

Correlation of International Prostate Symptom Score with Prostate Volume and Quality of Life in a Screened Population of University Workers

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ABSTRACT

Introduction: Adult males with prostatic diseases usually present with lower urinary tract symptoms. These symptoms are assessed for severity using measures like the International Prostate Symptom Score. Knowledge of the volume of the prostate is important in management of patients with prostatic diseases. This study was carried out to determine the correlation between the prostate volume and the severity of lower urinary tract symptoms.

Material and Methods: Apparently healthy male staff, recruited at a medical outreach were evaluated for presence of enlarged prostates (using transabdominal scans) and lower urinary tract symptoms (using the international prostate symptom score) and these were then correlated.

Results: Sixty one male respondents were recruited with the mean age being 52.03±7.5 years. About five percent of the men (4.9%) had severe symptoms, 11.1% had moderate symptoms and 83.6% had mild symptoms. The median prostate volume was 22.83cm³. No statistically significant relationship could be established between prostate volume and the International Prostate Symptom Score (p=0.773). The quality of life was however found to correlate with the international prostate symptom score.

Conclusion: The size of the prostate does not determine the severity of lower urinary tract symptoms in men with enlarged prostates.

Keywords: Correlation, International Prostate Symptom Score, Prostate Volume, Quality of Life

INTRODUCTION

Prostatic diseases are a significant cause of morbidity in adult males with the commonest conditions of the prostate being benign prostate hyperplasia and prostatic cancer.¹ Patients with prostate disease most commonly present with lower urinary tract symptoms (LUTS).² Studies have shown that there is a reduction in overall health-related quality of life (QoL) in men with lower urinary tract symptoms (LUTS), which worsens with increasing severity of LUTS.^{3,4} Most patients present in clinics with bothersome lower urinary tract symptoms (LUTS), however some patients do have prostatic diseases without having bothersome LUTS.⁵ Knowledge of prostate volume is beneficial in the management of patients presenting with prostatic disease.² Studies have been carried out to correlate prostatic volume with International Prostate symptoms Score in patients with benign prostate hyperplasia (BPH). This study however seeks to screen for patients in the general population with LUTS who have not presented at a clinic facility and correlate their IPSS values with their

prostate volumes.

MATERIAL AND METHODS

This study was carried out at the University of Calabar, Calabar in South-Southern Nigeria in November 2016. Male staff above 40 years of age, who had not previously presented for management of any prostatic disease, were recruited into the study. Patients were recruited at a medical outreach targeted at screening for prostatic cancer. A full medical history was obtained and physical examination including digital rectal examination (DRE) carried out. Respondents were interviewed using standardized questionnaires for IPSS. Men already diagnosed with or receiving treatment for prostatic diseases were excluded from the study. Prostate volume was estimated using transabdominal ultrasonography.

STATISTICAL ANALYSIS

Data from filled proforma was analyzed using the statistical package for social sciences (SPSS) version 20. Pearson's correlation coefficient was used to assess correlation between prostate size and other variables. Statistical significance for all tests was set at P<0.001.

RESULTS

Sixty one (61) apparently healthy males were recruited into the study. The mean age was 52.03±7.5 years with the age ranging from 40 to 66 years. The prostate volume was 22.85 cm³ with range from 7.70 to 105.02cm³ (Figure 1). Severe symptoms were seen in 4.9% of the men while 11.5 had moderate symptoms (Table 1). Correlation between IPSS and QoL showed a statistically significant relationship (P<0.001) while that between IPSS and prostate volume was not statistically significant (p=0.773) (Figures 2 and 3).

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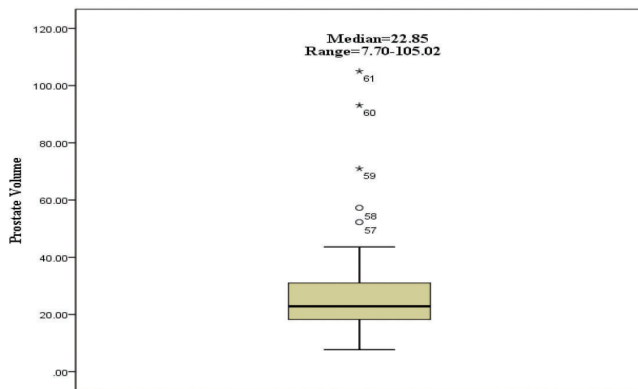


Figure-1: Box plot showing descriptive statistics of prostate volume in cm^3

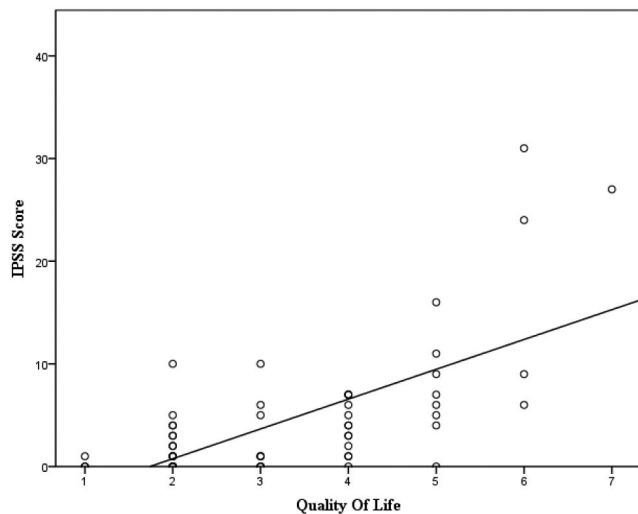


Figure-2: Scatter plot showing correlation between QoL and IPSS

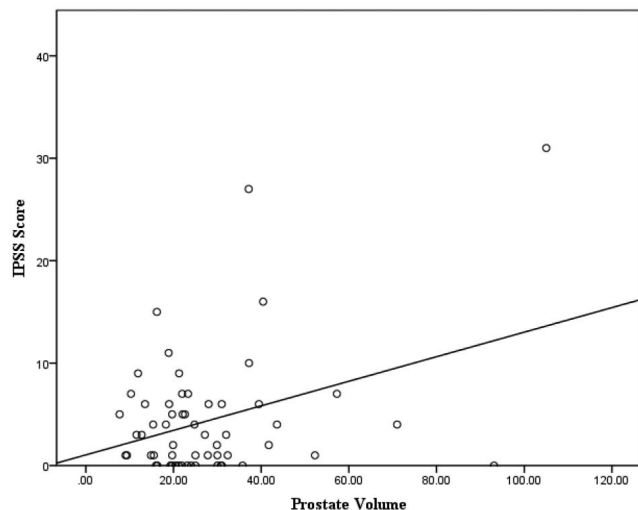


Figure-3: Scatter plot showing correlation between prostate volume and IPSS score

DISCUSSION

Several studies to assess the relationship between symptom severity and prostate volume have been carried out in men with prostatic diseases.^{2,3,6} The International Prostate Symptom Score (IPSS) is in wide use for the evaluation of the severity of LUTS and other conditions that cause

LUTS. It consists of seven questions that are used to assess voiding symptoms (incomplete emptying, intermittency, weak stream, and straining to void) and storage symptoms (frequency, urgency, and nocturia).⁷ This study was however carried out in a population of apparently healthy university workers to screen for LUTS and correlate such with their prostate volumes.

The mean age of men in this study was 52.03 ± 7.5 years. This is less than the mean in other similar studies^{3,8} probably because these were presumed “healthy” workers from a screening exercise compared with the more elderly patients who were assessed in those studies having presented at clinics for LUTS. Using the IPSS, 4.9% of the men had severe symptoms and 11.1% had moderate symptoms showing that a significant number of patients actually have symptoms that qualify for treatment but still think they are healthy enough not to seek for medical care. This poor health-seeking behaviour seen in our study was also noted in a similar study carried out by Olaopa et al⁹ in Ibadan, South western Nigeria. The median volume of the prostate was 22.85cm^3 with range of $7.70\text{-}105.02 \text{cm}^3$. In this study there was no statistically significant correlation between IPSS and prostate volume (Pearson’s coefficient (r) = 0.038, $p=0.773$). This finding is similar to findings in previous Asian and African studies^{2,3,6,8}. Thus larger prostates do not necessarily give the most severe symptoms as earlier documented by these authors. However, a statistically significant and good correlation was found between IPSS and QoL score (Correlation coefficient (r) = 0.617, $p<0.001$). Agrawal et al³ and Gyanawali et al⁸ reported similar findings in their respective studies showing that there is a steady deterioration in the quality of life as LUTS become more severe.

CONCLUSION

This study has revealed the presence of moderate to severe symptoms in significant number of men above 40 years of age not seeking care for lower urinary tract symptoms, bringing to the fore the necessity for screening of patients for prostatic diseases. In addition, the size of the prostate does not correlate with severity of symptoms and therefore should not be an indication to commence therapy. It should rather be considered important in the type of therapy commenced.

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