Transabdominal ultrasonographic assessment of prostate size and volume in Nigerians with clinical diagnosis of benign prostatic hyperplasia

Sir,

Prostate measurements are used as preoperative criteria for deciding on the operation method in patients with benign prostatic hyperplasia (BPH). The prostate volume has been measured by various methods including digital rectal examination, cystourethrography, urethroscopy, and urethral pressure flow, but all these are inaccurate. [1] For this reason, ultrasound scanning has gained wide popularity in the past few years.[2] There is paucity of data on prostate volume in Nigerians with BPH.

We studied prostate dimensions and volume by transabdominal ultrasonography (TAUS) in patients with clinical diagnosis of BPH in our center. A total of 117 consecutive patients with clinical diagnosis of BPH were examined by means of ultrasound at the Department of Radiology, Usumanu Danfodiyo University Teaching Hospital, Sokoto, from June 2005 to June 2006. An Apogee 800 PLUS scanner (made in China 2003) with variable frequency probes (5–12 MHz) and Simen's scanner (made in Germany 1996) were used during the study. All measurements were performed with full bladder, which was determined as the patient having the urge to micturate. Measurements were performed in the supine position. The transverse (width), craniocaudal (length), and anteroposterior (height) dimensions of the prostate were measured. The volume of the prostate was calculated using Simpson's formula, which is automatically calculated by the machine. The longest distance between the right and left lateral margins where the prostate is observed widest was measured for transverse dimensions and the longest distance between the *anterior–posterior* margins was measured for the *anterior–posterior* dimension. The longest dimension from the base of the prostate to the apex was measured for the craniocaudal dimension. The results of measurements are presented as means ± SD. The prostate was considered enlarged if the volume was ≤30 ml.[3]

The mean age of the patients was 67.1 ± 9.25 years (range, 41–98 years). The mean prostate craniocaudal dimension was 59.9 ± 10.2 mm, while the mean *anterior–posterior* and transverse dimensions were 54.5 ± 8.9 mm and 48.8 ± 9.1 mm, respectively. All the patients except one had enlarged prostates (range, 22.5–387 ml) with a mean prostate volume of 214 ml ± 8.49 ml.

The mean prostate volume in our study population is much higher than what is reported from Caucasian populations. This may be partly explained by racial factors as previous workers have shown that African-Americans have a higher mean prostate volume than other races.[4] However, the mean prostate volume in our study population is also higher than a similar study that was performed in Sub-Saharan Africa[5] possibly implying late presentation in our patient population. One limitation of our study is that the diagnosis of BPH was on clinical grounds. Since there was no follow-up with histologic confirmation, some of the patients may actually have prostatic carcinoma.

We conclude that the mean prostate volume in our study population is much higher than reports from Caucasian and other African populations, implying racial differences and late presentation in our patients. Further studies are needed in Nigeria, with histologic confirmation to corroborate the findings of our study.

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