

DUTASTERIDE ADD-ON THERAPY IMPROVES BLADDER OUTLET OBSTRUCTION IN PATIENTS WITH BENIGN PROSTATIC ENLARGEMENT: ONE-YEAR FOLLOW UP WITH URODYNAMIC STUDY

Hypothesis / aims of study

There has been no investigation about whether dutasteride improves bladder outlet obstruction (BOO) in male patients with lower urinary tract symptoms/ benign prostatic enlargement (LUTS/BPE) over a long-term period. We retrospectively investigated the effect of one-year dutasteride add-on therapy on clinical and urodynamic parameters in patients with LUTS/BPE.

Study design, materials and methods

We retrospectively analyzed 20 patients with BPE who were referred to our hospital with persisting LUTS in spite of receiving alpha-adrenergic antagonist monotherapy. Prior to and one-year after receiving dutasteride (0.5 mg daily) add-on therapy with a preceding alpha-adrenergic antagonist, we evaluated the clinical and urodynamic parameters as described below; total prostate volume (TPV), IPP, maximum urine flow rate (Q_{max}), voided volume (VV), postvoid residual urine volume (PVR), international prostate symptom score (IPSS), quality of life (QOL) score, and prostate specific antigen (PSA). Several urodynamic parameters including the detrusor pressure at the Q_{max} (P_{det}Q_{max}) and the presence or absence of detrusor overactivity (DO) were evaluated. The bladder outlet obstruction index (BOOI) and bladder contractility index (BCI) were calculated in the following formula: BOOI = P_{det}Q_{max} - 2Q_{max} and BCI = P_{det}Q_{max} + 5Q_{max}. If the PSA level exceeded 4.0 ng/ml, prostate biopsy was routinely recommended to rule out prostate cancer, and patients who were negative for cancer were included in this study. None of the patients received any anticholinergic agents in this period.

All variables are expressed as mean ± SD. The pre-medication and post-medication data were analyzed with paired *t*-test. Statistical significance was defined as *p* < 0.05.

Results

The mean age of the 20 patients was 71.7 ± 5.8 years. Preceding alpha-adrenergic antagonist was naftopidil in 7 patients, silodosin in 7 patients, and tamsulosin in 6 patients. Alpha-adrenergic antagonists were not changed in this study duration.

Although, dutasteride add-on therapy improved Q_{max} from 7.7 ± 3.4 to 10.1 ± 5.0 ml/sec and PVR from 67.5 ± 73.6 to 62.2 ± 46.7 ml, these changes were not statistically significant. On the other hand, TPV significantly reduced from 40.9 ± 18.6 to 29.6 ± 12.7 ml and PSA also significantly decreased from 5.1 ± 6.8 to 2.4 ± 3.1 ng/ml.

In urodynamics, P_{det}Q_{max} significantly decreased from 71.7 ± 27.7 to 60.0 ± 27.7 cmH₂O and BOOI also significantly decreased from 58.4 ± 28.1 to 44.2 ± 28.3. BCI did not change from 110.4 ± 34.2 to 110.5 ± 37.6. The averages of the Q_{max} and the P_{det}Q_{max} before and after dutasteride add-on therapy were plotted on the Schäfer's nomogram (Fig.).

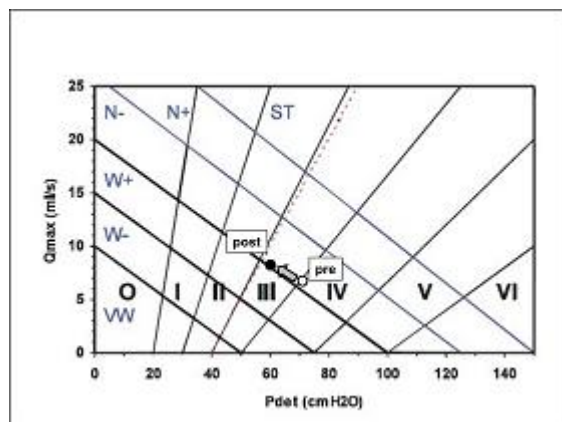
Further, before dutasteride add-on therapy, twelve patients had DO. In the patients with DO, BOOI were significantly higher than the patients without DO (73.7 ± 26.8 vs 35.4 ± 28.1). Further, DO disappeared after dutasteride add-on therapy in six patients (50%).

Interpretation of results

Our study showed the urodynamic improvement in patients with LUTS/BPE by dutasteride add-on therapy with alpha-adrenergic antagonist over one-year period. Dutasteride add-on therapy reduced significantly not only TPV but also BOOI without impairing bladder contractility.

Previous study shows dutasteride add-on therapy is effective to improve voiding and storage symptoms in patients with BPE and improves benign prostatic obstruction and storage bladder function after six months period [1]. The previous report also discussed that the urodynamic data of dutasteride in a longer period such as 1 or 2 years may be needed [1]. Although, our investigation is retrospective study and small patient population, our study shows similar result with previous report after one-year period.

Fig. The obstruction grade assessed by the Schäfer's nomogram improved.



Concluding message

A one-year treatment of dutasteride can improve bladder outlet obstruction without impairing bladder contractility.

References

1. Wada N, Kita M, Hashizume K, Matsumoto S, Kakizaki H. Urodynamic effects of dutasteride add-on therapy to alpha-adrenergic antagonist for patients with benign prostatic enlargement: prospective pressure-flow study. *Neurourol Urodyn* 32:1123-1127, 2013

Disclosures

Funding: none **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics not Req'd:** this study was proceeded within conventional evaluation and treatment in our real life practice. **Helsinki:** Yes **Informed Consent:** Yes