TESTOSTERONE REPLACEMENT THERAPY PREVENTS DISEASE PROGRESSION IN MEN UNDERGOING RADICAL PROSTATECTOMY

Maxwell Towe BS, Linda M. Huynh MSc, Farouk M. El-Khatib MD, Faysal A. Yafi MD, Thomas Ahlering MD
UC Irvine Health – University of California, Irvine, Orange, CA USA

Introduction

The use of testosterone replacement therapy (TRT) is currently not recommended in patients with a history of prostate cancer. However, recent data has shown that higher levels of free testosterone (FT) are associated with lower grade cancers, and may be protective against early biochemical recurrence (BCR).

We present a study examining the use of TRT in patients with prostate cancer undergoing radical prostatectomy (RP) and its effect on disease progression.

Methods

The study group consisted of 824 patients followed between December 2009 and June 2018 who underwent RP for primary treatment of prostate cancer. Post-operative PSA levels were prospectively collected after RP and were used to assess for BCR (defined as 2 consecutive PSA values of 0.2 ng/dL or greater).

Median follow up time after RARP was 2.75 years. Patients in the TRT group remained on TRT up until date of last follow up or until date of BCR.

Results

Out of 850 patients, 824 had values recorded for all pre-specified variables and 152 (18.4%) were treated with TRT.

Of the patients on TRT, 14 (9.2%) developed BCR compared with 154 (22.6%) patients not on TRT ($p < 0.001$). Overall, 85 patients experience disease recurrence within a year after surgery, and 4 (4.7%) of those patients were on TRT compared to 81 (95.3%) not on TRT ($p < 0.0001$).

In multivariate analysis, being placed on TRT predicted a longer time to BCR, after adjusting for age, pathological grade, and stage ($p = 0.005$) and delayed progression by 1.5 years.

Figure 1. Time to event analysis. Patients placed on TRT had a longer latency before recurrence, by a median of 1.5 years.

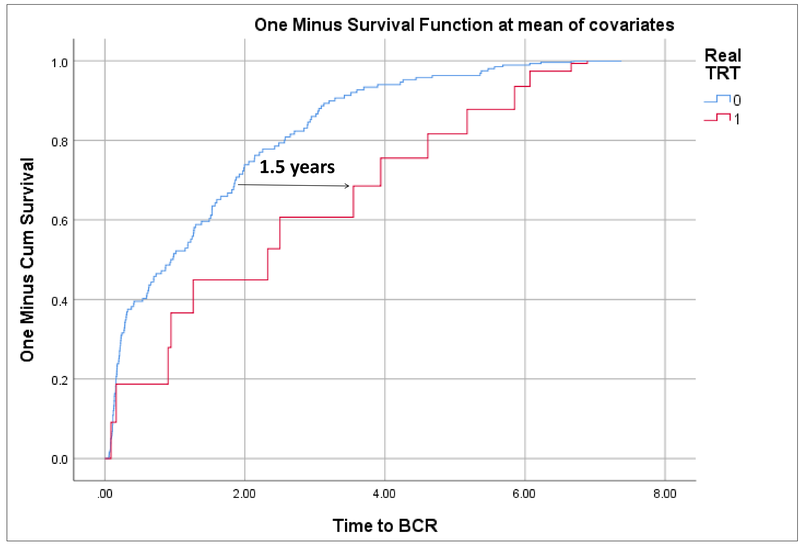

Table 1: Clinco-demographic profile of TRT and untreated patients

Table 1. Baseline Demographics of study cohort, stratified by TRT

	Control		TRT		
	672		152		P-value
	Mean	SD	Mean	SD	
Adjusted PSA (ng/mL)	8.0	6.7	7.2	5.9	0.179
Age (years)	63.1	7.4	61.4	7.9	0.014
Prostate Volume (mL)	54.2	20.5	56.8	20.3	0.159
Preop Total Testosterone (ng/dL)	369.5	162.3	301.6	185.6	<0.0001
Preop SHBG (nmol/L)	47.6	22.3	39.1	18.2	<0.0001
Preop Free Testosterone (ng/dL)	6.1	3.1	5.5	4.1	0.047
	N	%	N	%	
Pathologic Grade					<0.0001
1	122	18.2	43	28.3	
2	262	39	77	50.7	
3	158	23.5	23	15.1	
4	44	6.5	2	1.3	
5	86	12.8	7	4.6	
Pathologic Stage					<0.0001
pT2	426	62.6	131	86.2	
pT3	254	37.4	21	13.8	
Recurrence Status					<0.0001
0	526	77.4	138	90.8	
1	154	22.6	14	9.2	

Conclusion

The use of TRT in patients with prostate cancer was shown to be beneficial by delaying time to BCR. In all patients that experienced BCR, those that were on TRT had a 1.5 year longer latency of disease progression. These results provide further evidence that the current contraindication of testosterone replacement in patients with a history of prostate cancer may need revising.

UC Irvine Health
Department of Urology