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FREE PSA PROVIDE MORE PRECISE DATA ON BENIGN PROSTSTE VOLUME THAN TOTAL PSA IN KOREAN POPULATION.

Hypothesis / aims of study

To investigate the efficacy of total prostate-specific antigen (tPSA) and free prostate-specific antigen (fPSA) for the estimation of prostate volume (PV) in pathologically-proven BPH patient.

Study design, materials and methods

From January 2009 to March 2012, 165 Korean men with a PSA less than 10 ng/ml who were pathologically diagnosed without prostate cancer by prostate biopsy were enrolled. Prostate volume was measured with transrectal ultrasonography and total PSA and free PSA were evaluated by serum analysis. Patients were classified into three groups by age :: ≦60, 61-70 and 71-80 years old. The relationships between age, PV, tPSA, and fPSA in all and age-stratified cohorts were analyzed using the Pearson correlation coefficient (r). Receiver operating characteristic (ROC) curves. And the results were organized to estimate and compare the ability of serum tPSA and fPSA to assess the PV.

Results

Enrolled patients had a median age of 63.5 (44-80) years, a median tPSA of 5.72 ng/ml, a median fPSA of 0.98 ng/ ml and a median PV of 53.68 ml, respectively. Among the associations between tPSA, fPSA, age, and PV, the highest correlation was verified between fPSA and PV (r = 0.377, P < 0.0001); the correlation coefficient between tPSA and PV was much lower (r = 0.262, P < 0.001). All stratified age cohorts showed the same findings. The ROC curves (for PV greater than 30, 40, and 50 ml) showed that fPSA (area under the curve [AUC]=0.781, 0.718 and 0.700) outperformed tPSA (AUC=0.657, 0.583 and 0.67) in its ability to predict clinically significant PV enlargement.
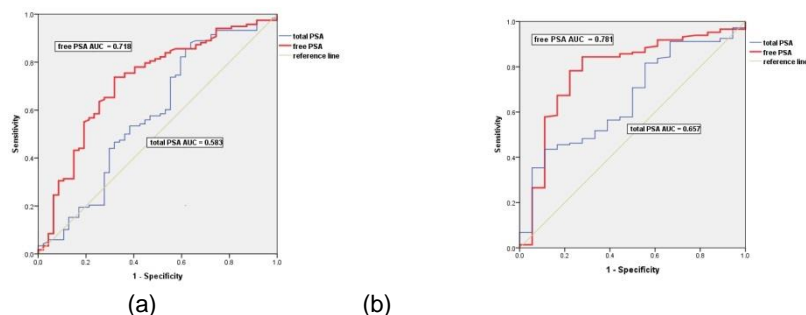
Interpretation of results

Both tPSA and fPSA significantly correlated with PV in Korean men with pathologically--proven BPH, while the correlation efficiency between fPSA and PV was more powerful. Using fPSA we can predict thresholds of PV significantly and estimate PV better than tPSA.. fPSA may be a useful tool in making therapeutic decisions and follow-up management in BPH patients.
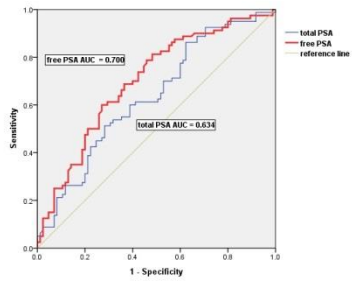
Concluding message

fPSA may be a useful tool in making therapeutic decisions and follow-up management in BPH patients.

Key words: Free Prostate specific antigen , Prostatic hyperplasia ,Prostate volume

Figure. Receiver operating characteristic (ROC) curves to predict prostate volume.

(a)   (b)

(c)