



HIGHER CALCULATED FREE TESTOSTERONE AND TESTOSTERONE REPLACEMENT THERAPY IMPROVE POTENCY RECOVERY FOLLOWING ROBOT-ASSISTED RADICAL PROSTATECTOMY

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1. Introduction and Objectives

Undergoing robot assisted radical prostatectomy (RARP) provides excellent outcomes in regards to oncologic control of localized prostate cancer (PCa). However, regardless of the technique used, post-prostatectomy sexual dysfunction remains a significant side effect for many men. The present study seeks to assess whether lower preoperative calculated free testosterone (cFT) and/or testosterone replacement therapy may impact time to potency recovery following RARP.

2. Materials and Methods

Between December 2009 and April 2018, 840 men underwent RARP by a single surgeon. Patients were included in the present study if they had (1) preoperative International Index of Erectile Function (IIEF-5) score between 22 and 25, (2) prospectively collected preoperative total testosterone, sex hormone binding globulin, and cFT values, and (3) responded to both questions of a self-administered, validated questionnaire assessing their potency at 3 months and at any follow-up after 9 months postoperatively.

As a subgroup in this study, men with cFT < 5.1 ng/dL were started on TRT. These men were compared to those never receiving TRT, with similar cFT values. Potency was defined as two affirmative answers to “are your erections adequate for penetration?” and “are they satisfactory?”.

3. Results – Impact of Endogenous cFT on Potency Recovery

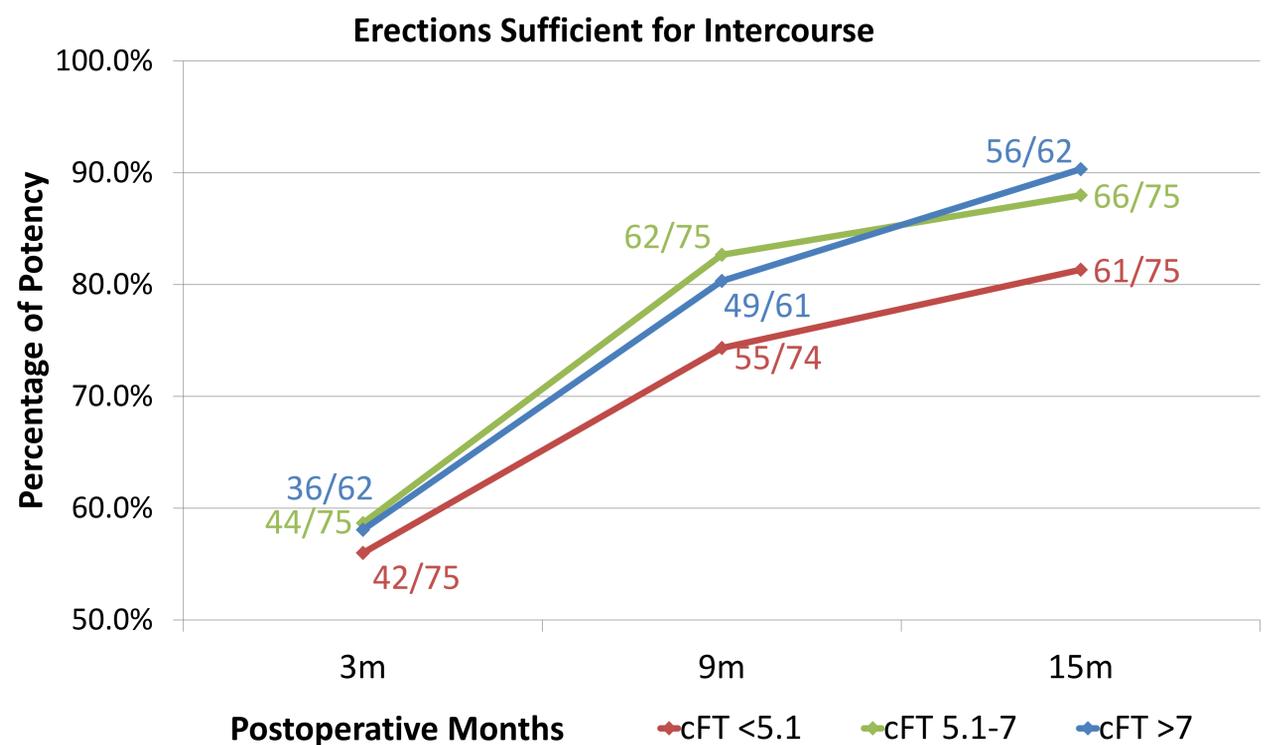
Of 840 men undergoing RARP, 212 met the above-mentioned inclusion criteria.

Of the 212 patients:

- 75 (35.4%) had preoperative cFT less than 5.1 ng/dL (**low**),
- 75 (35.4%) had preoperative cFT between 5.1 and 7 ng/dL (**middle**), and
- 62 (29.2%) had preoperative cFT greater than 7 ng/dL (**high**).

At 3, 9, and 15 months post-RARP, potency recovery was respectively:

- **56%, 74%, and 81% in the low group,**
- **59%, 83% and 88% in the middle group,** and
- **58%, 80% and 90% in the high group.**



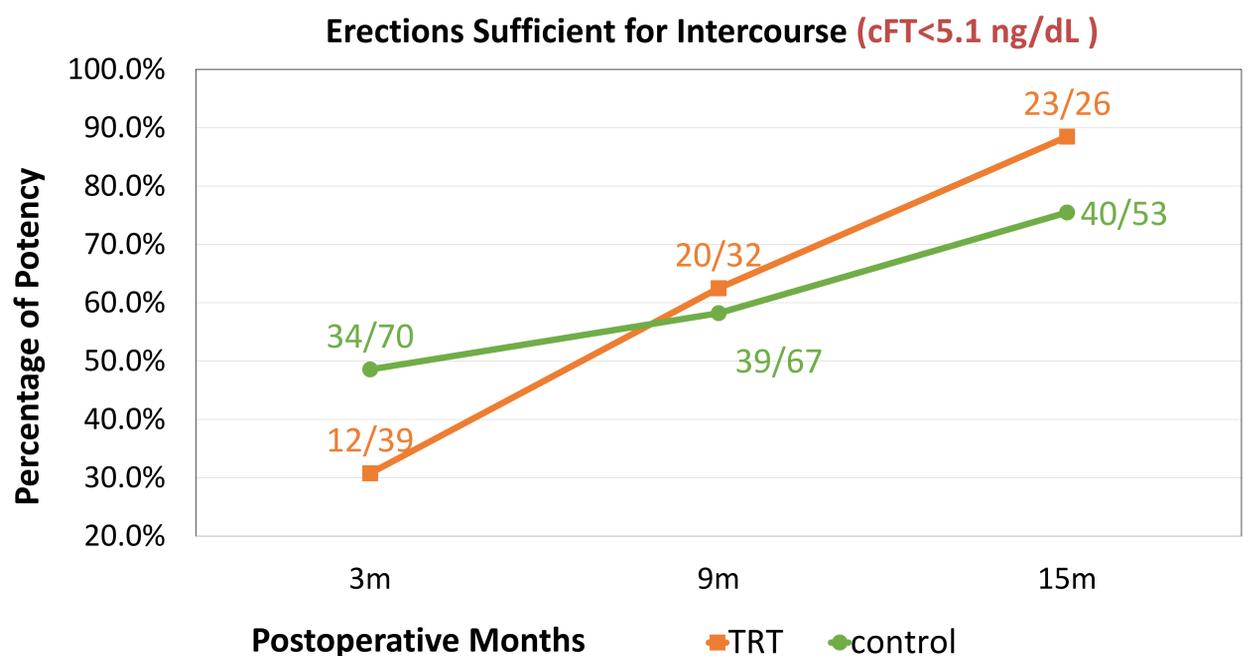
4. Results – Impact of Testosterone Replacement Therapy in Hypogonadal Men

Of the 212 patients, 123 (58%) men had a preoperative IIEF-5 score between 22 and 25 and cFT < 5.1 ng/dL.

40/123 (32.5%) received TRT, while 83/123 (67.5%) did not.

At 3, 9, and 15 months post RARP, potency recovery was:

- **31%, 63% and 89% in the TRT group,**
- **48%, 58% and 75% in the control group.**



5. Conclusion

In patients undergoing RARP, a preoperative cFT threshold < 5.1 ng/dL was predictive of decreased return of potency at 3, 9 and 15 months post-RARP. Additionally, for men with low cFT, testosterone replacement was predictive of increased potency recovery. These findings encourage further exploration of the relationship between testosterone, prostate cancer, and erectile dysfunction.