

## SYMPTOM ASSESSMENT TOOL FOR OVERACTIVE BLADDER SYNDROME - OVERACTIVE BLADDER SYMPTOM SCORE (OABSS)

### Hypothesis / aims of study

We attempted to develop a symptom assessment tool for overactive bladder syndrome (OAB).

### Study design, materials and methods

#### *Developing Overactive Bladder Symptom Score (OABSS)*

Four question items, daytime frequency, nocturia, urgency and urgency incontinence, were included in the questionnaire according to the definition of OAB. Weighing of the symptom score was determined by secondary analysis of the stored epidemiology database. A pre-test was undertaken to confirm understandability of the questionnaire, relevance of the questions to the complaints, and possible overlooking of any related symptoms.

#### *Validation Study of OABSS*

The validation study consecutively enrolled the patients who visited our hospitals and were diagnosed with OAB. They answered the questionnaire on enrolment. A subgroup repeated the questionnaire after a no treatment period of 2 to 4 weeks. Another subgroup answered again 4 to 8 weeks after pharmacological treatment that mostly used propiverine. The treated patients selected one of the 4 efficacy grades (none, slight, moderate, and a lot) after therapy based on their global impression. Also collected were patients with lower urinary tract symptoms (LUTS) suggestive of benign prostatic hyperplasia (BPH), patients with other diseases causing LUTS, and patients not complaining of LUTS (control). Quality of life was assessed by the King's Health Questionnaire (KHQ). The difference in score distribution and score values was examined by the Mantel-Haenszel test and Wilcoxon rank test, respectively. Correlation among scores was analyzed by Spearman's  $r$ . Reproducibility was assessed by weighted kappa analysis. A  $P$  value less than 0.05 was considered significant.

### Results

#### *Developing Overactive Bladder Symptom Score (OABSS)*

In the stored epidemiology database, the maximum proportion of perceiving influence among the subjects with the symptom was approximately 20%, 30%, 50% and 50%, for daytime frequency, nocturia, urgency, and urgency incontinence, respectively. Thus, we assumed the relative weight of the highest score would be 2:3:5:5. After small revisions based on the pre-test, the questionnaire for OABSS was finalized (table).

#### *Validation Study of OABSS*

A total of 180 patients were collected, including patients with OAB (N=83), BPH (N=28), other diseases with LUTS (N=35), and controls (N=34). The mean age of these groups ranged from 66.2 to 68.4 years (N.S.). Distribution of urgency and urgency incontinence scores differed significantly between OAB and the other 3. The aggregated score (OABSS) was significantly higher for OAB patients (8.36) compared with BPH (4.22), other diseases with LUTS (4.77), and the control (1.82). Among the OAB patients, each symptom score positively correlated with OABSS (Spearman's  $r$  0.26 to 0.78). OABSS had moderate correlation with the QOL scores of KHQ domains ( $r = 0.20$  to  $0.49$ ). The score was reproducible as demonstrated by high weighted kappa coefficients in 31 OAB patients: 0.804 to 1.0 for each score and 0.861 for OABSS. The sensitivity test in 34 patients demonstrated the highest standard response mean (SRM: mean/SD) for OABSS (1.52), followed by urgency (1.09) and urgency incontinence score (0.95). Scores measuring urinary frequency or QOL had lower SRM (0.12 to 0.65). OABSS was reduced by therapy and the magnitude of reduction was consistent with the global impression by patients on efficacy ranging from none (0.50) to a lot (6.00).

### Interpretation of results

OABSS is a valid symptom questionnaire to assess the symptom complex of OAB patients. It can integrate 4 symptoms into a single score and is useful for clinical practice.

Concluding message

A new symptom questionnaire for OAB syndrome (OABSS) was developed and validated.

Overactive Bladder Symptom Score (OABSS)

Please circle the score that applies best to your urinary conditions during the last week.

	Score	Frequency
How many times do you typically urinate from waking in the morning until sleeping at night?	0	7 or less
	1	8 ~ 14
	2	15 or more
How many times do you typically wake up to urinate from sleeping at night until waking in the morning?	0	0
	1	1
	2	2
How often do you have a sudden desire to urinate, which is difficult to defer?	3	3 or more
	0	not at all
	1	less than once a week
	2	once a week or more
	3	about once a day
How often do you leak urine, because you cannot defer the sudden desire to urinate?	4	2 ~ 4 times a day
	5	5 times a day or more
	0	not at all
	1	less than once a week
	2	once a week or more
	3	about once a day
	4	2 ~ 4 times a day
	5	5 times a day or more

OABSS (sum of scores) =