

URODYNAMIC EFFECTS OF SILODOSIN, A NEW ALPHA1A-ADRENOCEPTOR SELECTIVE ANTAGONIST, FOR THE TREATMENT OF BENIGN PROSTATIC HYPERPLASIA

Hypothesis / aims of study

It has been reported that alpha1A-adrenoceptor subtypes are predominantly found in the prostate. However, the effects of alpha1A-adrenoceptor selective antagonist for the treatment of benign prostatic hyperplasia (BPH) have not been verified. Recently, silodosin, a new alpha1A-adrenoceptor selective antagonist, has been reported to be effective for storage and voiding symptoms in BPH patients [1]. The aim of the present study is to investigate the effects of silodosin for the treatment of BPH urodynamically.

Study design, materials and methods

A total of 37 male patients with BPH, with a mean±SD age of 70.9±8.7 (50-93) years old were included in the study. The institutional review board reviewed and approved the protocol and consent forms, and written informed consent from each subject was obtained before entry into the study. The inclusion criteria was IPSS total score of 12 or more, maximum flow rate (Q_{max}) less than 15ml/sec, total prostate volume measured by ultrasonography more than 15ml. Exclusion criteria included patients with prostate cancer, urethral stricture, apparent neurogenic bladder and those on medication that might affect voiding function such as alpha-blockers, anticholinergics and/or antiandrogen drugs. Silodosin with a daily dose of 8mg (given as 4mg twice daily) were administered and the effects of the drug were assessed before, at 1 month and at 3 months after the therapy.

Results

Two patients dropped out because of side effects (abnormal ejaculation and decrease in platelet level) and one patient did not show after the initial administration. Thus 30 patients (including one patient with urinary retention before the study) were evaluated. The mean total prostatic volume was 44.2±21ml. The changes in total IPSS, QOL score and urodynamic data before, at 1 month and at 3 months after the therapy were summarized in the table.

Detrusor overactivity was noted in 9 of 21 (43%) patients studied. After the treatment, it disappeared in 2 of 4 patients and improved (maximum cystometric capacity increased) in another 2 patients. In pressure flow study, obstruction grade in ICS nomogram was noted in 13 patients and equivocal in 4, and underactive detrusor was found in 3. After the treatment, the obstruction grade was improved to equivocal grade in 3 of 7 patients.

Interpretation of results

Although our patients were small in number, total IPSS, QOL score, Q_{max} were significantly improved after the treatment with silodosin. Detrusor overactivity was disappeared or improved, and obstruction grade in ICS and Shaefer nomogram was improved in half of the patients.

Concluding message

Silodosin appears to improve detrusor overactivity and obstruction grade and thus may be effective for both storage and voiding dysfunction in patients with BPH.

References

1. BJU Int 2006; 98:1019-24.

TABLE

	Before (n=29)	At 1 month (n=25)	At 3 months (n=15)
Total IPSS	22.0±6.5	12.7±9.6**	7.3±9.0*
QOL score	4.7±1.2	3.8±1.5*	3.1±1.7
Qaverage (ml/sec)	4.0±4.1	3.9±2.7	3.7±1.2
Qmax (ml/sec)	6.4±2.7	8.6±4.7*	8.9±3.9*
Postvoid residual (ml)	176±132	95.6±73.1**	92.0±85.9*
Cystometry and pressure/flow study	Before(n=20)		At 3 months (n=13)
First sensation (ml)	224.0±113.9		263±122.7
Normal desire (ml)	298.1±140.3		3.8.8±134.4

Strong desire (ml)	401.6±151.0		432.7±142.5
Bladder compliance (ml/cmH ₂ O)	39.2±37.9		34.8±27.3
Pdet open (cmH ₂ O)	66.9±50.9		54.8±30.4
Pdet Qmax (cmH ₂ O)	65.2±43.0		58.6±30.7
Shaefer's nomogram grade (I-VI)	3.9±1.6		2.9±1.4**
BOOindex (PdetQmax-2*Qmax)	58.6±43.1		44.1±30.6*
WF at Qmax (μW/mm ²)	9.4±8.3		10.1±8.8
WF max (μW/mm ²)	17.8±11.0		11.0±8.9

**p<0.01, *p<0.05

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CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.

HUMAN SUBJECTS: This study was approved by the IRB of Dokkyo Medical University and followed the Declaration of Helsinki Informed consent was obtained from the patients.