CHARACTERISTICS OF 5-α-REDUCTASE-INHIBITOR-INDUCED PROSTATE VOLUME REDUCTIONS

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Introduction

- Medical therapy is the usual first-line management of uncomplicated benign prostatic hyperplasia (BPH) and alpha-adrenergic receptor blockers and 5-alpha-reductase inhibitors (5-ARIs) are two mainstays.
- It is known that BPH develops in the transition zone and 5-ARIs reduce prostate volume [1, 2].
- We are questioning whether the transition zone is more affected by 5-ARIs than other zones such as central zone or peripheral zone. We evaluated whether transition zone is affected more by volume reduction of non-selective 5-ARIs.

Methods

- We reviewed the medical records of men who had been taking alpha blocker and 5-ARI for managing their lower urinary tract symptoms (LUTS) secondary to benign prostatic hyperplasia and had serial transrectal ultrasonography (TRUS) images.
- The data of patients who had a history of taking 5-AI before this investigation was excluded.
- TRUS images were taken at baseline before taking 5-ARI and at 1 year after the commencement of dutasteride (0.5 mg) or finasteride (5.0 mg).
- Total prostate and transition zone volumes (TPV and TZV) were measured during the ultrasound.
- We used transition zone index (TZI) to determine the relative volume of transition zone to total prostate volume. TZI was calculated as the ratio of TZV to TPV. Volume reduction (%) was calculated as the ratio of volume reduction to baseline prostate volume.
- Additionally, serum prostate-specific antigen (PSA) concentrations were measured at baseline and then at 1 year and 2 years after the 5-ARIs were commenced.

Results

Patients and baseline characteristics

- All of the 43 patients (mean age, 68.5 yr ± 7.2; range, 53–82 yr) with clinical lower urinary tract symptoms suggestive of benign prostatic hyperplasia and who were 5-ARI-naive were prescribed dutasteride (0.5 mg, 74.4%, 32/43) or finasteride (5.0 mg, 25.6%, 11/43) for more than 1 yr (13.5 ± 4.2 months).

Changes clinical parameters and prostate volume at 1 year after the commencement of 5-ARIs

- The baseline mean TPV, TZV and TZI values were 58.0 ± 25.6 cm³, 30.8 ± 16.6 cm³, and 0.52 ± 0.13, respectively (Table 1).
- At 1 yr after the commencement of the 5-ARIs, the mean TPV, TZV, and TZI values were 48.0 ± 23.5 cm³, 28.1 ± 19.0 cm³, and 0.55 ± 0.13, respectively (Table 1).

% Volume Reduction at 1 year after the commencement of 5-ARIs

- The TZI value is not significantly different at 1 yr compared with baseline (p > 0.05), while the TPV and TZV reductions are 22.7 ± 15.2% and 27.2 ± 16.8%, respectively; there is no significant difference between the TPV and TZV volume reductions (p > 0.05) (Table 2).

Conclusions

These results show that prostate volume reduction induced by 5-ARIs occurs in the entire prostate universally, rather than in the transition zone specifically.

References