

## NOVEL VISUAL ANALOGUE SCALE (VAS) QUESTIONNAIRE TO ASSESS QUALITY OF LIFE (QOL) SPECIFIC TO EACH SYMPTOM OF THE INTERNATIONAL PROSTATE SYMPTOM SCORE (IPSS)

### Hypothesis / aims of study

Every symptom of International Prostate Symptom Score (IPSS) has impact on quality of life (QOL). Recently the visual analogue scale (VAS) is widely accepted to evaluate QOL quantitatively. We developed a VAS questionnaire (VAS-QOL-questionnaire, shown in Figure 1) in order to assess the bother (or satisfaction) specific to each of the 7 items of IPSS on the patient's QOL using a VAS measure. As the severity of symptom score alone does not necessarily reflect the degree to which patients are bothered by lower urinary tract symptoms (LUTS), patient satisfaction may not directly correlate with an improvement of the most severe IPSS score. The objective of this study was to assess the impact of bother specific to each item of IPSS on the patient's QOL, evaluated with concomitant use of the IPSS with the VAS-QOL-questionnaire.

### Study design, materials and methods

246 consecutive male patients with the chief complaint of LUTS between 46 and 92 years old visiting our institution were asked to fill out both a conventional IPSS questionnaire and a VAS-QOL-questionnaire (Figure 1) in order to assess bother (or satisfaction) specific to each of the 7 items of IPSS on the patient's QOL. The VAS used in this study was a 10-cm line ranging from delighted to terrible in order to ask bother (or satisfaction) specific to each item of the 7 questions in the conventional IPSS. Stepwise logistic regression analysis was used in an attempt to define the best predictor of IPSS-QOL score among each score (0-5) of the 7 items of the conventional IPSS questionnaire as well as among IPSS-QOL score and each VAS measure (0-10mm) of 7 items of the VAS-QOL questionnaire. In addition, we evaluated the correlation between the change in 7 items of the VAS-QOL questionnaire and the improvement in IPSS-QOL score after administration of alpha-blocker.

### Results

An item with the longest VAS measure assessed by the VAS-QOL questionnaire matched to the chief complaint in 169/246 (69%) of the total patients; on the contrary, the chief complaint failed to match to an item with the most severe score among the 7 items of IPSS questionnaires in 104/246 (42%) of the total patients ( $p < 0.01$ ). Using the VAS-QOL questionnaire, multiple stepwise linear regression analysis revealed that the VAS measure for nocturia (F-value=40.1,  $p < 0.0001$ ) was the best predictor of IPSS-QOL score, followed by incomplete emptying (F-value=19.8,  $p < 0.0001$ ). Among the total 14 items including both 7 items of IPSS and 7 items of VAS measure to define the best predictor of IPSS-QOL, multiple stepwise linear regression analysis revealed that the best predictor was the VAS measure for nocturia assessed by the VAS-QOL questionnaire (F-value=13.3,  $p = 0.0003$ ), followed by the VAS measure for frequency (F-value= 12.8,  $p = 0.003$ ) and the score for incomplete emptying (F-value=6.3,  $p = 0.01$ ). In analysis of changes after the treatment with alpha-blocker, the improvement of VAS measure in chief complaint correlated better ( $r = 0.68$ ,  $p < 0.0001$ ) to improvement of IPSS-QOL score than the change of IPSS in chief complaint ( $p = 0.0005$ ).

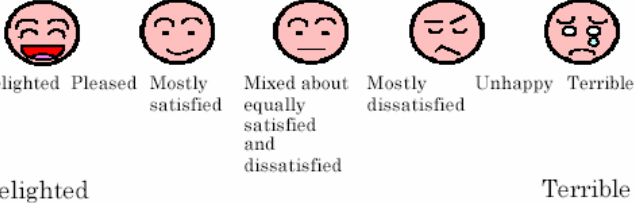
### Interpretation of results

Using VAS, assessment of bother or satisfaction specific to each item of the IPSS questionnaire has a significant impact on identifying the patient's chief complaint as well as on the patient's specific QOL. Assessment of severity of each symptom score of the IPSS questionnaire alone likely fails to identify the patient's chief complaint.

### Concluding message


Our study supported concomitant use of both conventional IPSS and novel VAS-QOL questionnaires. Treatment of targeting on a specific symptom with the most impact on patient's QOL, evaluated with the VAS-QOL questionnaire, will likely improve total QOL of a patient with LUTS.

**Visual Analog Scale for QOL Questionnaire for Bother about a Symptom**

<p>Example</p>	 <p>Delighted Pleased Mostly satisfied Mixed about equally satisfied and dissatisfied Mostly dissatisfied Unhappy Terrible</p> <p>Delighted _____ Terrible</p> <p>X</p> <p>If you have an urinary symptom, how would you rate your bother? Please mark on the linear scale above in accordance with the satisfaction with each urinary symptom. For example: Unhappy (as shown above)</p>
<p>1. Incomplete emptying :A sensation of not emptying your bladder completely after you finished urinating.</p>	<p>Delighted _____ Terrible</p>
<p>2. Frequency :To urinate again less than two hours after you finished urinating.</p>	<p>Delighted _____ Terrible</p>
<p>3. Intermittency :To stop and start again several times when you urinate.</p>	<p>Delighted _____ Terrible</p>
<p>4. Urgency :Difficulty to postpone urination.</p>	<p>Delighted _____ Terrible</p>
<p>5. Weak stream :A weak urinary stream.</p>	<p>Delighted _____ Terrible</p>
<p>6. Hesitancy :Strain to begin urination.</p>	<p>Delighted _____ Terrible</p>
<p>7. Nocturia :Frequent voiding at night.</p>	<p>Delighted _____ Terrible</p>

**Visual Analog Scale for QOL due to Total Urinary Symptoms**

If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that? Please mark on the linear scale below.

<p>QOL due to your total urinary condition</p>	 <p>Delighted _____ Terrible</p>
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1. J Urol 148: 1549-1557, 1992
2. J Urol 157: 885-889, 1997
3. J Urol 153: 669-673, 1995