STRATIFYING SIZE WITHIN RENAL CELL CARCINOMA STAGING GROUPS DOES NOT CORRELATE TO OUTCOMES; A SINGLE INSTITUTION EXPERIENCE WITH 870 PATIENTS OVER 15 YEARS

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Introduction

- Tumor size is a well-established prognostic biomarker in patients with renal cell carcinoma (RCC).
- While compelling evidence has previously shown the prognostic relevance of dividing T2 tumors into T2a (>7cm and <10cm) and T2b (>10cm), there is a paucity of evidence to support the subcategorization of tumors into T1a and T1b.
- This study is aimed to determine the prognostic relevance of subcategorization within T1 disease, as well as the prognostic significance of tumor dimension below 7cm.

Methods

- Retrospective study of 870 patients who underwent surgical management of renal tumors between 2000 and 2015
  - On final pathology 615 patients had pT1 disease, of which:
  - pT1a: 459 patients had T1a on final pathology
  - pT1b: 161 patients had T1b on final pathology
- Outcomes analyzed included Overall Survival (OS), cancer-specific survival (CSS), and recurrence-free survival (RFS)
- Multivariate Cox regression analysis was used to assess the association between T1 subcategory and cancer-specific survival adjusting for age, gender, ASA class, tumor grade, and histologic subtype

Results

- The median follow-up for both patient groups was 6 years (IQR 2.8-10.5), and median age at presentation was 62 and 65 years for T1a and T1b, respectively.
- There was no statistically significant difference in survival outcomes between T1a and T1b disease with respect to OS (Figure 1), CSS (Figure 2), or RFS (Figure 3).
- Additionally, there was no significant association with maximum tumor dimension in OS (p=0.79), CSS (p=0.39), and RFS (p=0.23) across all T1 disease.
- On multivariate Cox regression, T1b was not associated with worse RFS compared to T1a after adjusting for histologic subtype (HR 1.28, 95% CI 0.513-3.163).

Table 1. Demographics and Baseline characteristics of T1a and T1b cohorts.

	T1a patients (n=456)	T1b patients (n=159)	p-value
Baseline Characteristics			
Age, median (IQR)	62 (53-70)	65 (53-72)	0.24
Female, n (%)	151 (33)	50 (31)	0.67
Renal Insufficiency, n (%)	52 (11)	19 (12)	0.83
Diabetes, n (%)	52 (11)	26 (16)	0.10
Hypertension, n (%)	252 (55)	92 (58)	0.55
ASA score ≥ 3, n (%)	152(33)	60 (39)	0.76
Oncologic Outcomes			
Histologic Subtype , n (%):			
Clear Cell	225 (50)	103 (65)	
Papillary	108 (24)	17 (11)	<0.01
Chromophobe	49 (11)	20 (13)	
Oncocytoma	48 (11)	16 (10)	
Nodal Stage, n (%):			
N0/NX	4 (80)	4 (80)	0.30
N1-N3	1 (20)	1 (20)	
Positive Surgical Margin, n (%)	2 (3)	5 (6)	0.58
Lymphovascular invasion, n (%)	4 (1)	6 (4)	0.01
Recurrence, n (%)	24 (5)	19 (11)	<0.01

Figure 1. Kaplan-Meier survival curve of overall survival between T1a and T1b disease

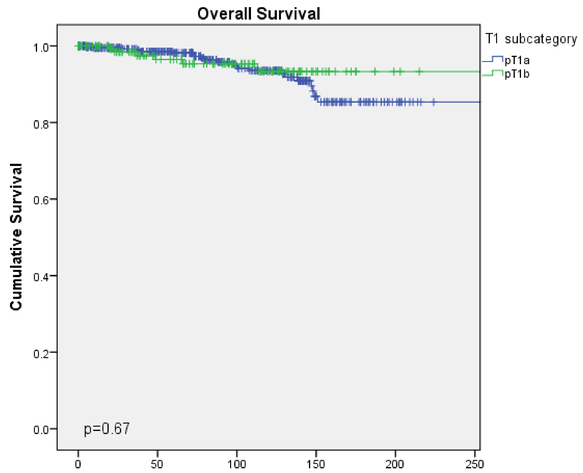


Figure 2. Kaplan-Meier survival curve of cancer-specific survival between T1a and T1b disease

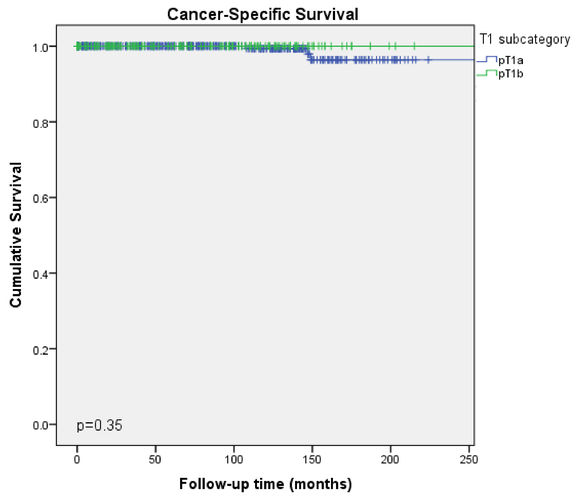
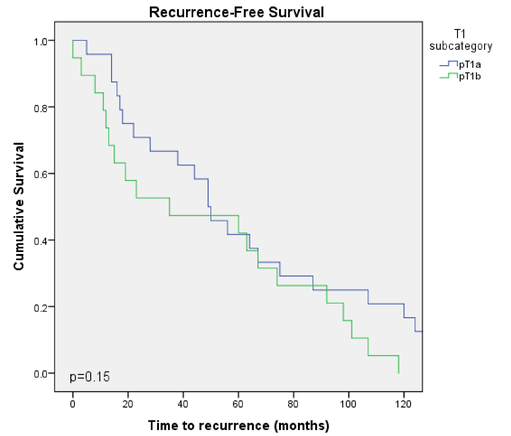


Figure 3. Kaplan-Meier survival curve of recurrence-free survival between T1a and T1b disease.



Conclusions

- There were no differences in oncological outcomes between T1 patients in a contemporary cohort for patients with a long-term follow up.
- Although a greater proportion of T1b patients had recurrences, this was likely more due to there being a higher incidence of clear cell carcinoma in the T1b group, as evidenced by the lack of significance in RFS in both Kaplan-Meier estimates and Cox regression analysis.
- Our results indicate that subcategorizing T1 tumors has no prognostic relevance, and suggests a simplification of the current AJCC staging system for RCC may be warranted.