

α 1- ADRENERGIC BLOCKERS IN YOUNG MEN WITH PRIMARY BLADDER NECK OBSTRUCTION

Aims of Study

Primary bladder neck obstruction (PBNO), diagnosed by the sophisticated videourodynamic study, has been recongnized as one of the important causes of chronic voiding dysfunction in young men.¹ Complex sympathetic nervous system dysfunction of bladder neck smooth muscle has been suggested to be the cause of the PBNO.² Theoretically, α 1-blockers may be effective in the treatment of PBNO. However, the therapeutic results varied greatly because all the previous studies were retrospective and the duration of treatment varied.^{1,3-5} Herein, we present a prospective study on the mid-term (3 months) use of α 1-blockers in young men with PBNO.

Methods

Between May 1998 and Feb. 2001, 84 men younger than 55 years of age were referred for assessment of chronic voiding dysfunction and obstructive uroflow pattern. PBNO was diagnosed by videourodynamic study in 28 men (33.3%). A suprapubic catheter was used to measure intravesical pressure. The key diagnosis of PBNO are narrowing only at the vesical neck on fluoroscopic voiding cystourethrogram (Figure), relaxed external sphincter electromyography during voiding and no distal urethral obstruction. Associated findings were sustained detrusor contraction during voiding ($P_{det} \geq 20$ cmH₂O), $Q_{max} \leq 15$ mL/s and obstructive flow pattern. The age and duration of symptoms of patients with PBNO were 39.3 ± 7.4 years and 18.1 ± 11.6 months, respectively. The presenting symptoms were frequency in 22 (78.6%), urgency in 10 (35.7%), weak stream in 9 (32.1%), nocturia >2 in 7 (25 %) and hesitancy in 7 (25.0%). Doxazosin 1-2 mg hs were administered for at least 3 months. International Prostate Symptom Score (IPSS), quality of life (QOL), uroflowmetry and residual urine were assessed before and 3 months after medication. Improvement of uroflow is defined arbitrarily as at least 2.5 mL/s increase of peak flow rate (Q_{max}). Improvement of symptoms is defined arbitrarily as more than 50% reduction of IPSS. Successful treatment is defined as improvement in both uroflow and symptoms.

Figure



Results

Follow-up data were available in 24 patients. The results of α 1-blockers were summarized in table 1. Improvement in symptoms was noted in 16 (66.7%). Improvement in uroflow was noted in 17 (70.8%). Successful treatment was noted in 13 (54.2%) patients. Factors to predict a successful treatment were listed in table 2. Before treatment, higher P_{detmax} and lower Q_{max} are noted in the patients with successful treatments than those with unsuccessful treatments (70.1 vs. 47.8 cmH₂O, $p=0.01$; and 10.6 vs. 13.3 mL/s, $p=0.02$, respectively). The differences between patients' age, IPSS, QOL, size of prostate, and post-void residual urine were not statistically significant. The decrease of blood pressure was minimal. No significant adverse effects were noted.

Table 1: The treatment results of alpha1 blockers in PBNO

	Before treatment	After treatment	p value
IPSS			
Total	18.3 ± 4.6	11.6 ± 5.2	<0.01
Irritative	7.5 ± 2.1	4.7 ± 1.5	<0.01
Obstructive	10.7 ± 3.1	6.8 ± 2.1	<0.01
QOL	4.1 ± 1.1	2.6 ± 1.0	<0.01
Voided volume (mL)	316 ± 121	326 ± 126	0.5
Qmax (mL/s)	11.8 ± 3.2	15.9 ± 3.9	<0.01
Residual urine (mL)	80.2 ± 17.1	48.5 ± 10.3	<0.01
Systolic blood pressure	125 ± 7.8	122 ± 9.8	0.41
Diastolic blood pressure	78 ± 6.7	75 ± 8.5	0.32

Table 2: Factors to predict a successful treatment

	Successful group N=13	Non-successful group N=11	p value
Age (year)	41.6 ± 6.5	37.6 ± 7.8	0.09
IPSS	18.5 ± 4.6	17.6 ± 4.4	0.45
Prostatic size (mL)	23.8 ± 3.6	21.0 ± 4.0	0.32
Qmax (mL/s)	10.6 ± 2.9	13.3 ± 2.2	0.02*
Pdetmax (cmH20)	70.1 ± 24.4	47.8 ± 18.4	0.01*
Post-void residual (mL)	88.4 ± 20.1	70.9 ± 16.9	0.15

* Statistically significant

Conclusions

α1-Blockers were effective and safe in the treatment of young men with primary bladder neck obstruction. Maximal detrusor pressure at baseline is predictive of therapeutic results. Further studies are needed to clarify its long-term effects.

Reference

1. J. Urol., 1994; 152: 2063- 2065.
2. J. Urol., 1995; 154: 1231-1236.
3. J. Urol., 1996; 156: 1418- 1420.
4. Eur. Urol., 1992; 22: 123- 129
5. J. Urol., 1986; 135: 972- 976.