URODYNAMIC CHARACTERISTICS OF PATIENTS WITH LOWER URINARY TRACT SYMPTOMS AND SMALL PROSTATE

Hypothesis / aims of study
The relevance of prostate size in the pathophysiology of lower urinary tract symptoms (LUTS) is controversial. In this study, we evaluated the relevance of urodynamic parameters according to the size of prostate.

Study design, materials and methods
174 patients with LUTS were prospectively enrolled. All patients were given informed consent. At the time of their visit, 3 day voiding diary, Transrectal Ultrasonography, Maximal flow rate, Post-void residual urine (PVR), International Prostate Symptom Score (IPSS) and Urodynamic parameters (PdetMax, PdetQmax, MBC, bladder outlet obstruction index (BOOI=PdetQmax-2Qmax), and presence of detrusor overactivity (DOA) were evaluated. According to the prostate volume, patients with less than 30g were classified as the Group A and the patients with more than 30g were classified as the Group B. The urodynamic parameters were analyzed according to prostate size using t-test and correlation analysis.

Results
The mean prostate volume of the Group A and Group B were 25.3ml(20.2-30) and 56.7ml(30.1-128.0), respectively. BOOI showed statistical significance between group A and B (p=0.035), and showed weak but significant correlation between the prostate volume and BOOI (p<0.001, correlation coefficient=0.287). In case of DOA, no statistically significant difference was observed between the groups, but revealed a positive correlationship with both prostate volume (p=0.047, correlation coefficient=0.151) and BOOI (p<0.001, correlation coefficient=0.347).

Interpretation of results
Greater prostate volume showed higher BOOI with increased frequency of DOA, therefore prostate size is related to the not only bladder outlet obstruction but also presence of detrusor overactivity.

Concluding message
As small prostate volume is less likely to be related to the presence of DOA, there might be correlation between the prostate volume and presence of detrusor overactivity.

Qmax; maximal flow rate, PVR; post void residual volume, MBC; minimal voided volume, DOA; detrusor overactivity

<table>
<thead>
<tr>
<th>Patient with prostate volume&lt; 30g</th>
<th>Patient with prostate volume ≥ 30g</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qmax(ml/s)</td>
<td>11.00±6.98</td>
<td>10.39±5.47</td>
</tr>
<tr>
<td>PVR</td>
<td>61.56±69.20</td>
<td>73.33±81.72</td>
</tr>
<tr>
<td>Voided volume</td>
<td>221.92±177.60</td>
<td>193.88±105.80</td>
</tr>
<tr>
<td>Number of voids</td>
<td>10.60±2.64</td>
<td>10.69±4.31</td>
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<tr>
<td>Number of nocturnal voids</td>
<td>2.00±1.12</td>
<td>2.20±1.12</td>
</tr>
<tr>
<td>MIBC in voiding diary</td>
<td>108.25±63.02</td>
<td>89.33±55.99</td>
</tr>
<tr>
<td>MBC in voiding diary</td>
<td>319.00±97.17</td>
<td>335.56±218.14</td>
</tr>
<tr>
<td>IPSS</td>
<td>21.00±8.32</td>
<td>18.09±8.35</td>
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<tr>
<td>BOOI</td>
<td>18.62±28.07</td>
<td>34.47±35.47</td>
</tr>
<tr>
<td>DOA (%)</td>
<td>19.2%</td>
<td>33.8%</td>
</tr>
</tbody>
</table>

IPSS; international prostate symptom score, BOOI;bladder outlet obstruction, DOA; detrusor overactivity

Specify source of funding or grant
none

Is this a clinical trial?
Yes

Is this study registered in a public clinical trials registry?
No

Is this a Randomised Controlled Trial (RCT)?
No

What were the subjects in the study?
HUMAN

Was this study approved by an ethics committee?
Yes

Specify Name of Ethics Committee
Korea hospital Institutional review of board

Was the Declaration of Helsinki followed?
Yes

Was informed consent obtained from the patients?
Yes