INTERNATIONAL PROSTATE SYMPTOM SCORE – IPSS - AUA AS DISCRIMINAT SCALE IN 400 MALE PATIENTS WITH LOWER URINARY TRACT SYMPTOMS (LUTS)

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ABSTRACT

Objective: This study analyzed the total symptom score, irritative and obstructive domains of IPSS questions regarding quality of life and the urodynamic diagnosis in 400 men with LUTS.

Materials and Methods: Four hundred consecutive male patients were prospectively enrolled after being submitted to full urodynamic evaluation and IPSS. Obstructed and non-obstructed patients were compared regarding the symptoms score and quality of life. Results were assessed through Wilcoxon, ANOVA and Student-t tests.

Results: 80.2% were diagnosed as urodynamically obstructed of which 42.4% presented detrusor instability in the filling phase. In obstructed patients there were no statistical difference concerning obstructive or irritative questions from IPSS (p = 0.50). It was not possible either to predict which patients presented detrusor instability based on the questionnaire (p = 0.65). Out of seventy-nine cases unobstructed (19.8%), 65.4% revealed detrusor instability. These cases could not be distinguished from all obstructed men based on the clinical questions measured by IPSS (p = 0.87). Obstructive and irritative questions did not present different indexes than obstructed cases (p = 0.63). Subjective quality of life index did not discriminate obstruction nor it could predict detrusor instability in both groups.

Conclusion: Clinical symptoms and quality of life index measured by the IPSS as well as its obstructive and irritative domains do not have discriminating power to predict the presence of infravesical obstruction in males with LUTS, demanding objective tools to demonstrate obstruction.

Key words: urinary symptoms; urodynamics; bladder outlet obstruction; prostate; prostatism


INTRODUCTION

Benign prostatic hyperplasia is a frequent histological finding in the elderly population. In the meanwhile symptomatic voiding disturbances related to infravesical obstruction are a much less frequent complaint (1). Notably surgical therapy is intended to relief the symptoms and complaints in case there is urodynamically proven urethral obstruction (2).

Clinical questionnaires allow homogeneity and comparable final results after different therapies. They were also historically designed with an initial intent to avoid invasive and costly evaluations justifying the division of urinary symptoms into irritative and obstructive ones (3-6).

Nevertheless in the clinical setting patients present a myriad of urinary complaints all together with no clear division between obstructive and irrita-
tive urinary symptoms becoming extremely difficult to diagnose those with infravesical obstruction from those with detrusor instability.

The morphologic evaluation of the prostate based on volume, presence of median lobe, flow rate, bladder residual volume or urinary symptoms seems to be inadequate due to the wide variability and the same clinical prevalence despite the presence or absence of infravesical obstruction (7,8) requiring special attention not to the prostate morphology but to the clinical picture and bothersome symptoms related to voiding difficulties (2).

In the present study the International Prostate Symptoms Score (IPSS) (3) diagnostic specificity was questioned as a valid tool to determine the presence of infravesical obstruction.

PATIENTS AND METHODS

Four hundred consecutive enrolled male patients were prospectively studied with urodynamic evaluation to assess the significance of the IPSS - AUA. All patients filled out the IPSS with no interferences before going to urodynamic evaluation.

The urodynamic study was repeated 3 times, in order to allow reproducibility and smoother curves according to ICS (9) recommendations. It consisted of repeated pressure-flow and cystometry in a standing position with saline infusions at 37°C.

Infravesical obstruction could be documented in 321 cases (80.2%) of which 136 men (42.4%) revealed detrusor instability on filling cystometry. On the other hand 52 (19.8%) of the 79 non-obstructed cases showed detrusor instability (Table-1).

Total symptoms score X Quality of life

There was no statistical correlation between quality of life and total symptoms score in all 400 cases (p = 0.14), although the total score demonstrated a trend to higher interference in the subjective perception of quality of life (Y = 0.0467 + 2.63). Paradoxically some patients (32 cases) showed higher total symptoms score but low perception of bother (Figure-1).

Table 1 – Prevalence of detrusor instability in 400 urodynamically evaluated men.

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstructed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total: 321</td>
<td>With instability (42.4%)</td>
<td>136</td>
</tr>
<tr>
<td></td>
<td>Without instability (57.6%)</td>
<td>185</td>
</tr>
<tr>
<td>Non-obstructed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total: 79</td>
<td>With instability (65.8%)</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>Without instability (34.1%)</td>
<td>27</td>
</tr>
</tbody>
</table>

Quality of life index was also compared to the irritative and obstructive sum in the obstructed and non-obstructed groups.

Wilcoxon, ANOVA and Student-t test were used as necessary with a 5% statistical significance.

RESULTS

Whole Group

The median age of the whole group was 58.2 years (range: 44 – 77 years-old).

The average obstructive symptoms was 8.05 ± 3.2 (maximum possible = 20) while the irritative symptoms showed an average 9.26 ± 4.1 (maximum possible = 15) for the studied population. This finding revealed an important contribution of urgency symptoms as a bother perception of the voiding dysfunction in males seeking medical care.

Urodynamic findings

Infravesical obstruction could be documented in 321 cases (80.2%) of which 136 men (42.4%) revealed detrusor instability on filling cystometry. On the other hand 52 (19.8%) of the 79 non-obstructed cases showed detrusor instability (Table-1).
The division of the questions domains into obstructive and irritative questions demonstrated non-significant statistical relationship to the observed quality of life (Figures-2 and 3).

**Total symptoms score in obstructed and non-obstructed groups**

The total symptoms score did not differ between obstructed and non-obstructed cases \((p = 0.87)\) and the same observation was set when only patients with detrusor instability in both groups were compared \((p = 0.53)\). (Table-2)

**Irritative symptom score in the obstructed and non-obstructed groups**

The irritative symptoms score in obstructed and non-obstructed patients did not show any statistical significance \((p = 0.18)\).

When only the obstructive symptoms were analyzed in patients presenting detrusor instability no

### Table 2 – Characteristic of the studied population according to the urodynamic criteria in 400 men with voiding disturbances evaluated by IPSS - AUA.

<table>
<thead>
<tr>
<th>Diagnostic</th>
<th>Irritative</th>
<th>Obstructive</th>
<th>Total</th>
<th>Quality of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstructed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total: 321</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With instability</td>
<td>8.6 ± 2.4</td>
<td>11.9 ± 1.8</td>
<td>20.5 ± 2.9</td>
<td>3.34 ± 0.4</td>
</tr>
<tr>
<td>Without instability</td>
<td>7.6 ± 1.8</td>
<td>12 ± 0.9</td>
<td>19.6 ±</td>
<td>3.20 ± 0.3</td>
</tr>
<tr>
<td>Non-obstructed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total: 79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With instability</td>
<td>8.0 ± 2.2</td>
<td>9.2 ± 2.7</td>
<td>17.2 ± 3.2</td>
<td>3.40 ± 0.4</td>
</tr>
<tr>
<td>Without instability</td>
<td>8.0 ± 2.4</td>
<td>8.2 ± 1.2</td>
<td>16.2 ± 2.6</td>
<td>3.80 ± 0.5</td>
</tr>
</tbody>
</table>
statistical difference could be noticed ($p = 0.32$).
(Table-2)

**Obstructive symptom score in the obstructed and non-obstructed groups**

The irritative symptoms score in the obstructed and non-obstructed patients did not show any statistical significance ($p = 0.15$).

When only the irritative domain of symptoms was analyzed in patients presenting detrusor instability no statistical difference could be reached ($p = 0.23$). (Table-2)

**Quality of life in obstructed and non-obstructed groups**

The quality of life in obstructed and non-obstructed males was not statistically different ($p = 0.23$). Unstable patients did not differ from the stable ones ($p = 0.17$) but the unobstructed group showed lower total symptom score ($p = 0.07$). (Table-2)

**Obstructed X Non-obstructed - value of questions domains**

The irritative and obstructive questions domains from obstructed and non-obstructed groups were compared to check if the nature of the questions could diagnose the presence of infravesical obstruction.

There was no statistical difference between question domains in both groups or between 2 domains to each individual urodynamic classified group (Table-3).

**Quality of life in obstructed and non-obstructed groups related to the urinary questions domains**

The obstructed group did not show any statistical correlation between the subjective impression of quality of life and the questions from the obstructive domain ($p = 0.77$). The same was observed for the questions of the irritative domain ($p = 0.67$).

Neither obstructive questions ($p = 0.75$) nor irritative ones ($p = 0.88$) reached statistical correlation in non-obstructed cases. In none of the groups, when exclusively cases with instability were analyzed, it was possible to reach statistical significance (Table-3).

**DISCUSSION**

Voiding dysfunction was historically related to prostate enlargement (BPH). Since BPH is highly prevalent in any given male population from the fifti
The gold standard for bladder relief is transurethral resection of the prostate, but this can only be accomplished if obstruction is clearly present (2,12).

The subjective clinical success of prostate relief is directly related to pre-operative evaluation of infravesical obstruction frequently observing poor outcome in those not obstructed improperly diagnosed as infravesical obstruction due to bladder failure or bladder instability comprehending 30 to 42% of males in prospective series (2,12).

The clinical practice of electing patients to surgical treatment based on clinical evaluation was strengthened by the acceptance of standard urological questionnaires allowing homogeneity and objectivity to multiple treatment options (4). This practice was immediately accepted and new questionnaires were conceived and assumed as better than others, some with 24 items (13) demanding understanding

**Table 3** – Statistical comparison among multiple studied variables in 400 men with and without urodynamic proven obstruction.

<table>
<thead>
<tr>
<th>Group</th>
<th>Symptoms</th>
<th>Detrusor Instability</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstructed</td>
<td>Obstructive symptoms x Quality of Life</td>
<td>With instability</td>
<td>0.27</td>
</tr>
<tr>
<td>Obstructed</td>
<td>Obstructive symptoms x Quality of Life</td>
<td>Without instability</td>
<td>0.32</td>
</tr>
<tr>
<td>Obstructed</td>
<td>Irritative symptoms x Quality of Life</td>
<td>With instability</td>
<td>0.33</td>
</tr>
<tr>
<td>Obstructed</td>
<td>Irritative symptoms x Quality of Life</td>
<td>Without instability</td>
<td>0.38</td>
</tr>
<tr>
<td>Not-obstructed</td>
<td>Obstructive symptoms x Quality of Life</td>
<td>With instability</td>
<td>0.42</td>
</tr>
<tr>
<td>Not-obstructed</td>
<td>Obstructive symptoms x Quality of Life</td>
<td>Without instability</td>
<td>0.44</td>
</tr>
<tr>
<td>Not-obstructed</td>
<td>Irritative symptoms x Quality of Life</td>
<td>With instability</td>
<td>0.02</td>
</tr>
<tr>
<td>Not-obstructed</td>
<td>Irritative symptoms x Quality of Life</td>
<td>Without instability</td>
<td>0.14</td>
</tr>
</tbody>
</table>

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**Figure 3** – Correlation between irritative symptoms and quality of life in 400 men.

\[ y = 0.03332x + 3.158 \]

*Many cases have the same graphic spot*
from the patients but increasing the difficulty for widespread usage.

The modern approach for the treatment of LUTS highly recommends the subjective perception form the patient as well as the presence of obstruction.

The American Urological Association compiled all the questionnaires and consensually validated its own (3). They added a question concerning the subjective impression from the patient if he had to live forever with that urological picture.

Our series did not show any correlation to the urodynamic findings besides observing scattering pattern of subjective impression from the urological complaints into the same urodynamic group.

Other authors pointed out the lack of specificity of the clinical complaint as well as the questionnaires when they found similar picture in women with urological complaint originating the improper name “female prostatism” (14).

Non-invasive objective parameters such as free-flow rate (15), residual (16) and prostate volume (17) were not accurate.

Critical studies using urodynamic criteria failed to identify obstruction through clinical complaints or the presence of detrusor instability (18).

The division of the AUA symptoms score into irritative (questions 1, 3, 5 and 6) and obstructive (questions 2, 4 and 7) domains failed to identify obstruction or worsening of the quality of life.

We had also demonstrated that the symptoms cannot distinguish obstructed from non-obstructed cases.

Symptoms score is an easy and valuable tool to homogenize and compare clinical studies but it should not be used as a diagnostic instrument for surgical intervention since it does not show discriminative value.

CONCLUSIONS

International Prostate Symptom Score (IPSS) validated by the AUA should not be used to diagnose infravesical obstruction. The symptoms grouped according to the questionnaire did not distinguish obstructed from non-obstructed patients neither allowed previewing the presence of bladder instability on both groups. Obstructive and irritative symptoms should no longer be used since they do not state the existence or absence of infravesical obstruction in males. It was also possible to confirm that the clinical picture has a mild correlation with subjectively measured quality of life.

REFERENCES


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