

Impact of Radical Prostatectomy and Radiotherapy on Survival Outcomes in Men With Ductal Prostate Cancer

Nicole Flegel¹, Shu Wang MD², M.Minhaj Siddiqui MD³



¹University of Maryland, College Park, Maryland; Email: nflegel@terpmail.umd.edu
²University of Maryland School of Medicine, Baltimore, Maryland; Email: sh.wang@som.umaryland.edu
³University of Maryland School of Medicine, Baltimore, Maryland; Email: msiddiqui@som.umaryland.edu
@FlegelNicole @ShuWangMD @MMSiddiquiMD

Introduction and objective

- Ductal adenocarcinoma of the prostate is a rare histological subtype of prostate cancer (PCa), making up 0.4-0.8% of all cases.
- It is associated with delayed diagnosis and an aggressive behavior similar to that of Gleason score 8-10 acinar adenocarcinoma.
- The efficacy of radical prostatectomy (RP) or radiotherapy for men with this rare subtype remains controversial.
- This study aims to evaluate the impact of RP vs. external beam radiation therapy +/- brachytherapy (EBRT+/-BT) on the survival outcomes for men with ductal PCa.

Methods

- The SEER database was used to gather information on men diagnosed with ductal PCa from 2004-2016.
- Patients diagnosed with localized disease (TxNOM0), and a Gleason Score of 8-10 were included.
- Patients were divided into two groups based on their treatment as RP and EBRT+/-BT.
- Logistic regression was used to identify factors predicting RP treatment. Kaplan-Meier curves and Cox regression were used for survival analysis.

Results

- 159 patients were included in this study, 120 of which received RP and 39 received EBRT+/-BT (Table 1).
- Patients are younger in the surgical group (64.1 vs 71.1 years, p<0.001) and have a lower PSA value (ng/ml) (p=0.037), with other parameters comparable.
- Age>75 years (OR=0.085, 95%CI 0.029-0.244, p<0.001) and PSA>20ng/ml (OR=0.146, 95%CI 0.035-0.603, p=0.008) were less likely to receive RP.
- Mean follow-up time 58 months.
- 5-year-OS: RP 94.2% vs EBRT+/-BT 92.3% (p=0.708)
- 5-year-DSS: RP 96.7% vs EBRT+/-BT 92.3% (p=0.364)
- Survival analysis with KM-curves showed patients achieved similar OS and DSS with RP and EBRT+/-BT (all p>0.05) (Figure 1).
- On Cox regression, Gleason Score of 9 (HR=4.117, 95%CI 1.566-10.823, p=0.004), 10 (HR=20.283, 95%CI 1.989-206.89,p=0.011), PSA level between 10-20ng/ml (HR=4.219, 95%CI 1.228-14.497, p=0.022) were independent risk factors for worse survival, while RP (HR=1.049, 95%CI 0.332-3.316, p=0.936) was not independently associated with improved survival, after controlling for age, year of diagnosis, race, and marital status.

Attribute	All	Surgery N (%)	EBRT+/-BT N (%)	P
Total	159	120 (75.5)	39 (24.5)	
Age at diagnosis (year)				
<75	135	112 (93.3)	23 (59.0)	<0.001
75+	24	8 (6.7)	16 (41.0)	
Year of Diagnosis				
2004 – 2010	64	44 (36.7)	20 (51.3)	0.133
2011 – 2016	95	76 (63.3)	19 (48.7)	
Race				
White	125	96 (80.0)	29 (74.3)	0.292
Black	18	12 (10.0)	6 (15.4)	
Other	15	12 (10.0)	3 (7.7)	
Unknown	1	0	1 (2.6)	
Marital Status at diagnosis				
Married	119	91 (75.8)	28 (71.8)	0.811
Single	28	21 (17.5)	7 (17.9)	
Unknown	12	8 (6.7)	4 (10.3)	
Gleason Score				
8	113	83 (69.2)	30 (76.9)	0.564
9	45	36 (30.0)	9 (23.1)	
10	1	1 (0.8)	0	
T stage				
T1	15	2 (1.7)	13 (33.3)	<0.001
T2	60	43 (35.8)	17 (43.6)	
T3	76	68 (56.7)	8 (20.5)	
T4	8	7 (5.8)	1 (2.6)	
PSA Level (ng/ml)				
< 10	118	94 (78.3)	24 (61.5)	0.037
10-<20	18	14 (11.7)	4 (10.3)	
20+	13	6 (5.0)	7 (17.9)	
Unknown	10	6 (5.0)	4 (10.3)	

Table 1. Characteristics of patients with localized ductal PCa.

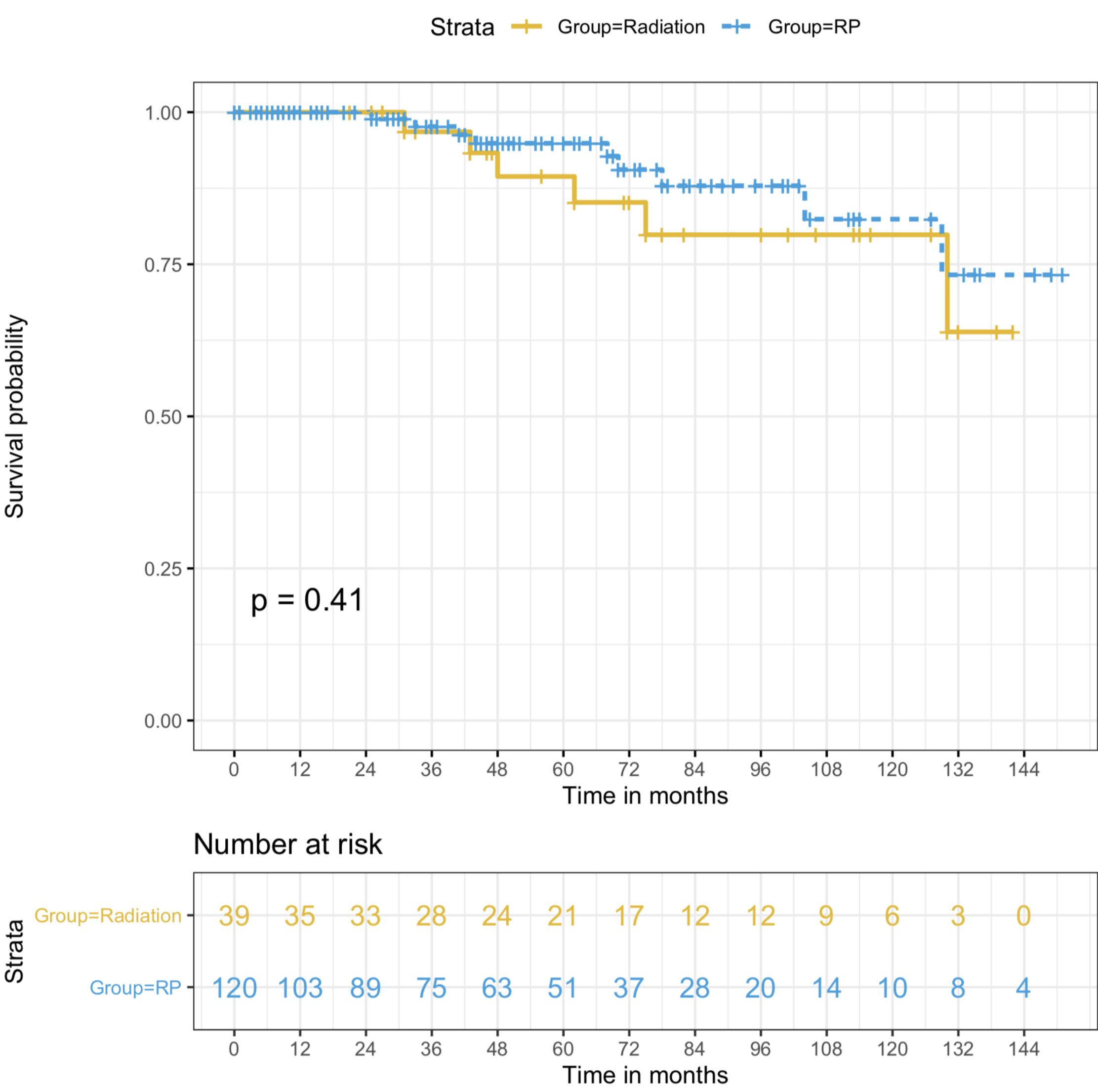


Figure 1. KM Curves for DSS in men with RP and radiotherapy.

Conclusion

- Patients with localized ductal PCa could achieve similar survival benefits with either RP or EBRT+/-BT.
- Limitation of this study is the small number of patients included, possibly resulting in a low statistical power.
- Further prospective studies are needed to validate these findings.