

Testosterone Replacement Therapy in Patients with High Risk Prostate Cancer After Radical Prostatectomy

Introduction and Objective: Testosterone (T) replacement therapy (TRT) in the setting of prostate cancer (CaP), particularly high risk CaP, is controversial, with concern that exogenous T can stimulate CaP recurrence or progression. However, data supporting efficacy of TRT without increased risk of progression of CaP continue to accrue. Here we present our data on the safety and efficacy of TRT in a cohort of hypogonadal men who have undergone radical prostatectomy for CaP, including men with high-risk CaP.

Materials and Methods: A retrospective review of 92 men with hypogonadism treated with TRT after radical prostatectomy for CaP between 2007-2011 was performed. Within this cohort, 64 men with low/intermediate-risk CaP (non-high risk) and 28 with high risk CaP (at least one of the following: 1) Gleason score ≥ 8 , 2) positive surgical margins, or 3) positive lymph nodes) were included. Serum total T (TT), free T (FT), prostate specific antigen (PSA), hemoglobin (Hgb), and hematocrit (Hct) were assessed at TRT initiation and every 3-6 months thereafter out to >36 months. Biopsy and final pathologic Gleason (GI) scores and surgical margins were also evaluated.

Results: Initial TT 288.6 ± 121.1 ng/dL, PSA 0.004 ± 0.003 ng/ml, Hgb 14.7 ± 1.5 g/dL, and Hct $44.0 \pm 4.1\%$. Initial GI sums for high and non-high were 6.81 ± 1.11 and 6.42 ± 0.64 ($p=0.152$, respectively). Median follow-up was 22.5 months (range 1-49.5 months) at which time significant increases in mean TT and FT were observed in both high and non-high risk groups. Mean increases in Hgb of 1.46 g/dL (high risk, $p=0.17$) and 0.79 g/dL (non-high risk, $p=0.03$) were observed. No PSA recurrences were observed despite significant rise in PS in the high-risk group at median follow-up (0.004 ± 0.003 to 0.014 ± 0.019 ng/mL, $p=0.017$) compared to the non-high risk group. Final pathologic diagnosis resulted in upgrading of 29% of patients, and downgrading of 11% of patients.

Conclusions: TRT is a viable treatment alternative in hypogonadal men with a history of CaP who have undergone prostatectomy, even those with CaP bearing high risk characteristics, with recurrence rates in our series below those published in other series of comparably matched men not treated with TRT.