

Relationship of Age, Prostate Specific Antigen, Prostate Volume and Lower Urinary Tract Symptoms in Patients with Benign Prostatic Hyperplasia

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Abstract

Background: Benign prostatic hyperplasia is a common disease among aging men. Although not all men with prostate enlargement develop symptoms of the disease, symptomatic patients often present with lower urinary tract symptoms and a poor quality of life. The important clinical parameters of benign prostatic hyperplasia significant for the diagnosis and management of the disease include international prostate symptom scores (IPSS), digital rectal examination findings (DRE), peak flow rate, post-void residual volume, and bladder wall thickness, among others.

Objective: To investigate the relationship between age, prostate-specific antigen, prostate

volume, and lower urinary tract symptoms in patients with benign prostatic hyperplasia.

Method: Patients with clinical, sonographic, and laboratory features of benign prostatic hyperplasia were recruited into the study following informed consent. The patients underwent routine clinical evaluation, including demographic data collection, assessment of the international prostate symptom score (IPSS), serum prostate-specific antigen (PSA) assay, and transrectal prostate scan to determine age, IPSS, PSA, and prostate volume, respectively. The relationship between these parameters was subsequently determined. Data obtained were analyzed with SPSS version 23. Analysis was

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performed using Pearson's correlation coefficient for continuous variables and Spearman's rank correlation coefficient for categorical variables. A p-value of < 0.05 was considered statistically significant.

Result: A total of 109 patients completed the study. The age distribution among the participants ranged from 42 to 81 years, with a mean of 66 ± 8.12 SD. The majority fell within the age group of 66-69. The prostate volume of the study group ranged between 22 and 367 mL, with a mean prostatic volume of 106.9 ± 57.19 SD. Serum prostate-specific antigen (PSA) showed a range of 0.28-111 ng/mL, with a mean of 10.33 ± 17.01 SD. Serum PSA was further grouped into three categories: 0-4, 5-10, and >10 . The serum PSA of the majority of the patients was within the range of 0-4 (48.7%, 53 patients). The remaining patients fell into the ranges of 5-10 (24.7%, 27 patients) and >10 (26.6%, 29 patients). Concerning lower urinary tract symptoms, the majority of the study group reported severe IPSS (75.2%, 82 patients). There was a significant correlation between serum PSA and IPSS ($p < 0.05$).

Conclusion: There was a significant correlation between serum PSA and IPSS (International Prostate Symptom Score), but no significant correlation was observed among other measures of BPH investigated in this study.

Keywords: benign prostatic hyperplasia, prostate specific antigen, prostate volume