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The correlation between obesity and prostate size in patients with benign prostatic hyperplasia at Charlotte Maxeke Johannesburg Academic Hospital

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ABSTRACT

Background

Benign prostatic hyperplasia (BPH) is on the increase placing a substantial burden on health care systems including the Department of Urology at Charlotte Maxeke Johannesburg Hospital Academic (CMJAH). Recent studies have shown that men with high body mass index (BMI) and central obesity, as denoted by waist circumference (WC) have bigger prostate volumes (PV) with subsequent increase in lower urinary tract symptoms (LUTS) than men with normal BMI. The purpose of this research was to investigate the correlation between Obesity and PV in patients with BPH to appreciate the disease burden in our setting

Methodology

The study included 178 men aged between 50-75 years with BPH seen consecutively at CMJAH Urology Outpatient Department between September 2018 and February 2019. Weight and height measurements were obtained to calculate BMI. Furthermore, WC was measured using a measuring tape while a transrectal ultrasound (TRUS) was used to measure PV. Patient demographics, comorbid conditions such as hypertension, diabetes, smoking and prostate specific antigen (PSA) were also recorded

Results

Patients in the study had a mean age of 64.87 ± 6.53 years and the mean BMI was 27.31 ± 3.93 kg/m^2. The mean PV of each BMI group were 52.92± 38.49, 61.00± 33.10 and 64.86± 37.46 cm^3 for normal, overweight and obese groups respectively and the average PV score was 59.36 ± 36.50 cm^3. The mean PSA score was 4.30 ± 3.13 ng/ml, while the mean PV was 54.37 ± 35.25 cm^3 and 65.07 ± 37.29 cm^3 for WC < 94 cm and WC ≥ 94 cm respectively. The mean WC was 98.67 ± 11.50 cm. There was no correlation between BMI and PV (p-value = 0.195) as well as between PV and WC (p-value = 0.051), hypertension, diabetes or smoking. The results revealed that the relationship between PV with PSA level as well as age was significant (p-value = 0.001, p-value = 0.009 respectively)

Conclusion

The results showed no correlation between PV and BMI as well as WC. Diabetes and hypertension also had no positive correlation with PV. A follow-up study may be indicated to look at the correlation between obesity, lower urinary tract symptoms (LUTS) and urinary flow rates to establish whether aggressive management of obesity would have significant impact on the management of BPH.