

CHARACTERISTICS OF MALE PATIENTS WITH HIGH FLOW BLADDER OUTLET OBSTRUCTION

Hypothesis / aims of study

Bladder outlet obstruction (BOO) is a major cause of lower urinary tract symptoms (LUTS) in males. Symptomatic slow urinary stream associating with a low uroflow rate as shown in the uroflowmetry is the typical clinical finding for patients with BOO. Nevertheless, some patients with BOO have good uroflow rate. We are interested in the differences of characteristics between those BOO patient with high flow rate and low flow rate.

Study design, materials and methods

We retrospectively recruited male patients who received urodynamic pressure-flow study and were identified having BOO, which was defined as bladder outlet obstruction index (BOOI) >40. BOO patients were categorized into high and low flow rate with the cut-off value of 15ml/sec maximal flow rate (Q_{max}) in free uroflowmetry. All patients received transabdominal ultrasonography to determine prostate size, intra-vesical prostatic protrusion (IPP) and detrusor wall thickness (DWT). International Prostate Symptom Score (IPSS) and Overactive Bladder Symptom Score (OABSS) were used for symptom evaluation.

Results

Table 1 Symptom Evaluation

		High flow BOO (n=26)	Low flow BOO (n=65)	P value
IPSS	Storage-subscore	8.4±3.1	10.3±3.1	0.03
	Voiding-subscore	5.8±5.2	8.5±4.5	0.04
	Total	14.2±5.9	18.3±6.3	0.02
OABSS	Frequency	0.8±0.5	1.2±0.5	0.03
	Nocturia	2.2±0.8	2.5±0.7	0.10
	Urgency	3.4±1.4	4.0±1.1	0.09
	Urge-incontinence	2.3±1.6	2.6±1.6	0.48
	Total	8.8±3.1	10.3±2.7	0.06

Table 2 Parameters in Free uroflowmetry

		High flow BOO	Low flow BOO	P value
Uroflowmetry	Volume(ml)	234.0±62.9	155.6±65.2	<0.01
	Q _{max} (ml/s)	19.9±3.9	8.3±2.8	<0.01
	Q _{mean} (ml/s)	9.8±2.4	3.9±1.5	<0.01

Table 3. Parameters in Pressure-Flow studies

		High flow BOO	Low flow BOO	P value
Filling phase	First desire (ml)	129.2±56.9	108.3±59.0	0.19
	Capacity(ml)	204.1±70.6	165.1±87.0	0.04
Voiding phase	Q _{max} (ml/s)	7.7±2.4	6.1±2.6	0.02

	PdetQmax(cmH2O)	61.4±14.0	68.9±18.9	0.22
	PVR(ml)	73.5±83.3	90.4±91.4	0.54

Interpretation of results

205 male patients with BOO were enrolled in this study. Of them 36 patients (17.6%) were diagnosed as high flow BOO. Patients with high flow BOO were younger than those with low flow BOO (mean age 64.6 vs 72.9 years old, p=0.02). The mean PSA level of high flow group was not different from that of low flow group (3.0 ± 2.4 vs 3.6 ± 2.8, p=0.45). Prostatic size were 48.7±20.2ml and 53.0±21.2ml, respectively (p=0.44). Intra-vesical prostatic protrusion (IPP) were 0.7±0.4 and 0.9±0.4cm, respectively (p=0.19). Detrusor wall thickness (DWT) showed 0.3±0.1 and 0.3±0.1cm, respectively (p=0.79). Patients with low flow BOO had higher total IPSS score, voiding-subscore and storage subscore. Low flow BOO patients also had more urinary frequency as evaluated with OABSS.(Table 1, 2, and 3).

Concluding message

Male patients with high flow BOO tend to be younger, to have larger bladder capacities and to have less severe storage and voiding symptoms than those with low flow BOO. However, PSA level, prostatic size, intravesical prostatic protrusion, detrusor wall thickness, detrusor pressure at maximum flow rate and post-void residual urine did not show significant difference between two groups.

Disclosures

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