERICANO (PANAX QUINQUEFOLIUS) nella prevenzione della fatigue moderata-severa in pazienti con carcinoma della mammella operate e sottoposte a chemioterapia adiuvante. STUDIO NICSO (Network Italiano Cure di Supporto in Oncologia)	Medical Oncology 1	Alessandra Fabi	6
O	Studio osservazionale prospettico sul trattamento ormonale adiuvante delle pazienti in premenopausa con carcinoma mammario precoce positivo ai recettori degli estrogeni	Medical Oncology 1	Alessandra Fabi	0
O	La creatività come risorsa nel processo della malattia oncologica. Studio pilota sulla introduzione della Drammaterapia Integrata nel Percorso assistenziale di Sostegno al paziente Oncologico	Epidemiology & Tumor Registry	Maria Cecilia Cercato	0
O	Studio osservazionale prospettico di valutazione dell'attività clinica e della tollerabilità della combinazione Ribociclib+letrozolo in pazienti con carcinoma mammario avanzato HR+	Medical Oncology 2	Patrizia Vici	0
O	Phase 3 study of Sacituzumab Govitecan (IMMU-132) versus treatment of physician's choice (TPC) in subjects with hormonal receptor-positive (HR+) human epidermal growth factor receptor 2 (HER2) negative metastatic breast cancer (MBC) who have failed at least two prior chemotherapy regimens	Medical Oncology 1	Francesco Cognetti	0
O	Efficacia e tollerabilità di Eribulina come chemioterapia di seconda linea in pazienti con tumore della mammella metastatico triplo negativo. Studio osservazionale retrospettivo multicentrico. TETRIS Trial	Medical Oncology 2	Patrizia Vici	0
O	Studio osservazionale prospettico di valutazione dell'attività clinica e della tollerabilità della combinazione Ribociclib+letrozolo in pazienti con carcinoma mammario avanzato HR+	Medical Oncology 1	Alessandra Fabi	1
O	Palbociclib Plus Fulvestrant in women with hormone receptor positive and human epidermal growth factor receptor type 2 negative locally advanced or metastatic breast cancer previously treated with a CDK4/6 inhibitor in combination with hormonal therapy: a multicenter, phase II trial	Medical Oncology 1	Alessandra Fabi	2

O	Bisogni riabilitativi nelle pazienti affette da carcinoma mammario in fase precoce: validazione di un questionario patient reported outcome (PRO)	Psychology	Patrizia Pugliese	0
O	Metastatic disease: the key unmet need in oncology/metorg: a living biobank of human bc metastases (wp2 task 2.2 airc project: the key unmet need in oncology)	Oncogenomics and Epigenetics	Giovanni Blandino	30
C	A phase III, multicenter, randomised, double-blind, placebo-controlled study of Atezolizumab (anti-pd-l1 antibody) in combination with Paclitaxel compared with placebo with paclitaxel for patients with previously untreated inoperable locally advanced	Medical Oncology 2	Patrizia Vici	1
C	Lucy - Lynparza breast cancer real world utility, clinical effectiveness and safety study. A phase III b, single-arm, open-label multicentre study of Olaparib monotherapy in the treatment of HER2-ve metastatic breast cancer patients with germline BRCA1/2 mutations	Medical Oncology 1	Francesco Cognetti	0
O	A phase III, multicenter, randomized, open-label trial to evaluate efficacy and safety of Ribociclib with endocrine therapy as an adjuvant treatment in patients with hormone receptor-positive, HER2-negative, early breast cancer (new adjuvant trial with Ribociclib [lee011]: natalee)	Medical Oncology 1	Alessandra Fabi	1

ENDOCRINE

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	Progetto di prescrizione dell'Informazione INFO RP	Endocrinology Oncology	Marialuisa Appetecchia	25
C	Efficacy of adjuvant mitotane treatment in prolonging recurrance-free survival in patients with adrenocortical carcinoma at low-intermediate risk of recurrance	Endocrinology Oncology	Marialuisa Appetecchia	0
O	Valutazione della funzione gonadica nei pazienti affetti da carcinoma differenziato della tiroide, sottoposti a terapia Radiometabolica con I 131	Endocrinology Oncology	Marialuisa Appetecchia	1
O	A phase 3, randomized, double-blind, placebo-controlled study of Cabozantinib (xl184) in subjects with radioiodine-refractory differentiated thyroid cancer who have progressed after prior VEGFR-targeted therapy	Endocrinology Oncology	Marialuisa Appetecchia	0

GASTROINTESTINAL

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	Phase II randomized study of maintenance Regorafenib vs placebo in no progression patients after first-line platinum and fluoropyrimidines based chemotherapy in HER2 negative locally advanced/metastatic gastric or gastroesophagel junction cancer (a-mantra study)	Medical Oncology 1	Francesco Cognetti	0
C	Prevalenza della Malnutrizione in Chirurgia/Prevalence of Malnutrition in Surgery	Hepato-Biliary-Pancreatic Surgery	Pasquale Perri	10
O	Prospective validation of a DNA damage repair-hippo pathway signature in patients with advanced gastric cancer	Medical Oncology 2	Marcello Maugeri Saccà	21
O	Randomized, double-blind, placebo-controlled, study of the efficacy, safety and tolerability of EPA-FFA gastro-resistant capsules, in patientes with familiar adenomatous polyposis (FAP)	Digestive Endoscopy	Vittoria Anna Maria Stigliano	4
O	Studio multicentrico pilota sull'utilizzo della Chemioterapia Intra- Peritoneale a flusso d'Aria Pressurizzata (PIPAC) in pazienti affetti da carcinosi peritoneale di origine intestinale, ovarica, gastrica e nei tumori primitivi del peritoneo non eleggibili a peritonectomia + HIPEC	Digestive Surgery	Orietta Federici	0
O	A phase 3, open-label, randomized, active-controlled, multicenter study to evaluate the efficacy and safety of Pemigatinib versus Gemcitabine Plus Cisplatin chemotherapy in first-line treatment of participants with unresectable or metastatic cholangiocarcinoma with FGFR2 rearrangement (FIGHT-302)	Medical Oncology 1	Vanja Vaccaro	0
C	A multicenter, randomized, open-label phase 3 study of Encorafenib + Cetuximab +/- Binimetinib vs. Irinotecan + Cetuximab with a safety lead-in of Encorafenib + Binimetinib + Cetuximab in patients with BRAF v600e-mutant metastatic colorectal cancer	Medical Oncology 1	Fabiana Cecere	0
O	Randomized phase III study on triplet Mfolfoxiri Plus Panitumumab versus Mfolfox6 Plus Panitumumab as initial therapy for unresectable RAS and BRAF wild type metastatic colorectal cancer patients	Medical Oncology 1	Francesco Cognetti	0
O	Ultrasensitive plasmonic devices for early cancer diagnosis	Oncogenomics and Epigenetics	Patrizio Giacomini	13

O	Erbitux metastatic colorectal cancer strategy study: a phase III randomized two arm study with Folfiri + Cetuximab until disease progression compared to Folfiri + Cetuximab for 8 cycles followed by Cetuximab alone until disease progression in first line treatment of patients with RAS and BRAF wild type metastatic colorectal cancer	Medical Oncology 1	Massimo Zeuli	0
O	HIPK2 as a prognostic biomarker in stage I and stage II colorectal cancer: validation and underlying mechanisms	Cellular Network and Therapeutic Target	Silvia Soddu	120
O	Intermittent or continuous Panitumumab Plus Folfiri for first-line treatment of patients with RAS/B-RAF wild-type metastatic colorectal cancer: a randomized phase 2 trial	Medical Oncology 1	Massimo Zeuli	0
O	Identificazione di nuovi bersagli immunoterapeutici e di nuovi antigeni nel carcinoma del colon-retto	Hepato-Biliary-Pancreatic Surgery	Gianluca Grazi	15
O	MKK3 come target terapeutico in tumore al colon-retto	Medical Physics	Valeria Landoni	7
O	Identificazione di una signature di microRNA regolata da TRF2 con valore prognostico e terapeutico nel tumore del colon-retto	Oncogenomics and Epigenetics	Pasquale Zizza	6
O	Sviluppo di un modello preclinico avanzato di tumore del colon-retto per identificare trattamenti efficaci in pazienti resistenti alla terapia ANTI-EGFR	SAFU	Carlo Leonetti	6
O	TRF2 oncogenic functions: from mechanistic insights to therapeutic targeting	Oncogenomics and Epigenetics	Annamaria Biroccio	0
O	Studio dei microRNA regolati dalle proteine p53 mutate e dei loro geni target come biomarcatori prognostici e/o bersagli terapeutici nel tumore del colon-retto (CRC)	SAFU	Aymon Gurtner	93
O	Caratterizzazione clinico-epidemiologica, isto-morfologica e biologica del colangiocarcinoma e partecipazione a un progetto di ricerca internazionale denominato cholangiocarcinoma (CCA) registry of the european network for study of cholangiocarcinoma (ENS CCA): an international cohort study on cholangiocarcinoma at basic, translational and clinical level	Hepato-Biliary-Pancreatic Surgery	Gianluca Grazi	0
O	Next-Generation Sequenting analysis of primary colorectal cancer lesions and paired DISTNT metastases	SAFU	Carlo Leonetti	0
O	HE.RC.O.LE.S. project hepatocarcinoma recurrence on the liver study group - fase 2 -	Hepato-Biliary-Pancreatic Surgery	Gianluca Grazi	0

O	Accurate dosimetry and biomarkers improve survival in HCC patients treated with resin 90y-µspheres: a randomized trial	Medical Physics	Lidia Strigari	3
O	Impatto sulla sopravvivenza globale di piano terapeutico personalizzato con dosimetria quantitativa 3d versus piano terapeutico standard nella radioembolizzazione epatica con 90Y nell'epatocarcinoma: trial clinico randomizzato	Nuclear Medicine	Rosa Sciuto	18
O	Registro italiano di resezioni epatiche mini-invasive	Hepato-Biliary-Pancreatic Surgery	Gianluca Grazi	8
O	Isolation and characterization of tumor stem cells in intra- and extra-hepatic cholangiocarcinoma	Hepato-Biliary-Pancreatic Surgery	Gianluca Grazi	0
O	Analisi differenziale dei profili di espressione dei microRNA in colangiocarcinoma, epatocarcinoma e metastasi epatiche	Oncogenomics and Epigenetics	Giovanni Blandino	35
C	Validazione dell'uso del test PIVKA-II su siero nel monitoraggio della progressione dell'epatocarcinoma nei pazienti candidati a trapianto di fegato e nella stratificazione dei pazienti con maggior rischio di recidiva di HCC dopo trapianto di fegato: studio prospettico	Clinical Pathology	Laura Conti	10
O	La terapia radioembolizzante delle lesioni primitive e secondarie del fegato: gestione della fase diagnostica e post trattamento	Radiology	Giuseppe Pizzi	23
O	Therapeutic targeting of FGR2 fusions in models of intrahepatic cholangiocarcinoma	Oncogenomics and Epigenetics	Oreste Segatto	2
C	A randomized, open-label, multicenter phase 3 study to compare the efficacy and safety of BGB-a317 versus Sorafenib as first-line treatment in patients with unresectable hepatocellular carcinoma	Medical Oncology 1	Francesco Cognetti	0
O	A randomized, double-blind, placebo-controlled, multicenter, trial of Crenolanib in subjects with advanced or metastatic gastrointestinal stromal tumors with a D842V mutation in the PDGFRA gene	Medical Oncology 1	Virginia Ferraresi	0
O	Identificazione di nuovi bersagli immunoterapeutici nell'epatocarcinoma attraverso lo studio delle cellule T regolatorie e del secretoma	Hepato-Biliary-Pancreatic Surgery	Gianluca Grazi	14
C	Guideline application in real world: multi-institutional based survey of adjuvant and first line pancreatic ductal adenocarcinoma treatment in Italy	Medical Oncology 1	Michele Milella	0
O	A phase III, randomised, double blind, placebo controlled, multicentre study of maintenance Olaparib monotherapy in patients with GBRCA mutated metastatic pancreatic cancer whose disease has not	Medical Oncology 1	Vanja Vaccaro	0

	progressed on first line platinum based chemotherapy			
O	Innovative tools for early diagnosis and risk assessment of pancreatic cancer	Immunology and Immunotherapy	Paola Nisticò[2]	14
O	Studio interventistico senza medicinale multicentrico in pazienti affetti da adenocarcinoma localmente avanzato del pancreas: radioterapia stereotassica - IRENE-1	Radiotherapy	Giuseppe Sanguineti	0
O	Registro Italiano Chirurgia Mininvasiva Pancreatica (IGOMIPS)	Hepato-Biliary-Pancreatic Surgery	Gianluca Grazi	0

GYNECOLOGICAL

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	Chirurgia mininvasiva vs chirurgia laparotomica nei carcinosarcomi uterini: un'esperienza multi-centrica	Ginecology	Enrico Vizza	0
O	An open-label, randomized, phase 3 clinical trial of REGN2810 of investigator's choice of chemotherapy in recurrent or metastatic cervical carcinoma	Medical Oncology 1	Antonella Savarese	0
O	Oncological outcome after completing or abandoning (radical) hysterectomy in patients with cervical cancer and intraoperative detection of LN positivity	Medical Oncology 1	Antonella Savarese	0
C	Succur study. Surgery in cervical cancer. An European multicentric observational study cases of 2013 and 2014	Ginecology	Enrico Vizza	30
C	Linfoadenectomia pelvica indocianina-guidata nei tumori della cervice uterina e dell'endometrio: studio retrospettivo multicentrico	Ginecology	Enrico Vizza	115
C	Iniezione isteroscopica vs. cervicale di tracciante per identificazione del linfonodo sentinella nel tumore dell'endometrio: studio randomizzato, multicentrico	Ginecology	Enrico Vizza	0
C	A phase 2, randomized study of MLN0128 (a dual TORC1/2 inhibitor), MLN0128+MLN1117 (a PI3KA inhibitor), weekly Paclitaxel, or the combination of weekly paclitaxel and MLN0128 in women with advanced, recurrent, or persistent endometrial cancer	Medical Oncology 1	Antonella Savarese	0
C	Multicenter, randomized, controlled clinical trial comparing two follow-up regimen at different frequencies of examinations in patients treated for endometrial cancer	Ginecology	Enrico Vizza	0
O	Il DNA libero circolante (cfDNA) come biomarcatore prognostico nel cancro dell'endometrio	Ginecology	Enrico Vizza	0
O	Dall'immunotolleranza materno-fetale all' immune-escape nella patologia ginecologica maligna: potenziali target di immuno-terapia nel carcinoma endometriale. Studio pilota	Ginecology	Enrico Vizza	0
C	Phase III, multicenter, randomized study of Atezolizumab versus placebo administered in combination with paclitaxel, Carboplatin, and Bevacizumab to patients with newly diagnosed stage III or stage IV ovarian, fallopian tube, or primary peritoneal cancer	Medical Oncology 1	Antonella Savarese	0
C	Phase II trial on Trabectedin in the Treatment of advanced uterine and ovarian carcinosarcoma	Medical Oncology 2	Patrizia Vici	0

O	Maintenance therapy with Trabectedin after combination therapy liposomal Doxorubicin plus Trabectedin vs liposomal Doxorubicin plus Trabectedin in patients affected by relapsed ovarian cancer recurring between 6 and 12 months after platinum based chemotherapy	Medical Oncology 1	Antonella Savarese	1
O	Maintenance therapy with Trabectedin after combination therapy liposomal Doxorubicin plus Trabectedin vs liposomal Doxorubicin plus Trabectedin in patients affected by relapsed ovarian cancer recurring between 6 and 12 months after platinum based chemotherapy	Medical Oncology 2	Patrizia Vici	2
O	Regolazione della sintesi di mediatori lipidici pro-infiammatori e pro-risolventi del processo infiammatorio nel tumore dell'ovaio	Ginecology	Enrico Vizza	0
O	Microvesicles' microRNA profiling in biological fluid and tissues of ovarian cancer patients	Pathology	Mariantonia Carosi	0
O	Predictive role of a microRNA signature in relapsed, high-grade serous, ovarian cancer patients rechallenged with platinum-based regimens	Medical Oncology 2	Patrizia Vici	0
O	A phase IIIb, randomised, double-blind, placebo-controlled, multicentre study of Olaparib maintenance retreatment in patients with epithelial ovarian cancer previously treated with a PARPI and responding to repeat platinum chemotherapy(OREO)	Medical Oncology 1	Francesco Cognetti	0
O	A phase II trial of Olaparib in patients with recurrent ovarian cancer wild type for germline and somatic BRCA 1 and 2 genes: the MITO 31 transalational study	Medical Oncology 1	Antonella Savarese	0
O	Studio multicentrico, interventistico non farmacologico, no-profit su conoscenze, attitudine ed esperienza verso gli studi clinici randomizzati in donne con una diagnosi di tumore ovarico	Medical Oncology 2	Patrizia Vici	6
O	Dynamic signaling reciprocity shapes invadopodia function and metastatic process of ovarian cancer: role of endothelin-1	Preclinical Models and new Therapeutics	Laura Rosano'	0
O	A randomized, double-blind, phase 3 comparison of platinum-based therapy with TSR-042 and niraparib versus standard of care platinum-based therapy as first-line treatment of stage III or iv nonmucinous epithelial ovarian cancer	Medical Oncology 1	Antonella Savarese	0
O	Studio osservazionale retrospettivo su andamento clinico e trattamento nelle pazienti affette da sarcoma uterino	Medical Oncology 2	Patrizia Vici	17
O	Studio osservazionale retrospettivo su andamento clinico e trattamento nelle pazienti affette da sarcoma uterino	Ginecology	Enrico Vizza	0

HEAD AND NECK

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	Chirurgia ricostruttiva del distretto cervico-facciale con lembi liberi rivascolarizzati: analisi statistica dei fattori outcome correlati	Otolaryngology Head & Neck	Raul Pellini	230
O	Open label study of immune monitoring of Temoporfin mediated photodynamic therapy (PDT-FOSCAN) for the treatment of recurrent superficial multiple carcinoma of the head and neck	Immunology and Immunotherapy	Paola Nisticò[2]	0
O	Radioterapia stereotassica su singola corda vocale per carcinoma glottico in stadio iniziale (cTis-1)	Radiotherapy	Giuseppe Sanguineti	15
O	Study of of MYC and YAP contribution to mutant p53 transcriptional activity in head and neck squamous cell carcinomas	Oncogenomics and Epigenetics	Giovanni Blandino	39
C	Early diffusion weighted magnetic resonance imaging changes to predict tumor response to chemoradiotherapy in HN cancer	Radiotherapy	Giuseppe Sanguineti	0
O	Study of the correlation between the expression profile of microRNAs and clinical evolution in patients with squamous carcinomas of head and neck	Oncogenomics and Epigenetics	Giovanni Blandino	39
O	Tossicità ed eventuale sua associazione con la risposta immunitaria durante terapia con Radio-Cetuximab nei Pazienti Affetti da Carcinoma Squamoso del Distretto Cervico-Cefalico in III e IV Stadio	Radiotherapy	Giuseppe Sanguineti	7
C	Elucidating how human papillomavirus modulates autophagy in oropharyngeal squamous cell carcinoma: impact on the prognostic and therapeutic potential of autophagy in the response to cisplatin-treatment	Pathology	Francesca Rollo	40
O	Phase III study assessing the best of radiotherapy compared to the best of surgery (trans-oral surgery (TOS)) in patients with T1-T2, N0 oropharyngeal carcinoma	Otolaryngology Head & Neck	Raul Pellini	0
C	Il ruolo del lembo di fascia temporoparietale nella laringectomia di salvataggio	Otolaryngology Head & Neck	Raul Pellini	12
O	RM morfologica e funzionale per identificare biomarcatori di imaging espressione del microambiente tumorale nelle neoplasie del testa-collo	Radiology	Antonello Vidiri	16
C	Correlazione tra i parametri di perfusione DCE-MRI ed i valori metabolici della 18F-FDG-PET nel carcinoma squamoso dell'orofaringe e nei linfonodi metastatici	Radiology	Simona Marzi	52
O	Identificazione di nuovi biomarcatori circolanti per la cachessia in pazienti affetti	Oncogenomics and Epigenetics	Giovanni Blandino	10

	da tumori della testa e del collo trattati con radio-chemioterapia			
C	Studio osservazionale con reattivi diagnostici CE-IVD	Pathology	Maria Benevolo	0
C	Il ruolo della profondità di invasione stimata nella RM preoperatoria per la stadiazione del carcinoma squamoso della lingua orale: riproducibilità inter-osservatore e correlazione radiologica-istopatologica	Radiology	Antonello Vidiri	43

HEMATOLOGICAL

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	A randomised phase III study to compare arsenic trioxide (ATO) combined to ATRA versus standard ATRA and Anthracycline-based chemotherapy (AIDA regimen) for newly diagnosed, non high-risk acute promyelocytic leukemia	Haematology Oncology	Andrea Mengarelli	0
O	Italian registry on the prevalence of IDH1/IDH2 mutations in patients with acute myeloid leukemia	Haematology Oncology	Andrea Mengarelli	4
O	Long term quality of lyfe sympton burden in acute promyelocytic leukemia (APL) patients treated with arsenic trioxide (ATO) or standar chemiotherapy	Haematology Oncology	Atelda Romano	0
O	Registro epidemiologico della leucemia mieloide cronica (LMC)	Haematology Oncology	Atelda Romano	0
O	Next-Generation Sequencing for BCR-ABL KD mutation screening in Philadelphia chromosome-positive leukemias	Haematology Oncology	Andrea Mengarelli	0
O	Phase-III randomized study to optimize TKIS multiple approaches - (OPTKIMA) - and quality of life (QOL) in elderly patients (>=60 years) with ph+ chronic myeloid leukemia (CML) and MR3.0/MR4.0 stable molecular response	Haematology Oncology	Atelda Romano	0
C	An open-label, multi-center, phase IIIb study to assess the safety and efficacy of midostaurin (PKC412) in patients 18 years of age or older with newly-diagnosed FLT3-mutated acute myeloid leukemia who are eligible for 7+3 or 5+2 chemotherapy	Haematology Oncology	Andrea Mengarelli	1
O	National treatment program with sequential chemotherapy and Blinatumomab to improve minimal residual disease response and survival in Philadelphia chromosome-negative b-cell precursor adult acute lymphoblastic leukemia	Haematology Oncology	Antonio Spadea	1
O	Studio osservazionale retrospettivo e prospettico per il monitoraggio della leucemia mieloide cronica nei pazienti adulti nella Regione Lazio	Haematology Oncology	Atelda Romano	0
C	10-day Decitabine versus conventional chemotherapy (3+7) followed by allografting in AML patients> 60 years: a randomized phase III study of the EORTC leukemia group, CELG, GIMEMA and German MDS study group	Haematology Oncology	Andrea Mengarelli	0
C	High-dose chemotherapy and autologous stem cell transplant or consolidating conventional chemotherapy in primary CNS lymphoma - randomized phase III trial	Haematology Oncology	Francesco Pisani	0

O	Liquid biopsy: circulating microRNAs and tumor DNA (ctDNA) as novel non-invasive biomarkers in diffuse large b-cell lymphoma	Oncogenomics and Epigenetics	Maria Giulia Rizzo	18
C	A randomized, open-label, multicentre, two-arm phase III comparative study assessing the role of involved mediastinal radiotherapy after Rituximab containing chemotherapy regimens to patients with newly diagnosed primary mediastinal large b-cell lymphoma (PMLBCL)	Haematology Oncology	Francesco Pisani	1
O	An international phase II trial assessing tolerability and efficacy of sequential Methotrexate-Aracytin-based combination and R-ICE combination, followed by high-dose chemotherapy supported by autologous stem cell transplant, in patients with systemic b-cell lymphoma with central nervous system involvement at diagnosis or relapse (MARIETTA regimen)	Haematology Oncology	Francesca Palombi	0
O	Studio prospettico osservazionale sull'utilizzo e sul monitoraggio della cardiotossicità delle antracicline in pazienti con linfoma diffuso a grandi cellule B	Haematology Oncology	Francesca Palombi	0
O	Non-interventional study to assess the safety profile of IDELALISIB in patients with refractory follicular lymphoma (FL)	Haematology Oncology	Francesca Palombi	0
C	Efficacy and safety of Brentuximab Vedotin plus Bendamustina in patients with relapsed/refractory Hodgkin's lymphoma: a retrospective analysis	Haematology Oncology	Francesca Palombi	3
C	HL RCR study: patient characteristics, treatment patterns and clinical outcomes in front-line setting treatment naïve patients with Hodgkin's lymphoma	Haematology Oncology	Andrea Mengarelli	3
O	A multicenter, randomized, double-blind, placebo-controlled, two-arm, phase 2 study of ME-401 in subjects with follicular lymphoma after failure of two or more prior systemic therapies	Haematology Oncology	Andrea Mengarelli	0
C	Radiotherapy in the initial stages of Hodgkin lymphoma: evaluation of the impact of the use of PET-TC performed in correspondence of the treatment site on the target delineation. Observational study	Radiotherapy	Maria Grazia Petrongari	1
O	Accuracy of alternative tp53 somatic mutational and expression analyses for the prognostication of myelodysplastic syndrome	Haematology Oncology	Atelda Romano	0
O	Efficacy of Eltrombopag plus Lenalidomide combination therapy in patients with IPSS low and intermediate-risk myelodysplastic syndrome with isolated DEL5Q: a multicenter, randomized, double-blind, placebo controlled study	Haematology Oncology	Atelda Romano	0

O	Eltrombopag for the treatment of thrombocytopenia due to low- and intermediate risk myelodysplastic syndromes. (eqol-mds)	Haematology Oncology	Atelda Romano	0
O	The role of a new nutraceutical compound in the prevention of Bortezomib-related neurotoxicity in newly diagnosed multiple myeloma patients: a pilot study	Neuroncology	Marta Maschio	4
O	Valutazione dell'efficacia di un percorso di educazione terapeutica e sviluppo di competenze di self-care utilizzando conversation map nei pazienti con mieloma multiplo in esordio	DITRAR-Direzione Infermieristica, tecnica, Riabilitativa, Assistenza, Ricerca	Nicolò Panattoni	0
O	Role of CHE-1 in transcriptional addiction of multiple myeloma	SAFU	Maurizio Fanciulli	45
C	Detection of poor mobilizer (PM) in multiple myeloma (MM) patients: prospective product registry	Haematology Oncology	Andrea Mengarelli	2
O	Changes in disease approach and outcome in 2010 and 2013 of newly diagnosed and 2nd line Multiple Myeloma patients treated in Hematology Centers in Lazio Region (Italy)	Haematology Oncology	Francesco Pisani	0
O	Analisi trascrittomica ed epigenomica per l'identificazione di biomarcatori coinvolti nei meccanismi di farmacoresistenza del Mieloma Multiplo	SAFU	Maurizio Fanciulli	24
O	Changes in disease approach and outcome in 2015 and 2018 of newly diagnosed and R/R multiple myeloma patients treated in hematology centers in Lazio region (Italy)	Haematology Oncology	Svitlana Gumenyuk	0
O	Hematological malignancies associated bloodstream infections surveillance	Haematology Oncology	Antonio Spadea	0
O	Valutazione dei livelli plasmatici di Isavuconazolo in pazienti ematologici con infezioni fungine invasive	Haematology Oncology	Francesco Marchesi	7
O	Revision of antifungal stategies definitions for invasive fungal infections (proven/probable/possible) in patients with hematological malignancies (redefi-seifem)	Haematology Oncology	Francesco Marchesi	9

LUNG

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	Studio dei meccanismi di immuno-evasione delle cellule staminali tumorali (CSC) di adenocarcinoma del polmone	Thoracic Surgery	Francesco Facciolo	17
O	REGISTRO ASMA GRAVE - Studio osservazionale, trasversale e/o retrospettivo, non interventistico, multicentrico, nazionale	Pulmonary Phisiopathology	Maria Papale	2
O	Analisi del ruolo dell'estradiolo e dei suoi metaboliti nella progressione della patologia pleurica	Preclinical Models and new Therapeutics	Rossella Galati	18
C	A randomized controlled non-inferiority study to evaluate the efficacy and safety of Hemopatch compared to Tachosil in preventing or reducing postoperative air leaks after pulmonary resection	Thoracic Surgery	Francesco Facciolo	14
O	A phase 2 study of Poziotinib in patients with non-small cell lung cancer, locally advanced or metastatic, with EGFR or HER2 exon 20 insertion mutation (pozitive20-1)	Medical Oncology 1	Fabiana Cecere	6
O	Robotic vs manual vats lobectomy: prospective, randomized, multicentric study on videothoracoscopic (VATS) vs robotic approach for lobectomy or anatomical segmentectomy in patients affected by early lung cancer	Thoracic Surgery	Francesco Facciolo	0
O	Be-pacific Italian observational study on patient management strategies in real-world clinical practice for patients with locally advanced (stage III) NSCLC	Medical Oncology 1	Fabiana Cecere	0
O	Validazione della proposta di Classificazione Linfonodale del TNM per il tumore del polmone non a piccole cellule: ruolo dell'istologia, della linfoadenectomia e dei trattamenti integrati	Thoracic Surgery	Francesco Facciolo	0
O	The impact on the health status and adherence in a real life setting of Italian patients with chronic obstructive pulmonary disease in treatment with Trimbow PMDI b.i.d.:a 12-month prospective observational study	Pulmonary Phisiopathology	Maria Papale	5
O	A phase II randomized study of Pembrolizumab in patients with advanced malignant pleural mesothelioma	Medical Oncology 1	Fabiana Cecere	7
C	A randomized, double-blind, placebo-controlled phase 3 study of Rovalpituzumab Tesirine as maintenance therapy following first-line platinum-based chemotherapy in subjects with extensive stage small cell lung cancer (MERU)	Medical Oncology 1	Francesco Cognetti	0

O	Sorveglianza attiva delle complicanze infettive polmonari postoperatorie dopo interventi di chirurgia toracica: instituzione di un database per la valutazione dell'appropriatezza della profilassi antibiotica	Anaesthesiology, Critical Area andIntensive Care	Cecilia Coccia	0
O	Decurarization after thoracic anesthesia - a prospective multicenter double-blind randomized trial comparing Sugammadex vs neostigmine reversal after thoracic anesthesia	Anaesthesiology, Critical Area andIntensive Care	Cecilia Coccia	5
C	A phase 3, randomized, open-label study of Lorlatinib (pf-06463922) monotherapy versus Crizotinib monotherapy in the first-line treatment of patients with advanced ALK-positive non-small cell lung cancer	Medical Oncology 1	Francesco Cognetti	0
C	A randomized open-label phase 3 trial comparing bevacizumab + erlotinib vs erlotinib alone as first line treatment of patients with EGFR mutated advanced non squamous non small cell lung cancer	Medical Oncology 1	Fabiana Cecere	0
O	A standard regimen of dexamethasone in comparison to two dex-sparing regimens in addition to NEPA in preventing CINV in naïve NSCLC patients to be treated with cisplatin based chemotherapy: a three-arm, open-label, randomized study	Medical Oncology 1	Fabiana Cecere	2
O	Validation of the alliance against cancer lung panel in patients with non small cell lung cancer	Medical Oncology 1	Fabiana Cecere	0
O	HMENA splicing in the dialogue between tumor, ECM, CAFS and immune cells: role in NSCLC progression and drug resistant	Immunology and Immunotherapy	Paola Nisticò	50
C	A phase III prospective double blind placebo controlled randomized study of adjuvant MEDI4736 in completely resected non-small cell lung cancer	Medical Oncology 1	Fabiana Cecere	2
O	Phase II single arm study with Cabozantinib in non-small cell lung cancer patients with met deregulation	Medical Oncology 1	Fabiana Cecere	2
O	A randomized phase 2 study comparing immunotherapy with chemotherapy in the treatment of elderly patients with advanced NSCLC	Medical Oncology 1	Fabiana Cecere	1
O	Development of an immunoscore test to define immunological parameters associated with the risk of recurrence in N0 NSCLC patients, within the national oncology network Alleanza Contro il Cancro of the Italian Ministry of Health	Immunology and Immunotherapy	Paola Nisticò	37
O	Exploratory study for the identification of the components of an immunological score based on biomolecular analysis and its association with the response to ICBS in patients with advanced lung cancer, within	Immunology and Immunotherapy	Paola Nisticò	10

	the national oncology network Alleanza Contro il Cancro of the Italian Ministry of Health			
O	A phase 3, randomized, blinded, placebo-controlled study of Tislelizumab (BGB-A317) plus chemoradiotherapy followed by Tislelizumab monotherapy in newly diagnosed, stage III subjects with locally advanced unresectable non-small cell lung cancer	Medical Oncology 1	Fabiana Cecere	0
O	Phase II, open-label study, of Atezolizumab in a cohort of pretreated, advanced non-small cell lung cancer (NSCLC) patients with rare histological subtypes (chance trial)	Medical Oncology 1	Fabiana Cecere	2
O	A phase 3, multicenter, randomized, open-label trial to compare the efficacy and safety of Pembrolizumab (MK-3475) in combination with Lenvatinib (E7080/MK-7902) versus Docetaxel in previously treated participants with metastatic non-small cell lung cancer (NSCLC) and progressive disease (PD) after platinum doublet chemotherapy and immunotherapy (LEAP-008)	Medical Oncology 1	Francesco Cognetti	0
O	Validation of the alliance against cancer lung panel in patients with non small cell lung cancer	Medical Oncology 2	Silvia Carpano	7
C	Pembrolizumab for poor PS, high PD-l1, previously untreated NSCLC patients (the NSCLC six p study)	Medical Oncology 1	Fabiana Cecere	7

Sarcoma / Bone tumors

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	Rischio di osteopenia/osteoporosi indotte da chemioterapia in pazienti con sarcomi ossei. Studio osservazionale prospettico	Endocrinology Oncology	Marialuisa Appetecchia	0
O	Valutazione radiologica della risposta in pazienti con sarcomi dei tessuti molli localmente avanzati/metastatici trattati con Trabectedina	Radiology	Vincenzo Anelli	0
O	Localized high-risk soft tissue sarcomas of the extremities and trunk in adults: an integrated approach comprising standard vs histotype-oriented neoadjuvant chemotherapy (ISG-STS 10-01)	Medical Oncology 1	Virginia Ferraresi	0
C	Phase III trial on the efficacy of dose intensification in patients with non-metastatic Ewing sarcoma	Medical Oncology 1	Virginia Ferraresi	1
O	International randomised controlled trial of chemotherapy for the treatment of recurrent and primary refractory Ewing sarcoma	Medical Oncology 1	Virginia Ferraresi	0
O	The Metropholys study. Metronomic Cyclophosphamide vs Doxorubicin in elderly patients with advanced soft tissue sarcomas randomized, controlled open label clinical trial	Medical Oncology 1	Virginia Ferraresi	0
O	Studio multicentrico prospettico per l'analisi del profilo genomico di sarcomi di pazienti pediatrici e giovani adulti alla diagnosi e/o alla ricaduta/refrattarietà di malattia	Medical Oncology 1	Virginia Ferraresi	0
O	Studio del significato clinico di cellule ed acidi nucleici tumorali circolanti nei sarcomi dei tessuti molli e dell'osso	Orthopaedics	Roberto Biagini	6
O	Applicazione della Medicina basata sulla Narrazione nel trattamento dei giovani affetti da sarcoma	Epidemiology & Tumor Registry	Maria Cecilia Cercato	1
O	Genomic characterization study for the improvement of sarcoma diagnosis	Cellular Network and Therapeutic Target	Rita Falcioni	26
O	La protesi di gomito Mutars nella ricostruzione dopo resezioni di tumori ossei del gomito; indicazioni, risultati e complicanze	Orthopaedics	Carmine Zoccali	4
O	Sacral chordoma: a randomized & observational study on surgery versus definitive radiation therapy in primary localized disease (SACRO)	Radiotherapy	Maria Grazia Petrongari	1

SKIN

Status*	Title	Division	Principal investigator	Patients IRE 2019
C	Pattern of response/progression to first line treatment with Dabrafenib and Trametinib in patients with unresectable or metastatic BRAF mutation-positive cutaneous melanoma: the t-win study	Medical Oncology 1	Virginia Ferraresi	2
O	Spanning BCL-2 functions in melanoma models: from microenvironment to microRNA modulation	Preclinical Models and new Therapeutics	Donatella Del Bufalo	39
O	A microRNA-based approach to advanced diagnosis and therapy of metastatic melanoma	Scientific Directorate	Gennaro Ciliberto	20
C	Three arms prospective, randomized phase II study to evaluate the best sequential approach with combo immunotherapy (Ipilimumab/Nivolumab) and combo target therapy (LGX818/MEK162) in patients with metastatic melanoma and BRAF mutation	Medical Oncology 1	Virginia Ferraresi	6
C	Beyond tumor cell targeting with pathway inhibitors in human melanoma: role of the microenviroment	Medical Oncology 1	Ludovica Ciuffreda	0
O	A phase II trial of Vemurafenib plus Cobimetinib in patients treated with prior first-line systemic immunotherapy for inoperable locally advanced or metastatic melanoma	Medical Oncology 1	Francesco Cognetti	0
C	An evaluation of the efficacy beyond progression of Vemurafenib combined with Cobimetinib associated with local treatment compared to second-line treatment in patients with BRAFV600 mutation-positive metastatic melanoma in focal progression with first-line combined Vemurafenib and Cobimetinib	Medical Oncology 1	Virginia Ferraresi	0
C	A retrospective chart review study of Dabrafenib and Trametinib combination therapy in patients with advanced or metastatic BRAF v600 mutated melanoma treated in Italy within the individual patient program: the describe Italy study	Medical Oncology 1	Virginia Ferraresi	0
O	Validazione di un nuovo pannello di next generation sequencing per l'analisi mutazionale di campioni istopatologici di pazienti con melanoma metastatico trattati con inibitori di BRAF e MEK o con anticorpi anti-PD-1	Medical Oncology 1	Virginia Ferraresi	14

C	COMBI-APLUS: open-label, phase IIIb study of Dabrafenib in combination with Trametinib in the adjuvant treatment of stage III BRAF v600 mutation-positive melanoma after complete resection to evaluate the impact on pyrexia related outcomes of an adapted pyrexia ae-management algorithm (PLUS)	Medical Oncology 1	Virginia Ferraresi	9
O	Melanoma 4p: biobanking e nuove metriche biomolecolari	Oncogenomics and Epigenetics	Patrizio Giacomini	50
C	Valutazione della predittività dei parametri semiquantitativi della PET/CT con 18F-FDG nel monitoraggio della risposta ai farmaci inibitori del checkpoint immunitario, in pazienti affetti da melanoma metastatico	Nuclear Medicine	Alessio Annovazzi	57
O	Combination of targeted therapy (Encorafenib and Binimetinib) followed by combination of immunotherapy (Ipilimumab and Nivolumab) vs immediate combination of immunotherapy in patients with unresectable or metastatic melanoma with BRAF v600 mutation: an EORTC randomized phase II study (EBIN)	Medical Oncology 1	Virginia Ferraresi	0
	Nivolumab e Pembrolizumab in real life nel melanoma avanzato metastatico: studio osservazionale su farmacoutilizzazione, effectiveness e safety	Pharmacovigilance	Felice Musicco	123
C	A retrospective chart review of Italian patients with advanced/metastatic melanoma with limited or no treatment options and treated with Pembrolizumab in the Pembrolizumab (MK-3475) expanded access program (EAP)	Medical Oncology 1	Virginia Ferraresi	18
O	Analisi dei profili di espressione dei microRNA e genotipizzazione del papillomavirus umano in una casistica retrospettiva di melanoma vulvare	Pathology	Mariantonia Carosi	0

THIMIC

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	Clinical-pathologic and molecular study of thymic epithelial tumors (on ITMIG databases)	Pathology	Mirella Marino	0

UROLOGICAL

Status*	Title	Division	Principal investigator	Patients IRE 2019

O	Studio Pilota di valutazione dell'utilizzo della 64Cu-PET/TC total body in pazienti con recidiva in loggia prostatica visibile in RMmp	Radiotherapy	Giuseppe Sanguineti	21
O	A randomized prospective multicentre open-label phase II study of androgen deprivation therapy (ADT) plus radiotherapy with or without abiraterone acetate and Prednisone in locally advanced very high-risk prostate cancer	Medical Oncology 1	Paolo Carlini	0
O	Ruolo della PET con 64Cu-PSMA nel carcinoma della prostata (PC): diagnosi precoce di recidiva biochimica	Nuclear Medicine	Rosa Sciuto	55
O	A randomized, double-blind, placebo controlled phase 3 study of JNJ-56021927 in subjects with high risk, localized or locally advanced prostate cancer recived treatment wirh primary radiation therapy	Radiotherapy	Giuseppe Sanguineti	0
O	Validazione di modelli predittivi di tossicità dopo trattamento radioterapico per tumore della prostata. Disfunzione Urinaria ed Erettile - 02	Radiotherapy	Giuseppe Sanguineti	30
O	Studio di fase I-II sulla fattibilità e attività della Radioterapia Stereotassica con Acceleratore Lineare in 3 frazioni per Carcinoma della Prostata a rischio basso/intermedio	Radiotherapy	Giuseppe Sanguineti	27
O	Studio osservazionale prospettico multicentrico della tossicità intestinale, ematologica e urinaria da irradiazione dell'area linfonodale pelvica (IHU WPRT TOX) nel tumore della prostata	Radiotherapy	Giuseppe Sanguineti	5
O	Use of 64CUCL2 PET/CT imaging in the selection of patients with prostate cancer in biochemical relapse after prostatectomy, to be successfully treated with salvage radiotherapy on the prostatic bed	Nuclear Medicine	Rosa Sciuto	7
O	Correlazione tra dosimetria fisica, effetti biologici e tossicità clinica nel paziente con carcinoma della prostata metastatico resistente alla castrazione (mCRPC) trattato con radium-223	Nuclear Medicine	Rosa Sciuto	3
O	Studio multicentrico randomizzato di fase III: Docetaxel vs ormonoterapia come trattamento di seconda linea in pazienti asintomatici o oligosintomatici con tumore della prostata metastatico, resistente alla castrazione, in progressione dopo terapia con Abiraterone o Enzalutamide	Medical Oncology 1	Paolo Carlini	0
O	Variazioni di pressione transpolmonare in condizioni di pneumoperitoneo e steep Trendelenburg durante chirurgia videolaparoscopica robot-assistita. Studio pilota prospettico osservazionale	Anaesthesiology, Critical Area andIntensive Care	Ester Forastiere	1

O	Validazione del Mitomic Test nello screening del tumore della prostata	Urology	Giuseppe Simone	120
O	Modificazioni radioindotte delle sottopopolazioni linfoidi coinvolte nei meccanismi di resistenza e di escape al trattamento del carcinoma localizzato della prostata	Radiotherapy	Giuseppe Sanguineti	20
O	A randomized, double-blind, placebo-controlled, phase 3 study of Apalutamide in subjects with high-risk, localized or locally advanced prostate cancer who are candidates for radical prostatectomy	Urology	Giuseppe Simone	11
O	Higher diagnostic accuracy of 64CU PET/CT compared to standard 18f-choline pet/ct in the detection rate of metastasis from prostate cancer	Nuclear Medicine	Rosa Sciuto	0
O	Aderenza alla terapia ormonale nei pazienti con carcinoma prostatico resistente alla castrazione: validazione di un questionario	Medical Oncology 1	Emanuela Taraborelli	0
O	Valutazione dei risultati perioperatori, oncologici e funzionali della nefrectomia parziale robotica per neoplasie in stadio clinico T1 e T2: definizione di un nuovo trifecta	Urology	Giuseppe Simone	494
O	A phase III, randomized, double-blind, placebo-controlled clinical trial of Pembrolizumab (MK-3475) as monotherapy in the adjuvant treatment of renal cell carcinoma post nephrectomy (KEYNOTE-564)	Medical Oncology 1	Gianluigi Ferretti	0
O	Studio pilota di radioterapia stereotassica pre-operatoria per carcinoma renale operabile in stadio iniziale (Ct1)	Radiotherapy	Giuseppe Sanguineti	0
C	Investigation of urinary LET-7C AS a non-invasive diagnostic biomarker in high grade non-muscle invasive bladder cancer patients	Oncogenomics and Epigenetics	Maria Giulia Rizzo	57
C	A phase 3 randomized, double-blind, multi-center study of adjuvant nivolumab versus placebo in subjects with high risk invasive urothelial carcinoma	Medical Oncology 1	Francesco Cognetti	0
O	Cistectomia radicale open versus robotica con derivazione urinaria totalmente intracorporea. Studio prospettico randomizzato mono-centrico	Urology	Giuseppe Simone	42
O	Biomarker study to identify subjects with advanced urothelial cancer and fibroblast growth factor receptor gene aberrations	Urology	Giuseppe Simone	9

MISCELLANEA

Status*	Title	Division	Principal investigator	Patients IRE 2019
O	La malattia di Castleman multicentrica: una rivisitazione dello stato dell'arte	Pathology	Mirella Marino	0
O	Effetto funzionale della radioterapia su cellule tumorali e fibroblasti associati al tumore e loro proprietà immunomodulatrici: modelli di 3D bioprint per disegnare nuove terapie combinate	Immunology and Immunotherapy	Francesca Di Modugno	4
O	Phase 1 development of an EORTC QOL cancer survivorship questionnaire	Neuroncology	Andrea Pace	0
O	Molecular mechanism of quadruplex-targeted drugs: towards clinical candidate selection	SAFU	Carlo Leonetti	20
O	La Biopsia Liquida: studio di fattibilità e trasferibilità alla routine clinica	Oncogenomics and Epigenetics	Patrizio Giacomini	38
O	Karyotypic aberrations in cancer stem cells as a source of immunogens for adoptive t-cell therapy: the right allies for therapeutic success?	Immunology and Immunotherapy	Ilio Vitale	0
O	Studio clinico sull'utilizzo di un polimero elastico a base di silicone (VK-100) per l'augmentation vertebrale (elastoplastica), in comparazione (2:1) con il PMMA (cemento), nelle fratture somatiche da insufficienza correlate con patologie metastatiche o localizzazioni di malattie emolinfoproliferative e vertebre osteoporotiche in malattie neoplastiche	Neurosurgery	Stefano Telera	1
O	Analisi del valore predittivo di efficacia delle terapie anti-neoplastiche basata sulla valutazione di pathways molecolari connessi alle cellule staminali tumorali: studio multi-setting e multi-tumore. HIERARCHY Study	Medical Oncology 2	Patrizia Vici	0
O	Studio Nazionale NICSO: Progetto Di Monitoraggio Medico- Infermieristico Degli Effetti Collaterali Da Terapie Oncologiche	Medical Oncology 1	Alessandra Fabi	30
O	Development and validation of a tool for patient-reported assessment of cancer related financial toxicity	Biostatitic	Diana Giannarelli	30
O	Studio osservazionale, multicentrico, per la valutazione dell'efficacia di un intervento multifattoriale per migliorare la comunicazione verso i familiari di pazienti ricoverati in Terapia Intensiva	Anaesthesiology, Critical Area andIntensive Care	Lorella Pelagalli	12
O	VIP: validation of the Italian version of the patient- reported outcomes - common terminology criteria for adverse events (PRO-CTCAE): a prospective multicenter	Medical Oncology 2	Patrizia Vici	0

	observational study on different cancer types			
O	VIP: validation of the Italian version of the patient- reported outcomes - common terminology criteria for adverse events (PRO-CTCAE): a prospective multicenter observational study on different cancer types	Medical Oncology 1	Antonella Savarese	0
C	International observational study to understand the impact and best practices of airway management of critically ill patients	Anaesthesiology, Critical Area andIntensive Care	Lorella Pelagalli	10
O	SPECTA: Screening Cancer Patients for Efficient Clinical Trial Access	Pathology	Edoardo Pescarmona	6
C	Indicazione al vaccino anti-influenzale durante immunoterapia oncologica con inibitori dei checkpoint immunitari. studio prospettico osservazionale multicentrico	Medical Oncology 1	Vanja Vaccaro	0
C	Utilizzo del Gel antibiotato (DAC-gel) nella prevenzione delle infezioni periprotesiche dopo ricostruzione con megaprotesi: una serie di casi retrospettivi multicentrici	Orthopaedics	Carmine Zoccali	47
O	Multicenter, non-interventional study on patients with atrial fibrillation (AF) and cancer (diagnosed within the last 3 years prior to enrolment)	Cardiology	Francesco Rulli	0
O	La valutazione psicologica in cardioncologia: il ruolo dell'alessitimia e del senso di coerenza nella costruzione di significato e nella crescita post-traumatica	Cardiology	Francesco Rulli	0
O	Analysis of the transcriptional expression profile and microRNAs in brain metastases from primary tumors of various origin	Oncogenomics and Epigenetics	Giovanni Blandino	0
O	A phase Ib, open-label, multicenter study evaluating the safety and efficacy of Ipatasertib in combination with rucaparib in patients with advance breast, ovarian, or prostate cancer	Medical Oncology 1	Francesco Cognetti	0
O	L'esperienza immersiva della realtà virtuale in corso di trattamento chemioterapico adiuvante nelle donne con neoplasia della mammella e dell'ovaio in fase precoce	Medical Oncology 1	Alessandra Fabi	41
O	Valutazione della neurotossicità in pazienti oncologici affetti da Multiple (4-10) metastasi cerebrali trattati con radioterapia stereotassica	Radiotherapy	Laura Marucci	9
O	RevEr3mAb: un farmaco biologico innovativo per revertire la resistenza a terapie oncologiche convenzionali	SAFU	Maurizio Fanciulli	10

O	Studio clinico spontaneo, multicentrico, osservazionale, prospettico, in aperto non controllato, per la verifica dell'efficacia del kit DAC® (Denfensive Antibacterial Coating) gel nella prevenzione delle complicanze settiche nella chirurgia megaprotesica in pazienti sottoposti a ricostruzione dopo grandi resezioni ossee	Orthopaedics	Carmine Zoccali	4
O	A phase 1 dose escalation and cohort expansion study of TSR-042, an anti-PD-1 monoclonal antibody, in patients with advanced solid tumors	Medical Oncology 2	Patrizia Vici	0
O	Non coding RNA in solid tumors	Pathology	Mariantonia Carosi	0
O	Facilitatori e/o barriere all'accesso al supporto psicologico in pazienti oncologici: uno studio multicentrico	Psychology	Patrizia Pugliese	0
C	An open-label, multicenter follow-up study to collect long-term data on participants from multiple Avelumab (msb0010718c) clinical studies	Medical Oncology 1	Fabiana Cecere	1
O	A phase 2, open-label, single arm, multicenter study to evaluate the efficacy and safety of Pemigatinib in participants with previously treated locally advanced/metastatic or surgically unresectable solid tumor malignancies harboring activating FGFR	Medical Oncology 1	Francesco Cognetti	0
O	A phase 2 study of INCMGA00012 (pd-1 inhibitor) in participants with selected solid tumors (POD1UM-203)	Medical Oncology 1	Francesco Cognetti	1

Status*:
O = open
C = Close

ISTITUTIONAL COURSES

INSTITUTIONAL COURSES 2019

Scientific Coordinator	Ed	Date from	Date to	Title
Aldo Venuti	1	16/04/2019	18/06/2019	Ridait Seminars - I modulo
Aldo Venuti	1	12/09/2019	10/10/2019	Ridait Seminars - II modulo
Aldo Venuti	1	05/11/2019	17/12/2019	RidaitSseminars - III modulo
Gaetana Cognetti	1	02/10/2019	16/10/2019	Le risorse elettroniche della biblioteca per la ricerca sperimentale e clinica
Gaetana Cognetti	1	14/06/2019	14/06/2019	La medicina narrativa
Federica Falcioni	1	05/11/2019	06/11/2019	Gestione degli studi clinici: principali aspetti normativi-organizzativi e la piattaforma smart

DMT: PATIENTS UNDER OUR CARE

Scientific Coordinator	Ed	Date from	Date to	Title
Laura Eibenschutz – Pasquale Frascione	1	18/04/2019	18/07/2019	DMT tumori della cute non melanoma- I modulo
Laura Eibenschutz – Pasquale Frascione	1	19/09/2019	19/12/2019	DMT tumori della cute non melanoma- II modulo
Enrico Vizza	1	18/09/2019	30/10/2019	DMT - incontri multidisciplinari in ginecologia oncologica– I modulo
Enrico Vizza	1	06/11/2019	18/12/2019	DMT - incontri multidisciplinari in ginecologia oncologica– II modulo
Maria Luisa Appetecchia	1	16/04/2019	21/05/2019	DMT carcinoma tiroide - I modulo
Agnese Barnabei	1	12/11/2019	26/11/2019	DMT carcinoma tiroide – II modulo
Maria Luisa Appetecchia	1	03/12/2019	17/12/2019	DMT carcinoma tiroide – III modulo
Virginia Ferraresi	1	15/04/2019	01/07/2019	DMT neoplasie muscolo-scheletriche - sarcomi viscerali e gist – I modulo
Virginia Ferraresi	1	11/11/2019	16/12/2019	DMT neoplasie muscolo-scheletriche - sarcomi viscerali e gist– II modulo
Francesco Cognetti - Roy De Vita	1	27/05/2019	21/06/2019	Incontri multidisciplinari della breast unit: disease management team delle neoplasie della mammella - I modulo
Raul Pellini	1	27/11/2019	18/12/2019	Incontri multidisciplinari DMT orl _ I modulo
Andrea Mengarelli	1	25/03/2019	15/04/2019	DMT- incontri multidisciplinari in ematologia – I modulo
Andrea Mengarelli	1	20/05/2019	24/06/2019	DMT- incontri multidisciplinari in ematologia – II modulo
Andrea Mengarelli	1	14/10/2019	02/12/2019	DMT- incontri multidisciplinari in ematologia – III modulo
Pasquale Frascione – Emilia Migliano	1	07/05/2019	18/06/2019	Incontri multidisciplinari DMT melanoma – I modulo
Pasquale Frascione – Emilia Migliano	1	15/10/2019	17/12/2019	Incontri multidisciplinari DMT melanoma – II modulo

Alessandra Fabi - Andrea Pace	1	25/06/2019	30/07/2019	DMT applicazione nella pratica clinica Quotidiana dei principi ebm in neuroncologia- I modulo
Alessandra Fabi - Andrea Pace	1	10/09/2019	15/10/2019	DMT applicazione nella pratica clinica Quotidiana dei principi ebm in neuroncologia- II modulo

BLSD: Patient Safety and Treatment Safety

Scientific Coordinator	Ed	Date from	Date to	Title
Lolli Silvia	1	11/10/2019	11/10/2019	BLSD (B)
Lolli Silvia	2	17/10/2019	17/10/2019	BLSD (B)
Lolli Silvia	3	25/10/2019	25/10/2019	BLSD (B)
Lolli Silvia	4	31/10/2019	31/10/2019	BLSD (B)
Lolli Silvia	5	08/11/2019	08/11/2019	BLSD (B)
Lolli Silvia	6	22/11/2019	22/11/2019	BLSD (B)
Lolli Silvia	7	29/11/2019	29/11/2019	BLSD (B)
Lolli Silvia	8	13/12/2019	13/12/2019	BLSD (B)
Lolli Silvia	9	18/12/2019	18/12/2019	BLSD (B)

PSYCO ONCOLOGY: Care and Assistance towards caregivers and families

Scientific Coordinator	Ed	Date from	Date to	Title
Anita Caruso	1	28/01/2019	30/01/2019	Dal benessere alla patologia: la persona e il suo contesto
Anita Caruso	1	10/06/2019	12/06/2019	Aspetti biologici e aspetti relazionali della malattia oncologica
Anita Caruso	1	16/09/2019	18/09/2019	La comunicazione in ambito oncologico
Anita Caruso	1	02/12/2019	04/12/2019	Il counselling genetico. La morte e il morire
Anita Caruso	1	21/01/2019	23/01/2019	L'intervento clinico interdisciplinare
Anita Caruso	1	17/06/2019	19/06/2019	Il contesto familiare e le dinamiche emotive degli operatori
Anita Caruso	1	23/09/2019	25/09/2019	Il bambino, l'adolescente e la malattia oncologica
Anita Caruso	1	09/12/2019	11/12/2019	Prospettive in psico-oncologia

PHASE I: Clinical Trials

Scientific Coordinator	Ed	Date from	Date to	Title
Isabella Bertazzi – Silvia Lolli	1	01/07/2019	05/07/2019	La gestione degli accessi venosi
Isabella Bertazzi – Silvia Lolli	2	08/07/2019	12/07/2019	La gestione degli accessi venosi
Isabella Bertazzi – Silvia Lolli	3	15/07/2019	19/07/2019	La gestione degli accessi venosi
Isabella Bertazzi – Silvia Lolli	4	22/07/2019	26/07/2019	La gestione degli accessi venosi
Isabella Bertazzi – Silvia Lolli		01/07/2019	05/07/2019	La gestione degli accessi venosi
Isabella Bertazzi – Silvia Lolli	1	30/09/2019	04/10/2019	Le emergenze cliniche e gli eventi appropriati
Tiziana Lavalle	1	18/11/2019	16/12/2019	Le buone pratiche cliniche nelle sperimentazioni di fase 1 e di fase successiva
Tiziana Lavalle	1	12/06/2019	12/06/2019	Buone pratiche di laboratorio
Tiziana Lavalle	1	26/06/2019	26/06/2019	Il sistema regolatorio

Other events

Scientific Coordinator	Ed	Date from	Date to	Title
Tiziana Lavalle	1	29/03/2019	29/03/2019	Conflitto di interessi sponsorizzazioni e codice di comportamento nella formazione
Anita Caruso	1	15/04/2019	24/06/2019	I gruppi di tipo balint
Aldo Morrone	1	16/04/2019	07/05/2019	Seminari ISG Imodulo 2019
Cecilia Coccia Silvia Lolli Maria Sofra	1	14/05/2019	14/05/2019	Corso teorico-pratico sulla gestione vie aeree: corso base
Aldo Morrone	1	14/05/2019	18/06/2019	Seminari ISG II modulo 2019
Coccia Cecilia, Spano Alessandro	1	29/05/2019	29/05/2019	Normotermia perioperatoria
Tiziana Lavalle	1	30/05/2019	10/12/2019	Buone pratiche strategiche di valutazione della Formazione nelle aziende sanitarie
Cecilia Coccia Maria Sofra	1	04/06/2019	07/06/2019	Corso teorico-pratico sulla gestione vie aeree: corso avanzato
Tiziana Lavalle	1	05/06/2019	18/12/2019	Primary nursing e l'assistenza basata sulla relazione
Coccia Cecilia, Spano Alessandro	2	10/06/2019	10/06/2019	Normotermia perioperatoria
Luigi Toma	1	10/06/2019	10/06/2019	Hospital meeting. Uso responsabile degli antibiotici ch. Dig- epatobiliare
Luigi Toma	2	11/06/2019	11/06/2019	Hospital meeting. Uso responsabile degli antibiotici urologia e ginecologia
Luigi Toma	4	17/06/2019	17/06/2019	Hospital meeting. Uso responsabile degli antibiotici neurochirurgia e ortopedia

Luigi Toma	5	18/06/2019	18/06/2019	Hospital meeting. Uso responsabile degli antibiotici oncologia 1-2 ematologia
Luigi Toma	6	19/06/2019	19/06/2019	Hospital meeting. Uso responsabile degli antibiotici toracica- pneumologia - otorino
Luigi Toma	7	04/07/2019	04/07/2019	Hospital meeting. Uso responsabile degli antibiotici trasfusionale - endocrinologia- cardio - gastro terapia int- ds dh
Fabaiana Cecere	1	19/06/2019	19/06/2019	Open day tumori del timo. Medici e pazienti a confronto
Aldo Morrone	1	25/06/2019	24/09/2019	Seminari ISG III modulo 2019
Assunta De Luca	1	01/07/2019	01/07/2019	Prevenzione degli atti di violenza a danno degli operatori sanitari – diffusione della procedura aziendale sulla raccomandazione ministero n.8
Tiziana Lavalle	1	02/07/2019	05/12/2019	Le piattaforme di degenza e i meccanismi operativi efficaci- epb-digestiva
Tiziana Lavalle	1	11/09/2019	05/12/2019	Le piattaforme di degenza e i meccanismi operativi efficaci orl-nch
Rosa Sciuto	1	10/07/2019	11/12/2019	Rischio clinico in medicina nucleare
Bertazzi Isabella-Lolli Silvia	1	31/07/2019	06/08/2019	Le emergenze e gli interventi appropriati in oncologia ematologia
Bertazzi Isabella-Lolli Silvia	2	05/08/2019	09/08/2019	Le emergenze e gli interventi appropriati in oncologia - ematologia
Bertazzi Isabella-Lolli Silvia	3	16/09/2019	20/09/2019	Le emergenze e gli interventi appropriati in oncologia ematologia
Bertazzi Isabella-Lolli Silvia	4	23/09/2019	27/09/2019	Le emergenze e gli interventi appropriati in oncologia ematologia
Antonello Vidiri	1	13/09/2019	04/10/2019	Diagnostica per immagini interventistica della mammella: rivalutazione multidisciplinare - I modulo
Bertazzi Isabella-Giannarelli Diana	1	16/09/2019	18/11/2019	Biostatistica per la ricerca
Caruso Anita	1	19/09/2019	05/12/2019	I gruppi di tipo balint- II modulo
Assunta De Luca	1	13/09/2019	13/09/2019	Raccomandazione ministeriale n. 13: prevenzione e gestione della caduta del paziente nelle strutture sanitarie.
Carmela Stigliano	1	23/09/2019	23/09/2019	La donazione degli organi e tessuto corneale: fare team in ambito oncologico 2 focus day
Mara Anna Maria Battista	1	24/09/2019	24/09/2019	La gestione del point of care testing micros per la valutazione dell'esame Emocitometrico

Coccia Cecilia - Sofra Maria - Lolli Silvia	2	24/09/2019	24/09/2019	Corso teorico-pratico sulla gestione vie aeree: corso base
Salce Lorella	1	25/09/2019	25/09/2019	Linkedin per i professionisti della ricerca e della clinica: come utilizzare al meglio la piattaforma
Luigi Toma	1	26/09/2019	26/09/2019	La prevenzione e la gestione delle infezioni
Aldo Morrone	1	01/10/2019	05/11/2019	Seminari ISG iv modulo 2019
Anna Lucia Cinquina	1	02/10/2019	09/10/2019	Corso formazione generale lavoratori per la sicurezza per il personale amministrativo rischio basso
Antonello Vidiri	1	11/10/2019	08/11/2019	Diagnostica per immagini interventistica della mammella: rivalutazione multidisciplinare - ii modulo
Paolo Basili	1	02/10/2019	02/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	2	03/10/2019	03/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	3	08/10/2019	08/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	5	15/10/2019	15/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	6	16/10/2019	16/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	7	17/10/2019	17/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	9	23/10/2019	23/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	10	24/10/2019	24/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	11	29/10/2019	29/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	12	30/10/2019	30/10/2019	La gestione degli accessi venosi - save the line
Paolo Basili	13	05/11/2019	05/11/2019	La gestione degli accessi venosi - save the line
Paolo Basili	14	06/11/2019	06/11/2019	La gestione degli accessi venosi - save the line
Paolo Basili	15	12/11/2019	12/11/2019	La gestione degli accessi venosi - save the line
Paolo Basili	16	13/11/2019	13/11/2019	La gestione degli accessi venosi - save the line
Paolo Basili	17	19/11/2019	19/11/2019	La gestione degli accessi venosi - save the line
Paolo Basili	20	26/11/2019	26/11/2019	La gestione degli accessi venosi - save the line
Paolo Basili	21	27/11/2019	27/11/2019	La gestione degli accessi venosi - save the line
Paolo Basili	22	28/11/2019	28/11/2019	La gestione degli accessi venosi - save the line
Paolo Basili	23	03/12/2019	03/12/2019	La gestione degli accessi venosi - save the line

Paolo Basili	24	04/12/2019	04/12/2019	La gestione degli accessi venosi - save the line
Paolo Basili	25	05/12/2019	05/12/2019	La gestione degli accessi venosi - save the line
Paolo Basili	28	17/12/2019	17/12/2019	La gestione degli accessi venosi - save the line
Paolo Basili	29	18/12/2019	18/12/2019	La gestione degli accessi venosi - save the line
Silvia Lolli	1	15/10/2019 H12-1400	17/12/2019	Inglese scientifico livello advanced (c1-c2)
Silvia Lolli	2	15/10/2019 H 14-1600	17/12/2019	Inglese scientifico livello advanced (c1-c2) senza crediti
Silvia Lolli	1	16/10/2019 H12-1400	18/12/2019	Inglese scientifico livello intermedie (b1-b2)
Silvia Lolli	2	16/10/2019 H 14-1600	18/12/2019	Inglese scientifico livello intermedie (b1-b2)
Silvia Lolli	1	17/10/2019 H12-1400	19/12/2019	Inglese scientifico livello base (a1-a2)
Silvia Lolli	2	17/10/2019 H14-1600	19/12/2019	Inglese scientifico livello base (a1-a2)
Silvia Lolli	3	18/10/2019 H12-14.00	20/12/2019	Inglese scientifico livello base (a1-a2)
Silvia Lolli	4	18/10/2019 H14-16.00	20/12/2019	Inglese scientifico livello base (a1-a2)
Assunta De Luca	1	17/10/2019	17/10/2019	Il sistema di qualità e la gestione del rischio clinico
Coccia Cecilia - Sofra Maria	2	22/10/2019	25/10/2019	Corso teorico-pratico sulla gestione vie aeree: corso avanzato
Carmela Stigliano	2	28/10/2019	28/10/2019	La donazione degli organi e tessuto corneale: fare team in ambito oncologico 2 focus day
Andrea Mengarelli	1	29/10/2019	29/10/2019	Incontri di aggiornamento infermieristico su nuove acquisizioni diagnostico-terapeutiche assistenziali nel campo della emato-oncologia
Andrea Mengarelli	2	07/11/2019	07/11/2019	Incontri di aggiornamento infermieristico su nuove acquisizioni diagnostico-terapeutiche assistenziali nel campo della emato-oncologia
Andrea Mengarelli	3	06/12/2019	06/12/2019	Incontri di aggiornamento infermieristico su nuove acquisizioni diagnostico-terapeutiche assistenziali nel campo della emato-oncologia
Annalucia Cinquina	1	07-11-2019	27-11-2019	Corso di formazione generale lavoratori per la sicurezza per il personale sanitario rischio alto (senza crediti)
Coccia Cecilia - Sofra Maria - Lolli Silvia	3	06/11/2019	06/11/2019	Corso teorico-pratico sulla gestione vie aeree: corso base
Annalucia Cinquina	2	07-11-2019	27-11-2019	Corso di formazione generale lavoratori per la sicurezza per il personale sanitario rischio alto

Aldo Morrone	1	12/11/2019	17/12/2019	Seminari isg v modulo 2019
Antonello Vidiri	1	15/11/2019	06/12/2019	Diagnostica per immagini interventistica della mammella: rivalutazione multidisciplinare - iii modulo
Andrea Pace	1	20/11/2019	04/12/2019	Riunioni equipe assistenza domiciliare neuro i modulo
Annalucia Cinquina	1	26/11/2019	26/11/2019	Corso di formazione generale lavoratori per la sicurezza per il personale sanitario rischio alto
Gian Luca Grazi	1	27/11/2019	27/11/2019	Trattamento multidisciplinare delle metastasi epatiche colorettali
Annalucia Cinquina	1	02/12/2019	12/12/2019	Corso di formazione per la sicurezza per i dirigenti
	1	02/12/2019	02/12/2019	Il ruolo dell'infermiere in un servizio di fototerapia:assistenza e competenze
Andrea Pace	1	09/12/2019	18/12/2019	Riunioni equipe assistenza domiciliare neuro - ii modulo
Branka Vujovic	1	11/12/2019	11/12/2019	Quality day
Assunta De Luca	2	12/12/2019	12/12/2019	Prevenzione degli atti di violenza a danno degli operatori sanitari – diffusione della procedura aziendale sulla raccomandazione ministero n.8
Tiziana Lavalle	1	13/12/2019	13/12/2019	E-learning e sviluppo delle competenze attraverso il digitale: progettazione e gestione dei corsi in formazione a distanza. Modulo 1 – teoria e filosofia della formazione
Ferranti Francesca Romana-Fodde Francesca-Saracca Elena	1	13/12/2019	13/12/2019	L'iter diagnostico dei tumori mammari nel contesto di una diagnostica senologica integrata innovazioni tecnologiche
Agnese Barnabei	1	17/12/2019	17/12/2019	Tossicità endocrine dei trattamenti antineoplastici
Rosa Sciuto	1	17/12/2019	18/12/2019	Metodologie di progettazione, implementazione e verifica degli studi clinici con radiofarmaci
Cercato Maria Cecilia - Ferraresi Virginia	1	19/12/2019	19/12/2019	European network for rare adult solid