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PREDICTIVE FACTORS FOR THE EFFECT OF ALPHA1- ADRENOCEPTOR ANTAGONIST ON SUBJECTIVE AND OBJECTIVE PARAMETERS IN PATIENTS WITH NEUROGENIC LOWER URINARY TRACT DYSFUNCTION: SPECIAL FOCUS ON ALPHA1-D/A ADRENOCEPTOR ANTAGONIST NAFTOPIDIL.

Hypothesis / aims of study

here is few clinical evidence that alpha-adrenoceptor (AR) antagonists including naftopidil are effective in neurogenic lower urinary tract dysfunction (NLUTD) patients. We investigated the effect of alpha 1-D/A adrenoceptor antagonist naftopidil on neurogenic lower urinary tract dysfunction (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 stepwisely 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, uroflowmetry (UFM), PVR, and pressure-flow study (PFS).

Results

Among all patients, PdetQmax in PFS significantly decreased($p<0.05$), and Qmax and Qave in UFM significantly increased ($p<0.05$). Analysis of data for male and for female also showed significant decrease in PVR, %PVR, and All of the IPSS score. Results regarding PVR and bladder contractility as predicting factors for the efficacy of naftopidil were summarized in the table (table). The degree of improvement of voided volume, PVR(%), and IPSS in patients with PVR<300 ml was significantly greater than those in patients with PVR≥300ml. The degree of improvement of PdetQmax in PFS, and IPSS in patients with bladder contractility was significantly greater than those in patients without bladder contractility.

Table. The difference of urodynamic parameters and IPSS before and after naftopidil

	N	PFS		UFM				PVR		IPSS	
		PdetQmax (cmH2O)		Voided volume(ml)		Qmax (ml/s)		PVR(%)		Total	
Total	93	-4.00* (15.00)		24.19 ±13.40		1.58* ±0.60		-12.90** ±2.62		-5.83** ±0.70	
PVR <300ml	78	-4.50* (14.00)	NS	38.05* ±14.83	#	1.92** ±0.68	NS	-15.69** ±2.93	#	-6.64** ±0.76	##
PVR ≥300ml	15	-3.0 (28.00)		-47.89 ±24.13		-0.16 ±1.00		1.60 ±4.10		-1.67 ±1.30	
Bladder contractility(+)	61	-5.50** (14.00)	#	16.28 ±14.53	NS	1.76* ±0.71	NS	-11.65** ±2.45	NS	-6.66** ±0.79	##
Bladder contractility(-)	23	7.50 (25.50)		16.72 ±27.46		0.32 ±1.17		-9.40* ±6.03		-2.46* ±1.06	

Data are expressed as median and quartile deviation for PFS, and mean± s.e. for UFM, PVR and IPSS

*, ** :$p<0.05$ and $p<0.01$ compared between the 2 groups (before and after naftopidil), respectively.

#,## :$p<0.05$ and $p<0.01$ compared between the 2 groups (PVR<300ml and ≥300ml), respectively.

#,## :$p<0.05$ and $p<0.01$ compared between the 2 groups (Bladder contractility(+), and bladder contractility(-)), respectively.

Interpretation of results

NLUTD patients may greatly benefit from naftopidil on both symptoms and urodynamic parameters. PVR<300ml and bladder contractility may be predictive factors for the efficacy of naftopidil on NLUTD patients.

Concluding message

Alpha-1 D/A receptor antagonist naftopidil has a significant effect on voiding symptoms and objective parameters for voiding in NLUTD patients with difficult emptying.

References
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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 University of Yamanashi and followed the Declaration of Helsinki Informed consent was obtained from the patients.