19-3700

Mi TRexit: Pilot Evaluation of a State-Wide Initiative for In-Office Transperineal versus Transrectal Prostate Biopsy Under Local Anesthesia

Adam Cole, Matthew Lee, Jeremy Raisky, Ji Qi, Susan Linsell, Rabia Martin, Chandy Ellimoottil, Adam Walker, Brian Stork, Lindsey Herrel, John Wei, David Miller, Jim Montie, Arvin George, for the Michigan Urological Surgery Improvement Collaborative, Ann Arbor, MI*

INTRODUCTION AND OBJECTIVES: Sepsis following transrectal ultrasound-guided biopsy (TRbx) for prostate cancer is rising, due to growing antibiotic usage and resistance. Transperineal prostate biopsy (TPbx) avoids the rectal flora completely and is feasible under local anesthesia. The adequacy of a modified 12-core transperineal template mapping biopsy for prostate cancer detection and comprehensive post-biopsy outcomes are unknown.

METHODS: A review of the Michigan Urologic Surgery Improvement Collaborative (MUSIC) prospective registry of all patients undergoing TPbx or TRbx at a single pilot MUSIC site was performed. TPbx was performed under local anesthesia using the PrecisionPoint™ device to complete a modified Barzell 12-core biopsy. Patient characteristics, cancer detection rate (CDR), and 30-day complications were prospectively collected and analyzed. Multivariable analysis was performed to control for risk factors. Only men with no prior biopsy were included in CDR analysis. High grade cancer was considered to be GS >=7.

RESULTS: A total of 183 TPbx and 1850 TRbx were performed, of which 138 and 1225 TPbx and TRbx were performed in the biopsy naive context. The overall CDR was 40.6% (56/138) for TPbx compared to 57.1% (700/1225) for TRbx (p<.001). CDR for high grade cancer (hgCDR) was 23.9% (33/138) for TPbx and 35.0% (429/1225) for TRbx (p=0.009). Controlling for patient characteristics, TPbx was associated with significantly lower odds of CDR (OR=0.54, p=0.001). No statistically significant difference was found between the two biopsy groups on hgCDR after adjusting for patient characteristics. Other factors related to both CDR and hgCDR include positive DRE, PSA, and age. Family history was also a significant risk factor for CDR. There were no infectious hospitalizations, sepsis episodes, UTI, fever, or episodes of retention after TPbx (Table 1b). Infectious complications did occur after TRbx, but were rare.

CONCLUSIONS: TPbx was associated with a decreased overall CDR however the hgCDR was not different compared to TRbx. Early outcomes of TPbx demonstrated zero infectious complications within 30 days. Further validation of the modified Barzell template is required to determine its adequacy in sampling.

Source of Funding: Blue Cross Blue Shield of Michigan

Table 1a. Factors associated with any and high grade cancer detection rate

Variable	Any CDR			High grade CDR		
	OR	95% CI	*p*	OR	95% CI	*p*
TPbx vs. TRbx	0.54	(0.37, 0.78)	0.001	0.69	(0.45, 1.07)	0.098
AA vs. White	1.15	(0.78, 1.70)	0.482	1.38	(0.93, 2.06)	0.112
Other race vs. White	0.45	(0.26, 0.78)	0.005	0.60	(0.31, 1.16)	0.132
Family History	1.43	(1.10, 1.86)	0.008	1.11	(0.84, 1.46)	0.479
Abnormal DRE	2.52	(1.62, 3.91)	<.001	4.04	(2.67, 6.11)	<.001
Age	1.03	(1.01, 1.05)	<.001	1.03	(1.01, 1.04)	0.003
PSA	1.84	(1.49, 2.29)	<.001	2.42	(1.91, 3.05)	<.001

Table 1b. Rate of post-biopsy complications: TRUS vs. Transperineal Biopsy

	TRbx	TPbx	*p*
No. bx	1850	183	
Infectious hospitalization	17 (0.92%)	0 (0%)	0.39
Sepsis	6 (0.32%)	0 (0%)	1.00
UTI	13 (0.7%)	0 (0%)	0.62
Fever	26 (1.4%)	0 (0%)	0.16
Urinary Retention	17 (0.92%)	0 (0%)	0.39