

DOES PRE-OPERATIVE SERUM PSA PREDICT OUTCOME FROM TURP?

Hypothesis / aims of study

Recent studies have demonstrated a direct correlation between prostate volume and serum PSA in men with lower urinary tract symptoms (LUTS) secondary to benign prostatic enlargement (BPE) (1). There is also evidence that PSA is correlated with the obstruction grade defined by invasive pressure flow studies (PFS) (2). Taken together it would appear that increasing prostate volume results in increased PSA, increased IPSS and reduced Q_{max} (3).

The aim of our study was to investigate the predictive value of PSA in relation to outcome from TURP.

Study design, materials and methods

Patients undergoing elective TURP at our institution for treatment of LUTS presumed secondary to BPE were invited to enter a prospective study investigating the predictive value of non-invasive PFS. As part of their assessment the pre-operative PSA, if measured, was recorded.

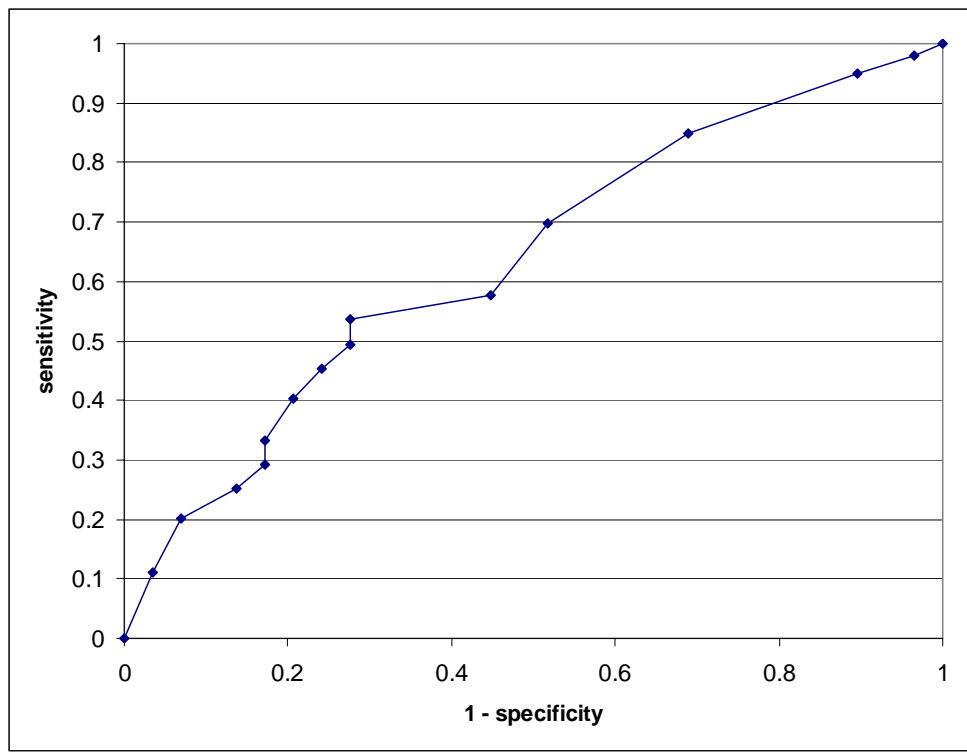
Following informed consent, men who agreed to participate in the study underwent an identical assessment before and 4 months after TURP, including IPSS and QOL score, uroflowmetry and non-invasive PFS with the penile cuff device. The pre-defined criterion for a successful outcome was a 50% reduction in total IPSS

Differences in serum PSA values between patients with successful outcome and those with poor outcome were assessed using Student's 't' test. A receiver-operator characteristics (ROC) curve was constructed to define the pre-operative PSA level, which optimized prediction of successful outcome following TURP.

Results

To date 106 patients with mean (range) age 69 years (48-86) have been reviewed from a target sample size of 200. Post-operative IPSS score showed that 83 men (78%) had a good outcome. The mean (s.d) pre-operative PSA in this group was 4.23(4.95) ng ml⁻¹ compared to 2.51 (2.93) ng ml⁻¹ in those with poor outcome (P<0.03). ROC analysis showed the optimum value of pre-operative PSA for prediction of satisfactory outcome of TURP was 2.5 ng ml⁻¹ with sensitivity 60% and specificity 70% (ppv = 89%).

Outcome	Mean	Standard Deviation
Good	4.23	(±4.95)
Poor	2.51	(±2.93)



Interpretation of results

These initial results suggest that PSA may be useful as a predictor of outcome following TURP. It therefore has potential use in the evaluation of men suffering from LUTS to guide individual management. Although our initial results are encouraging and we realise their preliminary nature and appreciate the need to complete data collection on all men entered into the prospective study.

Concluding message

Recent publications have recommended the use of 2.5 ng mg^{-1} as the cut point for prostate cancer. Our study, although of much smaller number and dealing with benign cases, also identified, after careful statistical evaluation, the same value for predicting the outcome of TURP in patients with LUTS.

We realise the small number of cases in our study and also feel that more patients need to be recruited to authenticate our results. Moreover we plan to further this study by assessing whether patients with high PSA have high IPSS and high resected prostate tissue weight after TURP.

These initial results have enlightened us by identifying PSA as a predictor for patients with LUTS, undergoing TURP.

Reference:

- 1-PSA as an estimator of prostate volume in management of patients with symptomatic BPH
Eur Urol. 2003 Dec; 44(6): 695-700.
- 2-Serum PSA to predict the presence of bladder outlet obstruction in men with urinary symptoms
BJU Int. 2004 Dec; 94(9): 1283-6.
- 3-Relationship between age, prostate volume, PSA, symptom score and uroflowmetry in men with LUTS
Scand J Urol Nephrol. 2003; 37(4): 322-8.