

PURPOSE

- To identify drivers of renal mass biopsy (RMB) use in the management of clinical T1 kidney tumors.

INTRODUCTION

- For small renal masses (SRM) ≤ 4 cm in size, approximately 30% are benign while only 20% contain aggressive disease and a very low percentage metastasize.
- Renal mass biopsy can yield accurate pathologic information that can help guide clinical decision-making.
- However, past studies suggest low and variable usage in the population at large.
- We seek to understand the drivers of RMB use in the management of clinical T1 kidney tumors.

METHODS

- Comparative non-randomized hybrid trial assessing the decision-making experience and cancer genomics.
- Enrolled patients with new clinical T1 kidney tumors.
- Collected demographic and clinical patient information.
- Patient completed surveys on decision-making preferences (e.g., maximizer-minimizer tendency, autonomy preference, decisional control preference), patient-reported decisional conflict, anxiety/worry, uncertainty, communication, health-related quality of life.
- Bivariable analysis by receipt of RMB using parametric and non-parametric testing.
- Multivariable regression model adjusting for age, gender, Charlson comorbidity index, performance status, other key variables.

RESULTS

- Among 261 patients, 29% underwent RMB.
- Mean age of patients was 60.7 (SD 14.7).
- 61% male, 31% non-white
- Patients who underwent RMB were more likely to have a tumor > 4.0 cm, high nephrometry score, and ECOG ≥ 2 (Table).
- Patient who underwent RMB had higher minimizer-maximizer scores (Fig 1A), higher uncertainty of illness (Fig 1B), and higher decisional conflict (Table).
- On multivariable analysis, RMB remained significantly associated with nephrometry score, bilateral tumors, ECOG ≥ 2 , uncertainty of illness, and greater maximizer tendencies.

In addition to patient health (ECOG status) and tumor burden (bilateral tumors, high complexity), decision-making traits (uncertainty, maximizer-minimizer tendency) predict the use of RMB. This association highlights the need to address patient-specific concerns and decision-making behaviors during the evaluation of SRMs.

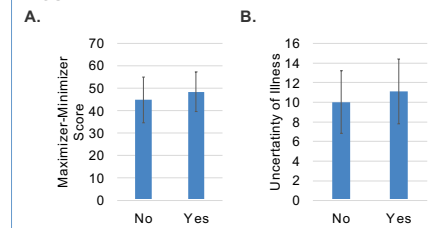
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TABLE

	Total (n = 261)	Renal mass biopsy No (n = 184)	Yes (n = 74)	p-value
Age years, mean (sd)	60.7 (14.7)	60.4 (14.8)	61.4 (14.4)	0.6419
Gender				
Female	99 (39%)	74 (42%)	25 (34%)	0.2560
Male	153 (61%)	104 (58%)	49 (66%)	
Race				
White	171 (69%)	122 (69%)	49 (68%)	0.8929
Non-White	78 (31%)	55 (31%)	23 (32%)	
Ethnicity				
Non-Hispanic	242 (97%)	173 (98%)	69 (95%)	0.1268
Hispanic	8 (3%)	4 (2%)	4 (5%)	
Diameter of SRM				
0-2 cm	66 (26%)	53 (29%)	13 (18%)	0.1399
2-4 cm	127 (49%)	89 (49%)	38 (51%)	
> 4 cm	64 (25%)	41 (22%)	23 (31%)	0.0446
Nephrometry score				
Low (4-6 cm)	103 (42%)	80 (46%)	23 (32%)	0.0989
Moderate (7-9 cm)	117 (48%)	79 (45%)	38 (53%)	
High (10-12 cm)	26 (10%)	15 (9%)	11 (15%)	0.0295
Bilateral tumors				
No	245 (94%)	178 (96%)	67 (91%)	0.0701
Yes	15 (6%)	8 (4%)	7 (9%)	
Type of mass				
Solid	206 (83%)	143 (80%)	63 (89%)	0.0810
Cystic	18 (7%)	17 (10%)	1 (1%)	
Mixed	25 (10%)	18 (10%)	7 (10%)	0.7938
ECOG				
0	179 (85%)	132 (86%)	47 (82%)	0.8117
1	25 (12%)	19 (12%)	6 (11%)	
2 or more	7 (3%)	3 (2%)	4 (7%)	0.0265
Charlson Comorbidity Index, mean (sd)	3.97 (2.3)	3.83 (2.35)	4.34 (2.13)	0.0783
GFR				
≥ 60	197 (78%)	145 (80%)	52 (73%)	0.1129
< 60	57 (22%)	36 (20%)	21 (29%)	
Anticoagulant				
No	234 (90%)	171 (91%)	63 (85%)	0.1055
Yes	27 (10%)	16 (9%)	11 (15%)	
BMI, mean (sd)	32.08 (8.33)	31.84 (8.93)	32.70 (6.62)	0.3864
Maximizer-minimizer score, mean (sd)	45.95 (9.91)	44.82 (10.18)	48.48 (8.83)	0.0094
Decisional Conflict Score, mean (sd)	16.81 (14.08)	15.22 (14.12)	20.36 (13.42)	0.0069
Uncertainty of Illness, mean (sd)	10.37 (3.26)	10.03 (3.19)	11.11 (3.30)	0.0130
Autonomy Preference, mean (sd)	84.09 (7.68)	83.55 (7.66)	83.32 (7.67)	0.1892
Brief Worry, mean (sd)	4.10 (1.67)	4.11 (1.70)	4.07 (1.62)	0.8632
Patient Centered Communication, mean (sd)	4.40 (0.62)	4.40 (0.64)	4.40 (0.58)	0.9332

FIGURE



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