



Radical prostatectomy for patients with high-risk, very-high risk, or metastatic prostate cancer: perioperative and early oncologic results from the MUSIC statewide collaborative

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Podium Session PD63-01

Making Michigan #1 in Urologic Care

Brian Lane, Silvia Mora, Ji Qi, Todd Morgan, Christopher Brede, James Peabody, Arvin George

Presented and narrated by Brian Lane MD, PhD

- Patients with high-risk (HR) prostate cancer (PCa) are at greatest risk for extraprostatic disease, including lymph node metastases (N1) and distant metastases (M1). There has been increased recognition of the benefits of adding local treatment for advanced PCa. However, the oncologic value of local treatment in HR and metastatic PCa remains controversial.
- In this study, we retrospectively investigated the perioperative and oncologic outcomes of patients with HR, very high risk (VHR), or metastatic PCa undergoing radical prostatectomy (RP) alone or in combination with other treatments. Using data from the MUSIC registry, we hypothesize that these patients can undergo treatment safely but with increased oncologic risk.

- **Study population:**
 - MUSIC registry was queried for all radical prostatectomy (RP) from 1/1/2012 to 12/31/2018
 - Of the 9208 patients, 2086 patients were classified as having HR PCa or higher
- **PCa risk group classification:**
 - HR PCa: PSA \geq 20 or cT3-4 or biopsy grade group (bGG) 4-5
 - VHR PCa : \geq 2 HR features, $>$ 4 cores of bGG 4-5, or primary pattern 5
 - Metastatic PCa: clinical N1 and/or M1 disease
- **Outcomes:**
 - **Primary:** biochemical recurrence (BCR) after RP (PSA \geq 0.2 more than 30 days after surgery)
 - **Secondary:** presence/absence of extraprostatic extension (EPE), seminal vesical invasion (SVI), positive lymph nodes (N1) and positive surgical margins (PSM), and perioperative events
- **Statistical analysis:**
 - Kaplan-Meier curves to illustrate time to BCR following treatment (significance set at $p < 0.05$)
 - Multivariable analyses to compare the difference in outcomes between the 3 risk groups (significance set at $p < 0.05$)

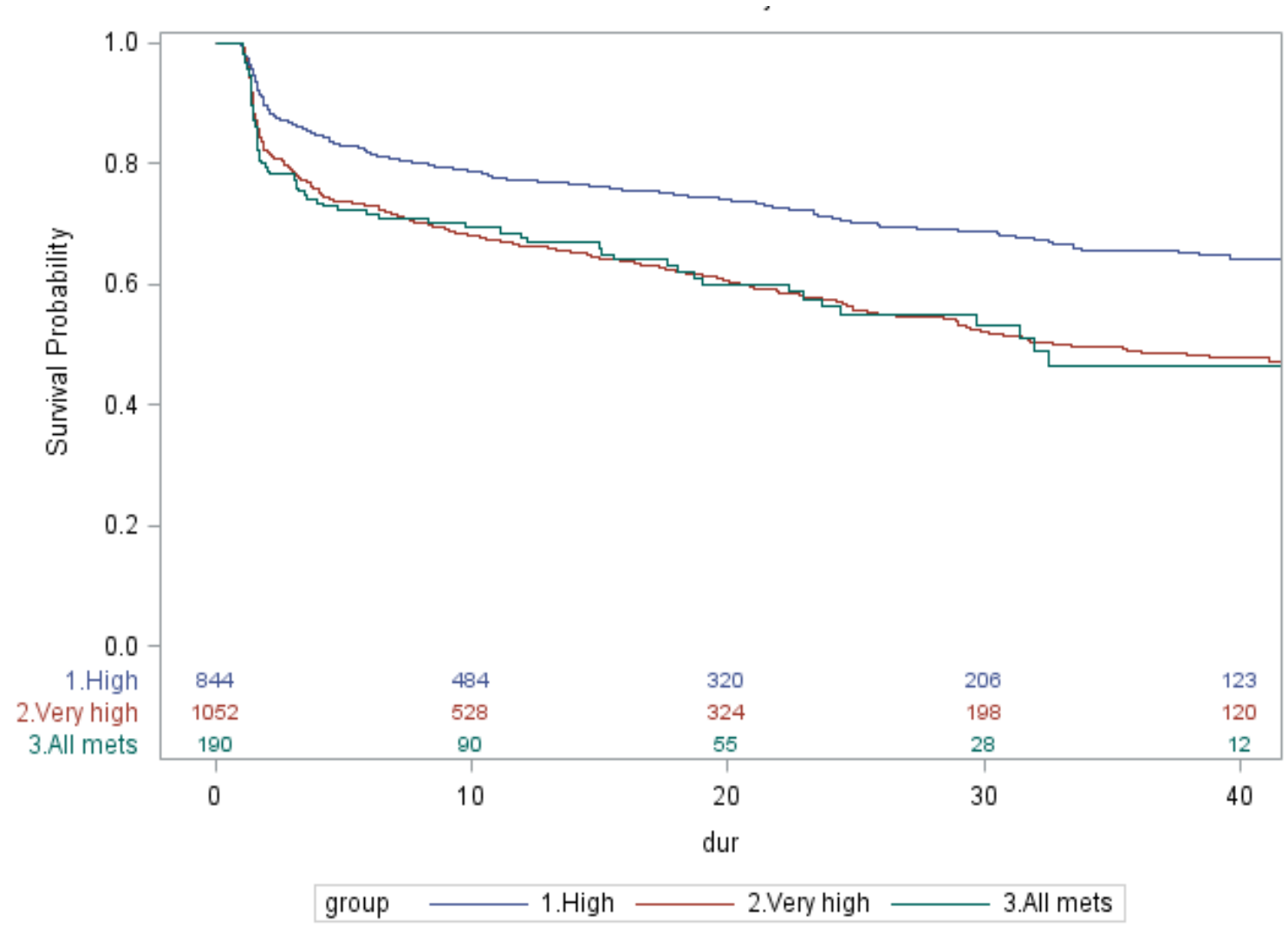


Results: Perioperative outcomes

	HR only	VHR only	N1 or M1 patients	P-value
Number of RP	844	1052	190	
PLND performed	761 (91.5%)	998 (95.7%)	174 (94.6%)	0.8
Estimated blood loss	100 (75-200)	100 (75-200)	150 (100-300)	0.039
Length of stay > 2 days	105 (12.4%)	116 (11.0%)	18 (9.5%)	0.4

Results

Kaplan-Meier curve on time to BCR post RP for HR, VHR, N1 or M1



Overall 3-year BCR-free probability ($p < 0.001$):

- 66% for HR
- 49% for VHR
- 47% for N1 +/- M1

Multivariable analysis of factors assoc'd w/ BCR

Multivariable Cox PH analysis

Variable	HR	95% CI	p
Age	1.00	(0.98, 1.01)	0.419
Race (ref: white)			
Black	1.64	(1.33, 2.02)	<.0001
Other	0.75	(0.45, 1.26)	0.275
Unknown	0.90	(0.67, 1.22)	0.497
BMI	0.99	(0.98, 1.01)	0.223
Comorbidity (ref: CCI=0)			
CCI = 1	1.23	(1.01, 1.49)	0.036
CCI ≥ 2	1.17	(0.92, 1.50)	0.203
Preoperative PSA (ref: PSA ≤ 10)			
10 to 20	2.07	(1.71, 2.51)	<.0001
20.1 to 50	2.35	(1.87, 2.96)	<.0001
>50	3.35	(2.32, 4.83)	<.0001
Biopsy Grade Group (ref: GG1)			
GG2	0.92	(0.43, 1.97)	0.835
GG3	2.63	(1.30, 5.32)	0.007
GG4	2.34	(1.17, 4.68)	0.016
GG5	3.38	(1.68, 6.80)	0.001
Clinical T stage (ref: T1)			
T2	1.21	(1.03, 1.42)	0.021
T3/T4	1.30	(0.95, 1.78)	0.100
Risk group (ref: high risk)			
Very high risk	1.45	(1.19, 1.77)	0.000
Metastatic	1.63	(1.22, 2.18)	0.001

- Predictors of BCR (p<0.05):
 - Preoperative PSA ≥ 10
 >50 > 20.1-50 > 10-20
 - PCa risk group classification:
 N1+/-M1 > VHR > HR
 - Biopsy Grade Group 3-5
 GG 5 > GG 4-3 > GG 2-1
 - Clinical T stage (T2)
 - African-American race
 - Comorbidity (Elevated CCI)

- Patients with HR, VHR, and N1+/-M1 Prostate cancer can undergo RP safely, but with increased risk oncological risk
- Despite HR or higher PCa patients having worse survival probability overall, the majority of the patients in this cohort were disease-free 3 years after surgery
- Patients with N1+/-M1 PCa that undergo RP appear to have similar biochemical recurrence (BCR)-free survival probabilities to VHR patients
- Risk of BCR is greater in patients with N1+/-M1 disease, followed by VHR, and lastly HR PCa