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Serum Dehydroepiandrosterone Sulfate Usage for Early Detection of Prostate Cancer in Men with Serum Prostate Specific Antigen Level between 2.5 and 4.0 ng/ml: A Pilot Study

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**Abstract:** Aims: We prospectively evaluated the diagnostic value of serum prostate specific antigen (PSA)-based diagnostic parameters and serum dehydroepiandrosterone sulfate (DHEAS) level for early detection of prostate cancer in patients with serum PSA level between 2.5 and 4 ng/ml. Materials and Methods: This study included 83 consecutive men with serum PSA levels between 2.5 and 4.0 ng/ml. All patients underwent transrectal ultrasound-guided prostate needle biopsy. Total PSA level, free/total PSA ratio, PSA density of the total volume (PSAD-TV), PSA density of the transition zone (PSAD-TZ), and serum DHEAS values were determined. Results: Seventy-four patients (89.2%) had histopathologically confirmed benign prostatic hyperplasia and the remaining (10.8%) had prostate cancer. DHEAS was a significant predictor of prostate cancer compared to free/total PSA ratio, PSAD-TV and PSAD-TZ ( $P_{\text{DHEAS}} = 0.012$ ,  $P_{\text{free/total PSA}} = 0.326$ ,  $P_{\text{PSAD-TV}} = 0.884$ ,  $P_{\text{PSAD-TZ}} = 0.203$ ). If the cut-off point of DHEAS was considered 1,700 ng/ml, sensitivity and specificity of DHEAS were 100% and 59.4%, respectively. This cut-off point might lead to avoiding 40.9% of unnecessary prostate biopsies. Conclusions: Serum DHEAS seems to be a reasonable marker for early detection of prostate cancer and can avoid unnecessary prostate biopsy in patients whose serum PSA level is between 2.5 and 4 ng/ml.

**Key Words:** Prostate cancer, prostate specific antigen, dehydroepiandrosterone sulfate

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