379

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EFFICACY AND SAFETY OF TAMSULOSIN FOR THE TREATMENT OF NON-NEUROGENIC VOIDING DYSFUNCTION IN FEMALE: A 8 WEEK PROSPECTIVE STUDY

Hypothesis / aims of study

Female voiding dysfunction includes patients who have difficulty emptying the bladder whether due to inability of the detrusor to contract effectively, outflow obstruction, loss of detrusor-sphincter coordination or a combination of these. The prevalence of voiding phase dysfunction in women is reported 2-25.5% among women referred for the evaluation lower urinary tract symptoms (1). Because α receptors appear to play a role in lower urinary tract function at multiple sites and levels, including bladder neck and external urethral sphincter, and these non-prostate effects should be gender-independent, it seems logical that α-blockers could be used in female voiding dysfunction (2). But, there is little clinical evidence that α-adrenoceptor antagonists are effective in female patients of voiding dysfunction. We evaluated the efficacy and safety of tamsulosin, an α1A/ α1D-selective adrenergic antagonist, in women with non-neurogenic voiding dysfunction.

Study design, materials and methods

Female patients who had suffered from symptoms of voiding dysfunctions for at least 3 months were included in a 8-week treatment with tamsulosin (0.2mg once daily). The inclusion criteria were age ≥ 18 years, AUA symptom score (AUASS) ≥ 15 and maximum flow rate (Qmax) ≤ 12ml/sec and/or postvoid residual urine volume (PVR) ≥ 150ml. Patients with neurogenic voiding dysfunction or anatomical bladder outlet obstruction were excluded. All patients underwent pressure-flow study and were classified according to the Blaivas-Groutz nomogram (3). The treatment outcomes were evaluated by voiding diary, AUASS, bothersome score, Scored form of the Bristol Female Lower Urinary Tract Symptoms questionnaire (BFLUTS-SF), Patient's perception of bladder condition, Patient's Global Impression of Improvement, uroflowmetry, and PVR. Tolerability was evaluated according to adverse event reports.

Results

A total of 113 patients (mean 52.9 years) were enrolled. The efficacy analysis included all patients who received at least one dose of study drug, had efficacy data available from the baseline and at least one on-treatment visit, and were compliant with study medication more than 75% (106 patients). Chief complaints of the patients were slow stream (79.3%), increased frequency (70.8%), feeling of incomplete emptying (48.1%), nocturia (34.9%), urgency (32.1%), and straining (21.7%). According to the Blaivas-Groutz nomogram, 33 patients (28.3%) had no obstruction, 40 (37.7%) mild obstruction, 33 (28.3%) moderate obstruction, and 6 (5.7%) severe obstruction. After 8-week treatment, mean AUASS decreased significantly from 23.9 to 16.1 and decreased by more than 5 in 72 patients (67.9 %) (Table). Both storage symptoms and voiding symptoms were also improved, while mean bothersome score, Qmax and PVR changed significantly as well. Thirty-five (33%) patients showed Qmax increased by more than 50%. Tamsulosin significantly decreased micturition frequency/24 hours, and daytime frequency. After treatment, BFLUTS-SF total score (21.16 to 16.38, $p<0.0001$) and subscale of voiding, filling, quality of life was significantly decreased. (Fig.) Subscale of sexual function and incontinence was not improved significantly ($p>0.05$). The patients reporting "benefit" from treatment was 89 (84%). Patients asked to rate their perception of severity of problems caused by their bladder symptoms on a six-point rating scales, the proportion of patients reported "moderate to many severe problems" as a result of their bladder symptoms was significantly decreased after 8 weeks' treatment (71.8% to 46.2%, $P<0.0001$). There was no significant difference of the changes of efficacy parameters between the subgroups according to the severity of obstruction. Adverse effects related to the medication were dizziness (3), fatigue (1), de novo stress urinary incontinence (SUI) (3), and aggravation of underlying SUI (1).

Interpretation of results

Tamsulosin was effective for the treatment of female voiding dysfunction patients in terms of LUTS symptoms, parameters of voiding diary, and urodynamic parameters. Patient's quality of life was improved and 84% of the patients feel treatment benefit. Side effects were minimal. The limitation of this study is that it is not placebo controlled study but observational study. Randomized, controlled study comparing α-adrenoceptor antagonists to placebo should be followed.

Concluding message

Tamsulosin demonstrated effectiveness in female patients with voiding dysfunction regardless of the obstruction grade. A majority of patients showed subjective and objective improvement and was satisfied with the 8-week treatment. The use of α-adrenoceptor antagonists may be an initial treatment option for female non-neurogenic voiding dysfunction.

Table. The efficacy of α-adrenergic antagonist in women with non-neurogenic voiding dysfunction.

	Baseline	8 weeks treatment	p-value
AUA-SS (sum)	23.89 ± 6.09	16.14 ± 8.17	$p < 0.0001^{*}$

Storage symptom	9.10 ± 3.66	6.58 ± 3.86	P<0.0001†
Voiding symptom	14.78 ± 3.99	9.56 ± 5.48	p <0.0001†
Bothersome score	4.79	3.73	p < 0.0001‡
Maximum flow rate (ml/sec)	10.15 ± 2.79	13.47 ± 5.65	p < 0.0001†
Post-void residual (ml)	69.13 ± 85.45	39.88 ± 48.39	p < 0.0001†
No. voids/24 hrs	10.68 ± 3.93	9.33 ± 3.77	p < 0.0001†
No. diurnal voids	8.99 ± 3.34	7.84 ± 3.04	p < 0.0001†
No. nocturnal voids	1.69 ± 1.33	1.49 ± 1.22	p = 0.3606†

*: Paired t-test, †: Wilcoxon signed rank test, ‡: Generalized Estimating Equations

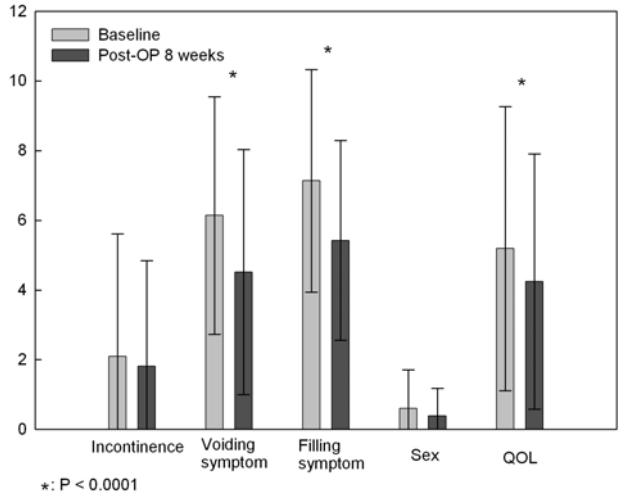

Fig. Changes of the scored form BFLUTS incontinence, voiding, and filling scores, BFLUTS-sex and BFLUTS-Qol after treatment.

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HUMAN SUBJECTS: This study did not need ethical approval because Treatment is common in clinical situation anf low risk to the patients. but followed the Declaration of Helsinki Informed consent was obtained from the patients.