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STORAGE SYMPTOMS ARE MORE BOTHERSOME THAN VOIDING SYMPTOMS IN PATIENTS WITH BOTH NEUROGENIC LOWER URINARY TRACT DYSFUNCTION AND DIFFICULT EMPTYING –RELATIONSHIP BETWEEN DETRUSOR OVERACTIVITY AND THE EFFECT OF ALPHA1-D/A ADRENOCEPTOR ANTAGONIST NAFTOPIDIL-

Hypothesis / aims of study

There is few clinical evidence that alpha-adrenoceptor (AR) antagonists are effective in facilitation of urine storage in neurogenic lower urinary tract dysfunction (NLUTD) patients, although in vitro studies suggest that there may be a shift in receptor function resulting in the increased importance of alpha-adrenoceptor in the detrusor muscle in neurogenic detrusor overactivity. We investigated the effect of alpha 1-D/A adrenoceptor antagonist naftopidil on symptoms (both voiding and storage) and objective parameters in NLUTD patients with voiding dysfunction.

Study design, materials and methods

Ninety-three Japanese patients (male 46, female 47) with LUTS complicated by NLUTD, from 24 and 84(average 64.8) years old, were analyzed. They fulfilled the following main criteria;IPSS≥8, voiding symptoms in IPSS≥5, IPSS-QOL≥2, post-void residual urine (PVR)≥50ml, and without prostatic enlargement≥20ml. The lesions were brain 8, spinal cord 42, peripheral nervous system 40, and others 3. After initial assessment, patients were step wisely administered for 12 weeks (placebo for 2 weeks, naftopidil 25 mg/day for 2 weeks, naftopidil 50 mg/day for 2 weeks, and naftopidil 75 mg/day for 6 weeks). At the end of both placebo and 6 weeks' naftopidil 75 mg/day, they were assessed by IPSS, King's Health Questionnaire (KHQ), uroflowmetry (UFM), PVR, filling cystometry (CMG), and pressure-flow study (PFS). Detrusor overactivity (DO) was judged after this study although it was not included in the protocol. DO is defined by ICS definition as the following; an urodynamic observation characterized by involuntary detrusor contractions with amplitude greater than 15cmH^2O during the filling phase.

Results

Among all patients, PdetQmax in PFS significantly decreased ($p<0.05$), and Qmax and Qave in UFM significantly increased ($p<0.05$). Both male and female also showed significant decrease in PVR, %PVR, and all of the IPSS score. At the end of placebo, the most bothersome complaint was storage symptoms in 46 patients, voiding symptoms in 33 patients, post-micturition symptoms in 12 patients, and no symptoms in 2 patients. Among 93 patients with NLUTD, 18 showed DO (+), 69 showed DO (-), and 6 undefined. Sum of IPSS total 7 symptoms and sum of IPSS 3 voiding symptoms significantly decreased after naftopidil comparing with those before naftopidil in both DO(+) and DO(-) groups. In DO(-) group, sum of IPSS 3 storage symptoms and KHQ-QOL 3 items significantly decreased, however, either of them did not change after naftopidi comparing with those before naftopidil in DO(+)group (Table).

Table: The effect of naftopidil on IPSS and KHQ in DO(+) and DO(-) groups

		N	IPSS total 7		IPSS voiding 3		IPSS storage 3		KHQ-QOL 3	
Difference between those before and after naftopidil	DO(-)	69	-6.43	**	-3.67	**	-1.62	**	-4.88	**
	DO(+)	18	-4.53	*	-3.35	**	-0.59	ns	-1.53	ns

*, ** :$p<0.05$ and $p<0.01$ compared between the 2 groups (before and after and naftopidil).
IPSS voiding 3 consisted of IPSS Q3,5,6. IPSS storage 3 consisted of IPSS Q2,4,7.

Interpretation of results

Storage symptoms are more bothersome than voiding symptoms even in NLUTD patients with difficult emptying. Naftopidil has a significant effect on both symptoms (voiding and storage) and urodynamic parameters in NLUTD patients. Detrusor overactivity is one of predicting factors for the efficacy of naftopidil on storage symptoms and KHQ-QOL in NLUTD patients.

Concluding message

Alpha-1 D/A receptor antagonist naftopidil has a significant effect even on storage symptoms in NLUTD patients without DO.

References

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