Relationships between Prostatic Volume and Intravesical Prostatic Protrusion on Transabdominal Ultrasound and Benign Prostatic Obstruction in Patients with Lower Urinary Tract Symptoms

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Abstract

Introduction: The objective of this study is to determine the relationships between prostatic volume (PV) and intravesical prostatic protrusion (IPP) with benign prostatic obstruction (BPO). Materials and Methods: A total of 408 males (aged 50 years and above) who presented with lower urinary tract symptoms (LUTS) suggestive of benign prostatic hyperplasia (BPH) were recruited. All had International Prostate Symptoms Score (IPSS), quality of life (QOL) index, uroflowmetry (Qmax) and postvoid residual urine (PVR) measured by transabdominal ultrasonography (TAUS). The PV and the degree of IPP were also measured by TAUS in the transverse and sagittal planes respectively. The PV is classified as Grade a, (20 ml or less), Grade b, (more than 20 ml to 40 ml) and Grade c, (more than 40 ml), while the IPP is graded as Grade 1 (5 mm or less), Grade 2 (more than 5 mm to 10 mm) and Grade 3 (more than 10 mm). Results: There was a fair positive correlation between the PV and IPP (Spearman, rs = 0.62, P <0.001) with important clinical exceptions. There was negative correlation between the PV and Qmax (rs = -0.20, P = 0.022), IPP and Qmax (rs = -0.30, P <0.001). PV and IPP were good predictors of BPO. However, IPP was slightly better (rs of -0.30 vs -0.20) than PV. Conclusion: PV is related to IPP with important clinical exceptions. IPP is a better predictor of BPO than PV.

Key words: Benign prostatic hyperplasia, Prostate volume