THE ROLE OF NON-INVASIVE PRESSURE FLOW STUDY IN HIGHLY SIMPTOMATIC/BOTHERED MEN WITH BLADDER OUTLET OBSTRUCTION

Hypothesis / aims of study
The gold standard to evaluate BOO is the invasive pressure-flow study. The aim of this study is to evaluate non-invasive pressure flow test to predict BOO before surgery

Study design, materials and methods
Between January 2008 and February 2009, we prospectively evaluated men with lower urinary tract symptoms (IPSS ≥18 and QoL > 3) scheduled for complete urodynamic study (UDS). Patients with urinary infection, neurological problems, bladder stones and indwelling catheters were excluded. Patients were underwent non-invasive pressure flow test (Medplus CT 3000 – Dynamed – Sao Paulo- Brazil), just before initiate the UDS. Non-invasive pressure-flow test (NIPF) was performed with a cuff around penile body that allowed registering the pressure necessary to stop urinary flow (MCCP - maximum closure cuff pressure). The MCCP and maximum flow rate were plotted in the NewCastle´s Nomogram and classified as: 1) bladder outlet obstruction (BOO) or 2) non obstructed. The UDS was performed following the International Continence Society good urodynamic practice. The pressure-flow study was performed with a 4 F catheter in stand position. The pressure-flow results were plotted in Schafer’s Nomogram and patients were classified from I – VI. Patients were considered as having BOO when classified as Schafer > III.

Results
We evaluated 50 men with mean age of 65 +/- 8 years, IPSS ranging from 24 to 35 and Quality of life score was higher than 4 in all patients. Table 1 shows the results form NIPF and invasive pressure-flow study.

Interpretation of results
Out of the 17 patients classified as non-obstructed by the non invasive study, 7 patients presented detrusor underactivity, 1 patient had BOO and 9 were non-obstructed with normal pressure-flow study by UDS. In the evaluation of BOO, the non-invasive pressure-flow demonstrated a sensitivity of 87.8% and a specificity of 80.9%

Table 1. Comparison of Invasive and non-invasive pressure flow study on diagnosis of BOO.

<table>
<thead>
<tr>
<th></th>
<th>Bladder Outlet Obstruction</th>
<th>Non Obstructed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invasive pressure flow study</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>Noninvasive pressure flow</td>
<td>33</td>
<td>17</td>
</tr>
</tbody>
</table>

Concluding message
The non-invasive pressure flow study demonstrated a sensitivity of 87.8 % and a specificity of 80.9% in diagnosis of significant BOO. It should be considered as an important tool in the diagnosis, treatment and follow up of men with voiding symptoms.