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 (Qmax), 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 Qmax (PdetQmax) 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 = PdetQmax – 2Qmax and BCI = PdetQmax + 5Qmax. 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 naftopilid 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 Qmax 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, PdetQmax 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 Qmax and the PdetQmax 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

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