



Observation of T1b renal lesions in MUSIC KIDNEY, a statewide collaborative

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BACKGROUND

- The natural history of small renal masses (<4cm, T1a) has been well defined, leading the most recent AUA and ASCO guidelines to include active surveillance as a treatment option for T1a lesions in well-selected individuals. Because the risk of metastasis increases with tumor size, the use of AS for larger tumors is controversial. The current utilization of non-interventional approaches for localized masses 4-7 cm in size (T1b) is poorly understood; the Michigan Urologic Surgery Improvement Collaborative (MUSIC) allows an opportunity to investigate this further.

METHODS

- The Michigan Urological Surgery Improvement Collaborative: Kidney mass: Identifying and Defining Necessary Evaluation and therapy (MUSIC-KIDNEY) program is a quality improvement initiative for newly presenting patients with renal masses ≤7 cm (cT1RM).
- MUSIC-KIDNEY commenced data collection in September 2017 at 8 diverse MUSIC practices, expanding to 13 practices in January 2019.
- Data abstractors recorded 122 data points at a single time point (120 days after initial consultation) with subsequent extraction at least 3 months later.
- After exclusions, 251 patients were available for analysis (see figure 1).
- Clinical and demographic characteristics of patients were summarized by the receipt of observation (OB) vs. treatment (T) using Chi-squared test for categorical variables and Wilcoxon rank-sum test for continuous measures.
- Multivariable logistic regression model was performed to identify factors associated with undergoing OB (vs. T). All the analyses were performed using SAS 9.4, and statistical significance was set at 0.05.

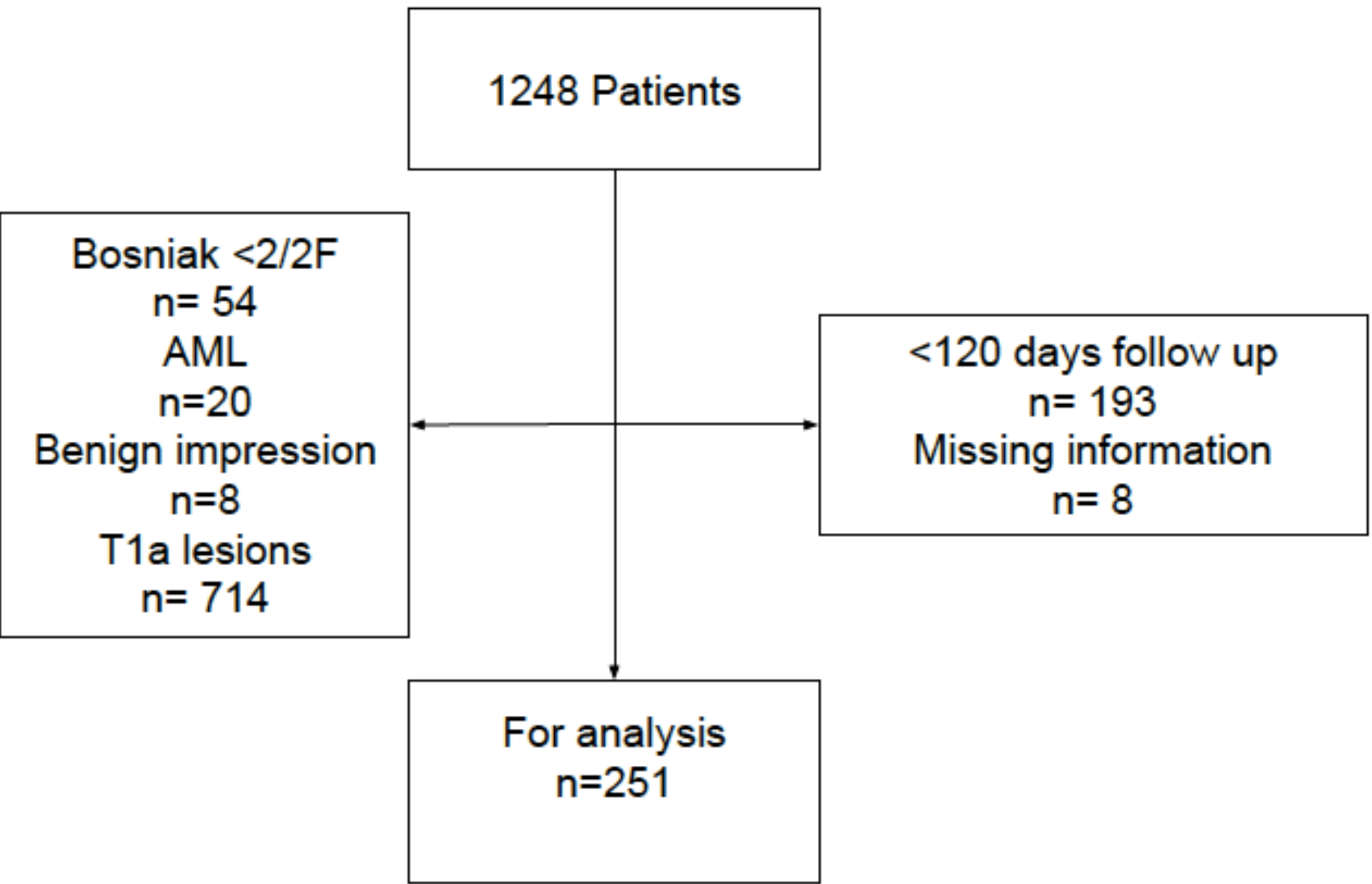


Figure 1: Consort diagram of patients included for analysis

RESULTS

	Initial management (n=251)		
	Observation (n=67)	Treatment (n=184)	Univariate p value
Age, median (IQR), years	75 (61-81)	65 (53-73)	<0.0001
Physician practice, n(%)			0.15
Non-Academic	38 (34.6%)	72 (65.4%)	
Academic	37 (26.2%)	104 (73.8%)	
BMI (kg/m ²), Median (IQR)	29(25.7-34.7)	31(27.5-36.5)	0.05
Charlson comorbidity score n(%)			0.50
0	34 (26.6%)	94 (73.4%)	
1	16 (33.3%)	32 (66.7%)	
>2	25 (29.3%)	50 (70.7%)	
GFR, n (%) (n=230) *			0.23
>60	37 (25.9%)	106 (74.1%)	
<60	29 (33.3%)	58 (66.7%)	
Tumor Size Median (IQR)	5.0 (4.4-5.8)	5.1 (4.5-6.0)	0.14
RENL nephrometry score * (n=124)			0.55
Low	1 (11.1%)	8 (88.9%)	
Intermediate	20 (27.4%)	53 (72.6%)	
High	10 (23.8%)	32 (76.2%)	
Multiple lesions n (%) (n=249)			0.21
Single lesion	69 (31.4%)	151 (68.6%)	
Multiple lesions	5 (17.2%)	24 (82.8%)	
Lesion type: n (%)			<0.0001
Solid	49 (24.1%)	154 (75.9%)	
Complex cyst (Bosniak 3 or 4)	10 (58.8%)	7 (41.2%)	
Indeterminate	16 (51.6%)	15 (48.4%)	
Clinical Impression** n (%)			<0.0001
Indeterminate	15 (75.0%)	5 (25.0%)	
Suspicious	53 (22.9%)	178 (77.1%)	
Renal biopsy performed n (%)			0.44
Yes	13 (25.5%)	38 (74.5%)	
No	62 (31.0%)	138 (69.0%)	

Table 1. Patient, physician and tumor characteristics of observation versus treatment. *indicates number of patients with information available for analysis for this domain; **clinical impression was determined by the physician at the time of first clinic visit

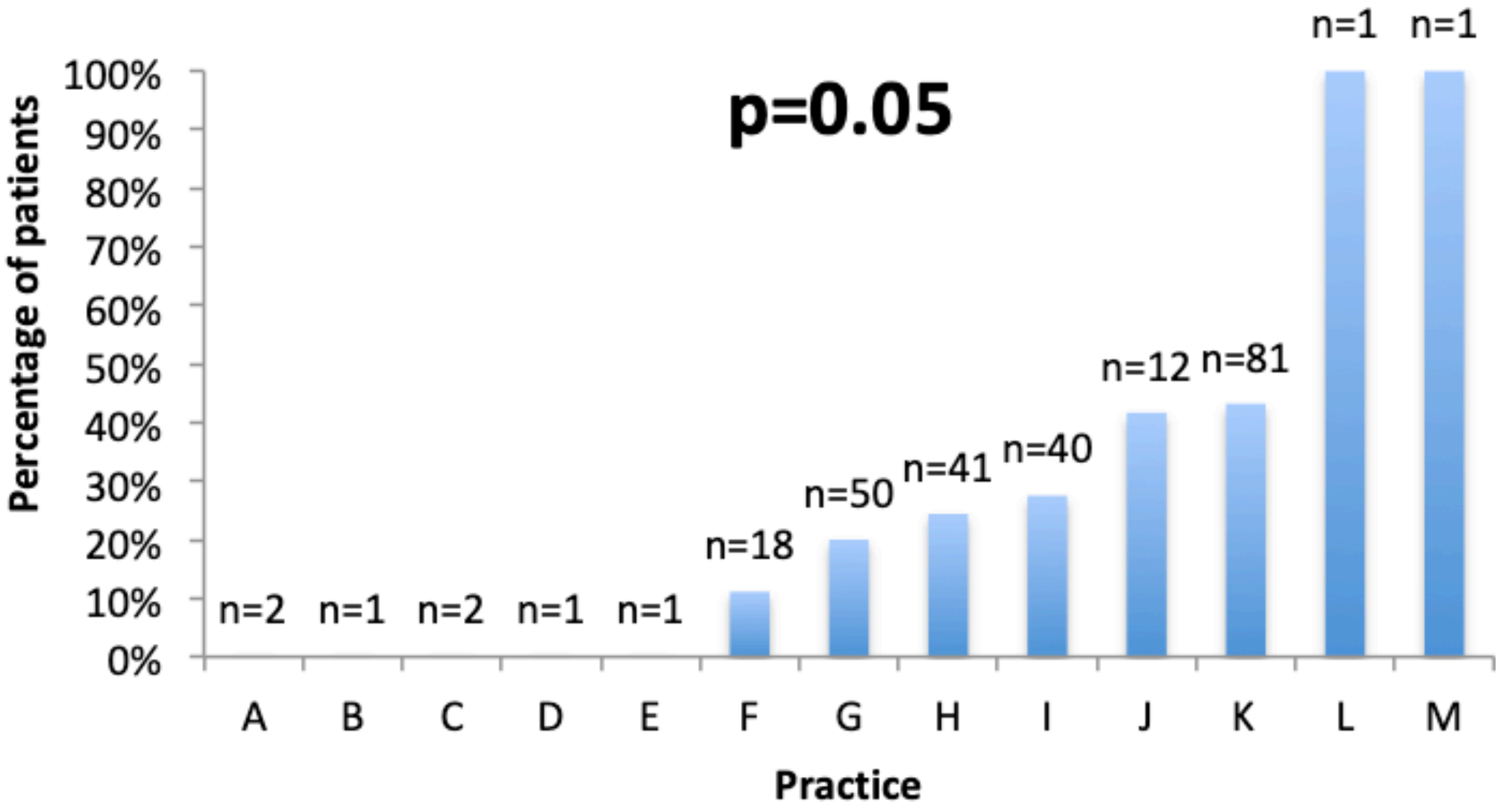


Figure 2. Utilization of observation for clinical T1b renal lesions across 13 practices

- MUSIC-KIDNEY quality improvement collaborative provides an opportunity to assess the factors that influence management of T1b RM across a range of practice types.
- Although active surveillance is thought to be rare for T1b tumors, and is not mentioned in RCC guidelines, an initial decision to observe T1b renal masses occurred in almost 25% of patients across our statewide collaborative.
- Advanced age (>75 yrs) and lesion type (cystic and indeterminate) are factors associated with initial observation
- Management after the initial decision to perform observation (delayed intervention vs. active surveillance, vs. surveillance vs. reassurance) will be a focus of subsequent studies

ACKNOWLEDGEMENTS

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Table 2. Multivariable logistical regression analysis of identify factors associated with undergoing observation versus treatment

	OR	95% CI		p
age	0.95	0.92	0.98	0.001
bmi	1.02	0.98	1.07	0.319
Insurance: Private vs None	4.45	0.77	25.83	0.096
Insurance: Public vs .None	4.64	0.80	27.02	0.088
Tumor type: Complex Cyst vs Solid	0.12	0.04	0.38	0.000
Tumor type: Indeterminate vs Solid	0.86	0.23	3.19	0.817
Impression: .Suspicious vs Indeterminate	7.90	1.68	37.14	0.009

Key Findings

- 24% of patients with T1b lesions (n=67) were initially managed OB (Table)
- Practice utilization of OB ranged from 0-100% (median 20%) at 13 evaluated practices (Figure 2)
- Predictors of observation on multivariable regression were age and bosniak 3/4 cysts over solid lesions, and indeterminate over suspicious lesions (Table 2)
- Factors **not** associated with observation vs. treatment included practice type (academic vs. community-based), practice location (southeast vs. other parts of MI), insurance type, race, gender, charlson co-morbidity index and renal mass biopsy.

CONCLUSIONS