

EFFICACY AND SAFETY OF TAMSULOSIN AND MIRABEGRON COMBINATION TREATMENT IN WOMEN PATIENTS WITH DETRUSOR OVERACTIVITY AND IMPAIRED CONTRACTILITY

Hypothesis / aims of study

Detrusor overactivity with impaired contractility (DOIC), previously referred to as detrusor hyperactivity with impaired contractility (DHIC) is a paradoxical dysfunction involving both filling and voiding phase. There is no standard guidelines related with medical treatment of patients with DOIC and most urologists have treated empirically based on the patients' individual symptoms. We investigated the therapeutic efficacy and safety of tamsulosin and mirabegron combination treatment in women with DOIC.

Study design, materials and methods

A prospective study was conducted in 19 consecutive female patients with DOIC from Aug. 2015 to Oct. 2016. All patients suffered from both voiding symptoms and storage symptoms, and DOIC was diagnosed by urodynamic studies. The definition of DOIC in this study was detrusor overactive and/or reduced compliance ($\Delta P_{det} > 15$ cm H₂O) on filling phase with impaired contractility according to bladder contraction index (BCI < 100) on voiding phase. The patients who had significant low maximal uroflow (Q_{max}, < 5 ml/s), large post voiding residual urine volume (> 300 ml) and previous history of urological surgery were excluded in this study. The Overactive bladder symptoms score (OABSS), voiding diary, maximal Q_{max}, post voiding residual urine volume (PVR) and adverse events (AEs) at baseline, 4 weeks and 12 weeks after treatment were assessed to evaluate the efficacy and safety of combination treatment.

Results

Mean age of the study patients were 62.4 (range 55 to 73) respectively. On the end of study, combination treatment significantly improved OABSS (from 11.4 ± 2.3 to 7.7 ± 2.5 , $P < 0.001$) and maximal flow rate (from 12.7 ± 2.7 to 16.5 ± 5.4 mL/sec, $P = 0.034$) while there was no significant change of post voiding residual urine volume (from 124 ± 47 to 142 ± 102 mL, $P = 0.081$). On voiding diary, combination treatment improved the several parameters related with storage symptoms such as urgency, urgency (from 6.1 ± 4.3 to 4.3 ± 3.5 , $P < 0.001$) urinary incontinence episode (UUI, from 2.1 ± 1.3 to 1.4 ± 1.5 , $P < 0.001$) and frequency (from 13.1 ± 4.3 to 9.8 ± 3.5 , $P = 0.043$) while nocturia did not reduce significantly (from 3.1 ± 1.1 to 2.9 ± 1.5 , $P = 0.235$). There was no severe treatment related AEs include urinary retention and most side effects were mild and self-limited.

Interpretation of results

The patients with DOIC has both voiding and storage symptoms, thus it presents a unique clinical dilemma in which therapeutic options targeting one component of the disease may potentially aggravate the other. One of the most commonly used agent for DOIC to improve the storage symptoms is anti-cholinergic. However, there are huddles such as urinary retention, aggravating the voiding symptoms and multiple side effect when choosing the anticholinergic in patients with DOIC. Theoretically, the beta3 agonist does not alter the bladder contraction and has potential benefit in improving storage symptoms. In this study, the combination treatment of tamsulosin and mirabegron showed the improvement of bothersome symptoms in patients with DOIC without affecting the voiding symptoms by subjective and objective parameters. This results may reinforce the clinical potency of beta3 agonist in the management of storage symptoms without concerning the voiding symptoms in patients with DOIC.

Concluding message

Combination treatment of tamsulosin and mirabegron was effective and safe for the female patients with DOIC.

Disclosures

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