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EVALUATION OF SERUM PROSTATE-SPECIFIC ANTIGEN FOR PREDICTION OF PROSTATE VOLUME AND LOWER URINARY TRACT SYMPTOMS IN ASIAN MEN WITHIN COMMUNITY BASED COHORT: A LARGE-SCALE SCREENING STUDY.

Hypothesis / aims of study
The relationship between prostate specific antigen (PSA) and prostate volume (PV) has been examined frequently in men with benign prostatic hyperplasia (BPH). However, most studies of the relationship between PSA and PV have originated from Western countries, few studies have evaluated the relationship between PSA and symptom score. In this report we assess the ability of PSA to predict PV and lower urinary tract symptoms represented by the international prostate symptom score (IPSS).

Study design, materials and methods
After obtaining institutional review board approval, a total of 34,857 men who first enrolled in the Korean Prostate Health Council Screening Program from January 2001 to December 2011 were included in this study. Patients with a serum PSA level of > 10 ng/ml or were aged < 40 years were excluded. The predictive values of PSA for estimating PV and IPSS were accessed based on the receiver operating characteristics-derived area under the curve (AUC).
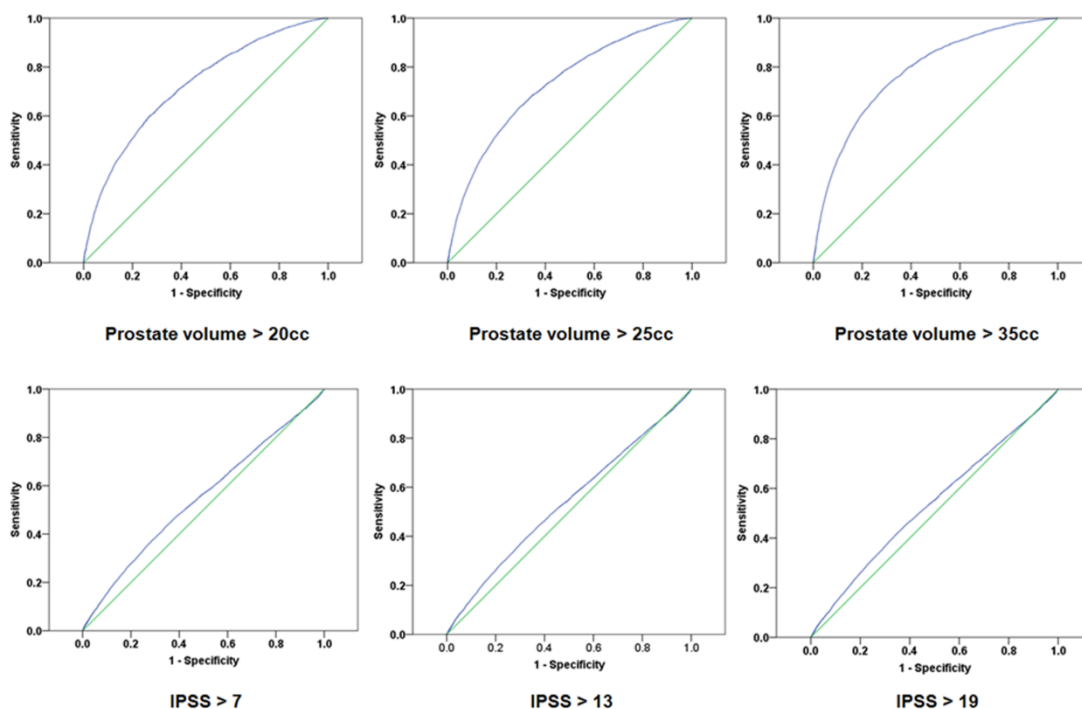
Results
The mean prostate volume was 29.9 ml. The mean PSA level was 1.49 ng/ml, and the mean IPSS was 15.4. Of all 34,857 men analyzed, 51.3% had a PSA level of 0-1.0 ng/ml, 26.0% a PSA of 1.0-2.0 ng/ml, and 20.8% a PSA > 2 ng/ml. According to PSA level, the proportions of subjects with PVs and IPSS were shown in Table 1. A significant relationship was shown between PSA and PV ($p < 0.001$), the IPSS and PSA were also significantly correlated after controlling for age ($p < 0.001$). The AUCs of PSA for predicting PV >20 ml, >25 ml and >35 ml were 0.722, 0.728 and 0.779, respectively. The AUCs of PSA for predicting IPSS >7, >13 and >19 were 0.548, 0.536 and 0.537, respectively. (Figure 1)

Interpretation of results
PSA levels not only have a strong correlation with PV but that they are also a strong predictor of PV. PSA also had a significant correlation with IPSS, the correlation power was weak, and the predictive value for IPSSs above the cut-off levels was not excellent

Concluding message
Our results showed that PSA levels not only have a strong correlation with PV but that they are also a strong predictor of PV in a large-scale Korean screening cohort. Although PSA also had a significant correlation with IPSS, the correlation power was weak, and the predictive value for IPSSs above the cut-off levels was not excellent.

Prostate volume > 20cc | Prostate volume > 25cc | Prostate volume > 35cc

IPSS > 7 | IPSS > 13 | IPSS > 19