

## CLINICAL AND URODYNAMIC PARAMETERS ASSOCIATED WITH DETRUSOR OVERACTIVITY IN PATIENTS WITH BENIGN PROSTATIC HYPERPLASIA/LOW URINARY TRACT SYMPTOMS

### Hypothesis / aims of study

Although detrusor overactivity (DOA) is not uncommon in men with BPH, the exact mechanism is unknown. Theories explaining DOA in men with BPH/LUTS focus on myogenic, epithelial, neurogenic, or combined origins. However clinical evidences are still in debates. This study is to determine clinical and urodynamic parameters associated with detrusor overactivity (DOA) in patients with benign prostatic hyperplasia/low urinary tract symptoms (BPH/LUTS).

### Study design, materials and methods

During January 2003-July 2008, the 332 patients with BPH/LUTS who underwent urodynamic investigation were enrolled. The subjects were divided into two groups according to presence of DOA in filling cystometry study and possible parameters were compared between groups such as age, bladder outlet obstruction index (BOOI), International prostate symptom (IPSS) score, maximal flowrate (Qmax), post-void residual urine volume (PVR), prostate volume, maximal voided volume (MVV).

### Results

Of the 332 subjects, 117 (35%) had DOA. The mean age of these DOA(+) group was significantly older ( $p=0.013$ ) and MVV was significantly larger in DOA(+) ( $p<0.001$ ) than in DOA(-) group respectively. The IPSS score, prostate size, Qmax, PVR and BOOI were not significantly different between groups. However, in a sub-group analysis for DOA(+) subjects with obvious evidence of BOO(defined as BOOI >20), DOA was independently associated with BOOI. Logistic regression analysis with all clinical and urodynamic parameters revealed that only age ( $p < 0.09$ ) and MVV on voiding diary ( $p < 0.01$ ) and BOOI were independently associated with DOA.

	DOA(+) n=117	DOA (-) n=215	P-value
Age (years)	69.8	65.8	<b>0.013</b>
IPSS (total score)	19.7	21	0.406
IPSS (subscore of obstruction)	12.1	11.7	0.614
IPSS (subscore of irritation)	8.2	7.9	0.824
Prostate volume (mL)	40.2	40.9	0.947
Qmax	11.4	9	0.054
PVR (mL)	67	74	0.604
MVV (mL)	216.4	344.7	<b>&lt;0.001</b>
BOOI	27.5	20.2	0.079

### Interpretation of results

In our results, the age is the only risk factor of DOA in patients with BPH/LUTS. Although MVV was significantly smaller in DOA(+) group, it might be due to the presence of DOA. The other factors such as prostate volume IPSS score are not related to the presence of DOA in patients with BPH/LUTS. DOA was more frequent in patients who have higher obstructive index.

### Concluding message

In our study, one third of BPH/LUTS patients had DOA in UDS. The age is the only factor which independently associated to DOA in patients with BPH/LUTS.

<b>Specify source of funding or grant</b>	none
<b>Is this a clinical trial?</b>	Yes
<b>Is this study registered in a public clinical trials registry?</b>	No
<b>What were the subjects in the study?</b>	HUMAN
<b>Was this study approved by an ethics committee?</b>	Yes
<b>Specify Name of Ethics Committee</b>	Korea University Anam Hospital IRB
<b>Was the Declaration of Helsinki followed?</b>	Yes
<b>Was informed consent obtained from the patients?</b>	Yes