

(PD17-06) THE IMPACT OF ADDING A 3D MAPPING BIOPSY PRIOR TO PRIMARY CRYOTHERAPY FOR THE TREATMENT OF PROSTATE CANCER

Al Barqawi MD, Rodrigo Rodrigues Pessoa MD, Tracey
McDermott BA BS CCRC, Mohammed Al-Musawi MB FRCS, Colin
O Donnell MS PhD



School of Medicine

UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

No disclosures

Background

1. Three-dimension mapping biopsy has been shown to diagnose significant (\geq GG3) prostate cancer among men initially believed to have low-risk disease⁽¹⁻²⁾

Upgrade 27.2%; Upstage: 45.6%

Low incidence of infectious complications – perineal approach

2. No consensus on ideal pre-operative workup for men who elect to undergo different available modalities of cryotherapy, especially when it comes to focal therapy⁽³⁾
3. Paucity of data on cryotherapy following 3D mapping biopsy in the literature⁽⁴⁻⁵⁾

Purpose

Study the implications of adding mapping biopsy prior to cryotherapy for the treatment of prostate cancer on the following outcomes:

Recurrence / Persistence of disease

Biochemical failure

Functional outcomes

Complications

Methods

TRUS before cryo

VS

TRUS + mapping biopsy before cryo

N=331

N=203

- March 2007 and June 2016
- QoL measures: IPSS and SHIM scores
- Incidence of the following complications: urinary retention; UTI/prostatitis; orchiepididymitis; urethral stricture
- Biochemical failure - Phoenix criteria
- Recurrence/ Persistence of disease on post-treatment biopsy



Results – patients characteristics

	ALL (N=534)	TRUS (N=331)	3DMB (N=203)	TRUS vs 3DMB (p-value)
Age (y)	65.7 (7.4)	67.5 (7.1)	62.7 (6.8)	<0.05
Prostate Volume (cc)	37.2 (14.9)	35.3 (14.2)	39.5 (15.5)	< 0.05
Gleason score	6 (6, 7)	7 (6, 7)	6 (6, 7)	< 0.05
Stage				
T1c	258	127	131	
T2a	241	181	60	0.04
T2b	15	8	7	
T2c	20	15	5	
Race				< 0.05
White	260 (76.92)	159 (70.67)	101 (89.38)	
Black	49 (14.50)	40 (17.78)	9 (7.96)	
Asian	6 (1.78)	5 (2.22)	1 (0.88)	
Native American	2 (0.59)	2 (0.89)	0 (0.00)	



Results – patients characteristics

	ALL (N=534)	TRUS (N=331)	3DMB (N=203)	TRUS vs 3DMB (p-value)
Median follow-up (y)	6.1 (3.8, 8.8)	5.0 (3.2, 7.5)	8.2 (5.3, 10.8)	0.01
Treatment type				0.01
TFT	100 (19.7)	0 (0)	100 (49.26)	
Subtotal	414 (77.07)	316 (94.83)	98 (48.28)	
Whole-gland	22 (3.76)	15 (4.56)	5 (2.46)	
Complications				
Urinary retention	12 (2.25)	11 (5.19)	1 (1.01)	0.03
UTI/ prostatitis	29 (5.43)	21 (9.91)	8 (8.25)	0.32
orchiepididymitis	27 (5.06)	21 (9.21)	6 (6.19)	0.10
Urethral stricture	39 (7.30)	24 (11.32)	15 (15.6)	1.00
Overall number of complications				0.02
0	324 (60.67)	189 (57.10)	135 (66.50)	
1	133 (24.91)	87 (26.28)	46 (22.66)	
2	62 (11.61)	44 (13.29)	18 (8.87)	
3	8 (1.50)	7 (2.11)	1 (0.49)	
4	7 (1.31)	4 (1.21)	3 (1.48)	



Results – functional outcomes

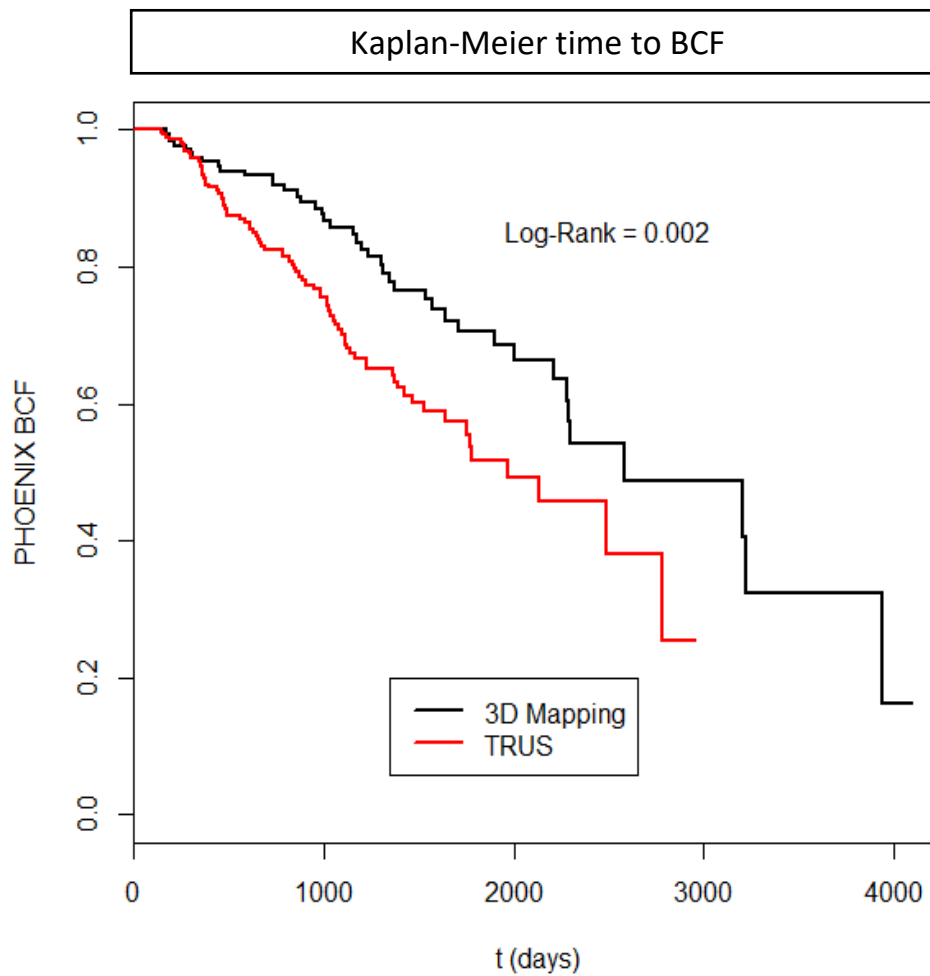
	ALL (N=534)	TRUS (N=331)	3DMB (N=203)	TRUS vs 3DMB (p-value)
Pre-procedure SHIM	16.0 (8.0, 22.0)	14.0 (7.0,20.0)	20.0 (13.0,23.0)	< 0.05
Post-procedure SHIM	12.0 (5.0, 20.0)	10.0 (5.0,17.0)	18.0 (9.0,22.0)	< 0.05
SHIM Drop	-2.0 (-9.0, 2.0)	-2.0 (-9.0, 2.0)	-1.0 (-6.0, 3.0)	0.21
Pre-procedure IPSS	7.0 (4.0, 13.0)	8.0 (4.0,14.0)	7.0 (4.0,12.0)	0.19
Post-procedure IPSS	4.0 (2.0, 6.0)	4.0 (3.0, 7.0)	3.0 (2.0, 6.0)	0.06
IPSS Drop	-2.0 (-7.0, 0.0)	-3.0 (-8.0, 1.0)	-2.0 (-6.0, 0.0)	0.60

Results

Oncologic outcomes

	ALL (N=534)	TRUS (N=331)	3DMB (N=203)	TRUS vs 3DMB (p- value)
Pre-procedure PSA	5.6 (3.8, 8.3)	5.8 (4.3, 8.6)	5.4 (3.4, 7.8)	0.02
Post-procedure PSA	1.2 (0.4, 2.8)	1.1 (0.3, 2.5)	1.4 (0.6, 2.8)	0.04
PSA Drop	-3.9 (-6.2, -2.0)	-4.1 (-6.5, -2.4)	-3.2 (-5.4, -1.6)	< 0.05
BCF	123 (23.0)	81 (24.5)	42 (20.7)	< 0.05
Rec/Pers	128 (27.8)	91 (34.3)	37 (18.9)	0.01

*Log-rank



Conclusions / Limitations

- Higher incidence of BCF and recurrent/persistent disease in the TRUS group – most likely due to better risk stratification in the 3DMB group
- Addition of 3DMB did not seem to adversely impact functional outcomes
- Higher incidence of complications on TRUS group most likely related to type of cryotherapy than to whether 3DMB was performed
- No data on Clavien scores
- Retrospective analysis, no data on cancer-specific survival or overall survival



References

- 1. Barqawi AB, Rove KO, Gholizadeh S, O'Donnell CI, Koul H, Crawford ED. The role of 3-dimensional mapping biopsy in decision making for treatment of apparent early stage prostate cancer. *The Journal of urology*. 2011;186(1):80-5.
- 2. Krughoff K, Eid K, Phillips J, Stoimenova D, Smith D, O'Donnell C, et al. The accuracy of prostate cancer localization diagnosed on transrectal ultrasound-guided biopsy compared to 3-dimensional transperineal approach. *Adv Urol*. 2013;2013:249080.
- 3. Babaian RJ, Donnelly B, Bahn D, Baust JG, Dineen M, Ellis D, et al. Best practice statement on cryosurgery for the treatment of localized prostate cancer. *The Journal of urology*. 2008;180(5):1993-2004.
- 4. Donnelly BJ, Saliken JC, Ernst DS, Ali-Ridha N, Brasher PM, Robinson JW, et al. Prospective trial of cryosurgical ablation of the prostate: five-year results. *Urology*. 2002;60(4):645-9.
- 5. Jones JS, Rewcastle JC, Donnelly BJ, Lugnani FM, Pisters LL, Katz AE. Whole gland primary prostate cryoablation: initial results from the cryo on-line data registry. *The Journal of urology*. 2008;180(2):554-8.

Thank you