WHAT IS THE CAUSE OF THE POOR IMPROVEMENT CASES OF INTERNATIONAL PROSTATE SYMPTOM SCORE AFTER SILODOSIN ADMINISTRATION IN LUTS WITH BPH?

~PROSPECTIVE INVESTIGATION USING A PRESSURE-FLOW STUDY~

Aims of study

Silodosin is a third-generation alpha 1A-adrenoceptor-selective antagonist. This agent has been reported to relieve subjective symptoms in patients with benign prostatic hyperplasia (BPH). However, there are some patients that the improvement of i-PSS was poor and the efficacy of treatment of BPH was thought to be insufficient.

In this study, using pressure-flow study (PFS), we assessed the objective efficacy of silodosin and evaluated the poor cases of the improvement of I-PSS, compared with the good responders.

Study design

A total of 104 patients with BPH were enrolled in this study. The patients received silodosin 8 mg/day for 4 weeks. Before and after drug administration, the I-PSS, the quality of life (QOL), OABSS was conducted to evaluate subjective symptoms and QOL. On PFS, we assessed the first desire to void (FDV), maximum cystometric capacity (MCC) and occurrence of uninhibited detrusor contraction as parameters of storage function. Maximum flow rate (Qmax), detrusor pressure at Qmax (Pdet Qmax), and postvoid residual urine volume (PRV) were assessed as parameters of voiding function.

We divided them into two groups according to the degree of improvement in IPSS, good responder group and poor responder group, and assessed the difference of objective parameters based on PFS between the two groups.

In this study, we defined a good responder as a patient with 25% or more improvement of I-PSS, and a poor responder as a patient with less than 25%.

Results

The number and mean age of the patients and mean prostate volume were 73 cases, 69.1 years and 43.0 mL in the good responder group, 31 cases, 68.7 years and 45.7 mL in the poor responder group. Mean I-PSS, QOL, and OABSS dropped from 17.4 to 9.3 points (p<0.001), from 4.7 to 2.8 points (p<0.001), and from 6.1 to 4.0 (p<0.001), in the good responder group, from 18.8 to 16.4 points (p=0.19), from 4.8 to 3.7 points (p<0.001), and from 6.0 to 5.2 (p=0.56), in the poor responder group. (Table)

On PFS, in both good responder and poor responder groups, Qmax and Pdet Qmax significantly improved, demonstrating that silodosin relieved bladder outlet obstruction (Table). On the other hand, parameters of the storage function on PFS significantly improved in good responder group, and not statistically improved in poor responder group, especially uninhibited detrusor contraction disappeared in 24 of 35 patients (68.6%) after administration in the good responder group, disappeared in only 6 of 20 patients (30.0%) in the poor responder group (p=0.001).

Interpretation of results

α1 adrenoceptor antagonists relieve voiding symptoms by decreasing the smooth muscle tone of the prostate and bladder neck, however, the mechanism underlying the relief of storage symptoms is not clear.

In this study, we believe there is a relationship between storage function and the poor response in improving subjective symptoms.

Concluding message

In conclusion, Silodosin will relieve subjective symptoms by improving both voiding and storage function in BPH patients with lower urinary tract symptoms.

In the poor-responders to silodosin treatment, insufficient improvement in storage function will be responsible to the poor response in IPSS, despite improvements in voiding function and bladder outlet obstruction.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Before</th>
<th>After</th>
<th>P-value</th>
<th>Before</th>
<th>After</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCC (ml)</td>
<td>254</td>
<td>282</td>
<td>0.04</td>
<td>224</td>
<td>259</td>
<td>0.15</td>
</tr>
<tr>
<td>Qmax (ml/sec)</td>
<td>7.8</td>
<td>10.4</td>
<td>&lt;0.001</td>
<td>6.3</td>
<td>9</td>
<td>0.006</td>
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<tr>
<td>PdetQmax (cmH2O)</td>
<td>73</td>
<td>52</td>
<td>&lt;0.001</td>
<td>78</td>
<td>57</td>
<td>0.003</td>
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<tr>
<td>PRV (ml)</td>
<td>54</td>
<td>25</td>
<td>&lt;0.001</td>
<td>79</td>
<td>41</td>
<td>0.01</td>
</tr>
<tr>
<td>BOOI</td>
<td>57.3</td>
<td>31.2</td>
<td>&lt;0.001</td>
<td>65.4</td>
<td>39</td>
<td>0.001</td>
</tr>
<tr>
<td>DO</td>
<td>35</td>
<td>11</td>
<td>DO disappeared in 68.6%</td>
<td>20</td>
<td>14</td>
<td>DO disappeared in 30.0%</td>
</tr>
</tbody>
</table>

Table: The change of subjective and objective parameters between two groups