Relationship between Benign Prostatic Hyperplasia/Lower Urinary Tract Symptoms and Total Serum Testosterone Level in Healthy Middle-Aged Eugonadal Men

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INTRODUCTION: Scant data are available concerning the relationship between lower urinary tract symptoms (LUTS)/benign prostatic hyperplasia (BPH) and total serum testosterone level (TT) in eugonadal state.

AIM: We performed this study to evaluate the relationship between LUTS/BPH and TT in eugonadal men.

METHODS: A cross-sectional study was conducted that included a total of 2,308 eugonadal (TT ≥ 3.0 ng/mL) male police officers aged 40-59 years who had participated in a health examination. LUTS/BPH were assessed by prostate-specific antigen level, international prostate symptom score (IPSS), total prostate volume (TPV), maximal flow rate (Qmax), postvoid residual urine volume (PVR), and a full metabolic workup. We then investigated their relationship using the Spearman correlation test, multiple linear regression, and logistic regression analyses.

MAIN OUTCOME MEASURES: Associations of TT with IPSS, Qmax, and PVR.

RESULTS: The median age and TT level were 49.0 years and 5.37 ng/mL, respectively. The TT level showed significant positive correlations with Qmax (r = 0.043, P = 0.048) and a significant negative correlation with PVR (r = -0.050, P = 0.022). No significant correlation was found between TT and TPV or IPSS. However, Qmax and PVR as well as TPV and IPSS did not significantly correlate with TT after adjusting for age and/or metabolic syndrome. On logistic regression, no significant difference was found in surrogate measures of LUTS/BPH (TPV > 30 mL, IPSS > 7, Qmax < 15 mL/second, and PVR > 50 mL) between the highest quartile TT group (median: 7.07 ng/mL) and the lowest quartile group (median: 3.92 ng/mL).

CONCLUSION: In our study, TT was not clearly correlated with LUTS/BPH in middle-aged eugonadal men.