

A SYMPTOM QUESTIONNAIRE TO COLLECTIVELY ASSESS LOWER URINARY TRACT SYMPTOMS - COMPREHENSIVE LOWER URINARY TRACT SYMPTOM SCORE (CLUTSS)

Hypothesis / aims of study

Standardization of terminology of lower urinary tract function reported in 2002 defined lower urinary tract symptoms (LUTSs) in details. We examined patients visiting us for all LUTSs listed in the report 1) to select important LUTSs for screening, and 2) to characterize symptomatic profile of lower urinary tract diseases.

Study design, materials and methods

Questionnaire: The questionnaire contained 52 questions on LUTS, a single question on global influence on daily life by LUTSs, and questions on age, sex and major co-morbid diseases. The questionnaire covered the full range of 27 LUTSs defined by standardization report: daytime frequency, nocturia, urgency, stress incontinence, urgency incontinence, mixed incontinence, nocturnal enuresis, continuous incontinence, other types of incontinence, increased bladder sensation, reduced bladder sensation, absence of bladder sensation, non-specific bladder sensation, slow stream, splitting or spraying of stream, intermittent stream, hesitancy, straining at starting urination, straining during urination, terminal dribble, feeling of incomplete emptying, post micturition dribble, feeling of a lump (for women only), bladder pain, urethral pain, vulval pain, scrotal pain (for men only), perineal pain, pelvic pain. Questions on voiding frequency were answered in actual number. Other LUTSs were addressed for frequency (score: description, 0: no, 1: rarely, 2: sometimes, 3: often) and severity (score: description, 0: no, 1: slightly, 2: moderately, 3: greatly).

Data collection and analysis: The questionnaire was administered to consecutive patients visiting authors' hospitals regardless reasons for consultation. Symptoms were regarded as less important and excluded from the questionnaire, 1) when they had a positive rate less than 10% in symptomatic patients, 2) when they appeared in symptomatic subjects no more often than subjectively asymptomatic subjects ($p > 0.05$ in Chi square test), or 3) when they correlated with other symptom(s) (Spearman's $r > 0.5$) that were complained of more often thus apparently more important. Scores in frequency and severity were examined for symmetry of score distribution by kappa analysis. Significant asymmetry ($p < 0.01$) suggests the question on frequency cannot substitute for the question on severity for the symptom. To characterize symptom profile of diseases, patients of a specific disease were recruited to obtain a minimal sample size of 20.

Results

Selecting important symptoms for the questionnaire: Collected subjects included 361 controls, 144 patients with benign prostatic hyperplasia (BPH), 101 overactive bladder (OAB), 68 bacterial cystitis, 24 prostatic cancer, 22 urethritis, 22 chronic prostatitis, 9 acute prostatitis, 13 interstitial cystitis, 19 stress incontinence (SUI), 17 underactive bladder. Ten symptoms (nocturnal enuresis, other types of incontinence, absence of bladder sensation, straining at starting urination, terminal dribble, feeling of a lump, vulval pain, scrotal pain, perineal pain, pelvic pain) were excluded because of any of exclusion reasons. Storage symptoms except increased bladder sensation retained symmetry between responses in frequency and severity. Other symptoms showed asymmetry for frequency and severity. However, questions on frequency only were included in the questionnaire to minimize patient burden (Table).

Characterization of symptomatic profile of common lower urinary tract diseases: The final sample size was 216 for BPH, 180 OAB, 91 bacterial cystitis, 24 urethritis, 47 chronic prostatitis, 22 acute prostatitis, 37 interstitial cystitis, 61 SUI, and 33 underactive bladder. Deletion of unimportant symptoms appeared not to raise significant clinical concerns. Symptom profiles of BPH, OAB and SUI were drawn as examples (Figure).

Interpretation of results

CLUTSS is a questionnaire to assess all important LUTSs and may be useful for visualizing LUTS in a patient or a disease/condition.

Concluding message

A symptom questionnaire for comprehensive assessment of LUTS was developed. Further study to validate the questionnaire is mandatory.

Comprehensive Lower Urinary Tract Symptom Score (CLUTSS)

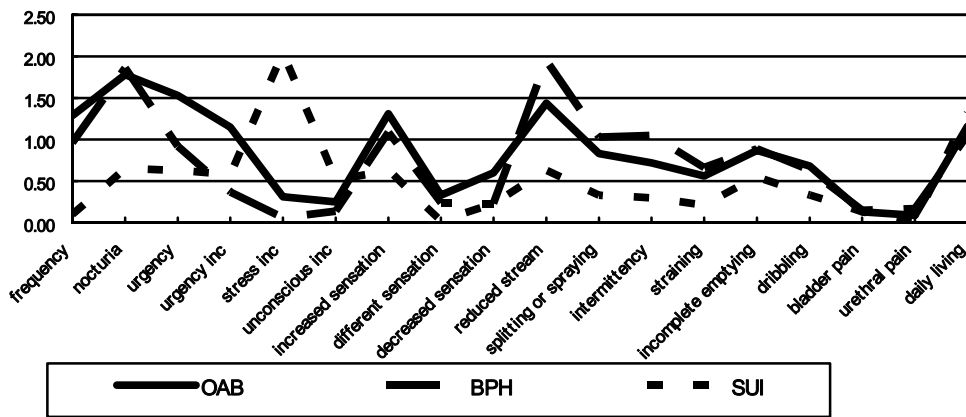
Please circle the score that applies best to your urinary condition during the last week.

How many times do you typically urinate from waking in the morning until sleeping at night?	~ 7	8 ~ 9	10 ~ 14	15 ~
	0	1	2	3
How many times do you typically urinate from sleeping at night until waking in the morning?	0	1	2	3 ~
	0	1	2	3

How often do you have the symptom?	no	rarely	sometimes	always
A sudden desire to urinate, which is difficult to hold	0	1	2	3
Urinary leakage, because you cannot hold the sudden desire to urinate	0	1	2	3
Urinary leakage, when you cough, sneeze or strain	0	1	2	3
Urinary leakage, while you do not notice it	0	1	2	3

A desire to urinate, when you have a small amount of urine in the bladder	0	1	2	3
Sensation different from a desire to urinate at bladder filling	0	1	2	3
Difficulty to feel bladder filling	0	1	2	3
Weakness of urinary stream	0	1	2	3
Splitting or spraying of urinary stream	0	1	2	3
Intermitting of urinary stream	0	1	2	3
Delay in starting urinary stream	0	1	2	3
Need to strain to keep urinary stream	0	1	2	3
Feeling of incomplete emptying bladder after you urinate	0	1	2	3
Leakage of urine after you finish urinating	0	1	2	3
Pain in the bladder or lower abdomen	0	1	2	3
Pain in the urethra	0	1	2	3

	no	slightly	moderately	greatly
How much limitation in daily living do you feel because of bladder problems?	0	1	2	3
How much mental discomfort do you feel because of bladder problems?	0	1	2	3



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DISCLOSURES: NONE

HUMAN SUBJECTS: This study did not need ethical approval because there is no ethical concern but followed the Declaration of Helsinki Informed consent was obtained from the patients.