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Introduction

Few studies compared the oncologic outcomes of partial nephrectomy (PN) and radical nephrectomy (RN) for renal tumors larger than 7cm. In this study we compared oncologic outcomes of propensity score matched (PSM) cohorts of PN and RN performed in patients with cT1-2-Nx renal tumors and pathologically confirmed pT1-pT3a-pNx clear cell (cc)- renal cell carcinoma (RCC).

Materials and methods

The institutional review board approved prospective renal cancer database was queried for cT<3-cN0-cM0 and pT1a-pT3a-pNx cc-RCC. A 1:1 PSM analysis was used to minimize the potential biases of a retrospective analysis of data. Kaplan-Meier method was performed to compare the oncologic outcomes of the PSM cohorts. Survival rates were computed at 2, 5, and 10 yr after surgery and the log rank test applied to assess statistical significance between the two groups.

Table 1

	Whole cohort		p value*	PS Matched Cohort		p value*
	RN (232)	PN (434)		RN (155)	PN (155)	
Mean Age, ±SD	60.2± 12.3	60± 13.6	0.82	60±12.9	59.9±13.8	0.89
Gender, (%)						
Male	145 (62.5%)	279 (64.3%)	0.648	94 (60.6%)	96 (61.9%)	0.816
Female	87 (37.5%)	155 (35.7%)		61 (39.4%)	59 (38.1%)	
Mean tumor size (cm), ±SD	5.54±2.05	3.63±1.64	<0.001	4.85±1.8	4.76±1.9	0.66
Fuhrman grade, (%)						
1	9 (3.9)	33 (7.6)	0.002	9 (5.8)	5 (3.2)	0.32
2	133 (57.3)	280 (64.5)		93 (60)	102 (65.8)	
3	80 (34.5)	116 (26.7)		47 (30.3)	46 (29.7)	
4	10 (4.3)	5 (1.2)		6 (3.9)	2 (1.3)	
pT Stage, (%)						
1a	55 (23.7)	282 (64.9)	<0.001	53 (34.2)	53 (34.2)	1.00
1b	93 (40.1)	108 (24.9)		69 (44.5)	69 (44.5)	
2a	30 (12.9)	15 (3.5)		12 (7.7)	12 (7.7)	
2b	32 (13.8)	16 (3.7)		12 (7.7)	12 (7.7)	
3a	22 (9.5)	13(3)		9 (5.8)	9 (5.8)	
Sarcomatoid differentiation, (%)	5 (2.2)	2 (0.5)		0.041	2 (1.3)	
Positive Surgical Margins, (%)	17 (1.8)	2 (3.6)	0.351	0 (0)	0 (0)	1.00

Results

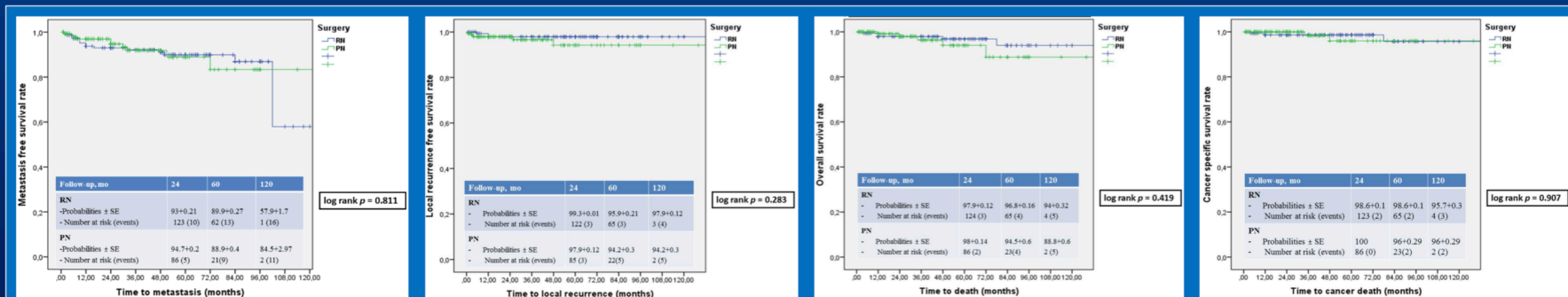
Out of 1650 cases, 921 were cc-RCC and 666 patients met inclusion criteria, 232 of which treated with RN and 434 with PN. A comparison of oncologic outcomes between PN and RN was performed. RN tumors were significantly larger (p<0.001), with higher pT stage (p<0.001) and higher incidences of Fuhrman grade 3-4 (p=0.002). After applying the PSM, 155 RN patients were matched with 155 PN cases. The two groups did not differ for all clinical and pathologic variables included in the analysis (Table 1).

At Kaplan-Meier analysis PN and RN cohorts displayed comparable Metastasis Free Survival (5-yr 88,9% vs 89,9%, respectively, p= 0.811), Local Recurrence Free Survival (5-yr 94,2% vs 95,9%, respectively, p = 0.283), Overall Survival (5-yr 94,5% vs 96,8%, respectively, p= 0.419), Cancer Specific Survival (5-yr 96% vs 98,6% respectively, p = 0.907) rates (Figure 1).

Conclusions

Our findings support oncologic equivalence of PN and RN also for patients with cc-RCC larger than 7 cm. Further studies and larger cohorts are warranted to confirm our findings.

Figure 1



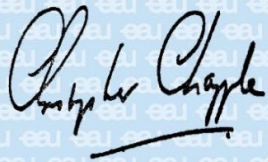
Certificate

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G. Tuderti

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