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## **NATION-WIDE EPIDEMIOLOGIC SURVEY ON LOWER URINARY TRACT SYMPTOMS IN JAPAN**

### **Aims of Study**

No reliable epidemiologic population-based investigation of urinary symptoms has so far been performed in Japan. We conducted an investigation in nation-wide random sample population to determine the prevalence of overactive bladder and to obtain more reliable epidemiologic information on urinary symptoms in Japan.

### **Methods**

In November 2002, self-administered questionnaires pertaining to micturition were mailed to 10,096 men and women aged 40 years or older who were family members of randomly selected households. The households were selected by two-stage random sampling stratified by geographic area and city population size from the Japanese resident registry across the country. They were asked to complete the questionnaire by him- or her-self and return it to us.

### **Results**

After excluding 35 incomplete responses, 4,570 responses were available for the analysis (response rate 45.3%). The population consisted of 2104 men and 2385 women aged 60.6 years on average (range 40-100). The prevalence of symptoms and symptom syndrome was displayed in the table. Urinary frequency ( $\geq 8$  micturitions/ $\geq 10$  micturitions per day) was reported by 67%/38%, while nocturia ( $\geq 1$  micturition/ $\geq 3$  micturitions) was reported by 69%/13%. The proportion of cases experiencing at least one episode of symptoms per week was 20% for decreased urine stream, 18% for feeling of residual urine, 2% for bladder pain, 14% for urinary urgency, 9% for urge incontinence, and 8% for stress incontinence. The prevalence of overactive bladder (OAB) was 12% if it was defined as a clinical condition having urinary frequency ( $\geq 8$  micturitions per day) and at least one episode of urinary urgency per week. The respondents identified as having OAB were subdivided into cases of OAB with urge incontinence (wet OAB) or without it (dry OAB): the proportion of each of the subgroups was 6%. The prevalence of OAB was comparable to those known in western countries. The number of sufferers of OAB and wet OAB was estimated as 8 million and 4 million in the whole nation aged 40. Fifteen percent of respondents said that their daily activities were affected by urinary symptoms. Negative impact due to lower urinary tract symptoms was felt by 15% of responders and moderate to severe impact by 5%. Among those individuals with negative impact only 5% visited physicians. The response to question "acceptable cost for the treatment per month" was 2000-3000 yen (ca. 2~30 euros) in 50%, followed by 1~2,000 yen in 25% and 5,000 yen in 10%.

### **Conclusions**

Reliable and detailed epidemiologic information on various lower urinary symptoms was obtained. About 15% of individuals aged more than 40 feel influence by urinary symptoms. The prevalence of over active bladder was 12%, with dry OAB and wet OAB 6% each.

Gender	Men			Women			Total		
	40-59	≥60	total	40-59	≥60	Total	40-59	≥60	Total
Frequency ≥ 8/day	60.6	75.5	68.3	60.2	70.2	65.3	60.4	72.8	66.8
Frequency ≥ 10/day	33.3	50.0	41.9	29.3	39.6	34.5	31.2	44.6	38.0
Nocturia ≥ 1/night	54.2	87.9	71.8	49.8	83.1	67.0	51.9	85.4	69.2
Nocturia ≥ 3/night	5.7	26.3	16.5	3.5	17.0	10.5	4.5	21.4	13.3
Urgency ≥ 1/week	8.1	22.8	15.8	6.8	17.9	12.5	7.4	20.3	14.0
Urgency ≥ 1/day	3.5	13.5	8.7	3.5	11.1	7.4	3.5	12.2	8.0
Urge inc. ≥ 1/week	1.8	12.5	7.4	4.7	15.3	10.1	3.4	14.0	8.8
Urge inc. ≥ 1/day	0.9	8.0	4.6	1.7	9.7	5.8	1.3	8.9	5.2
Stress inc. ≥ 1/week	1.1	4.7	3.0	10.4	14.6	12.6	6.1	9.8	8.0
Stress inc. ≥ 1/day	0.5	2.6	1.6	4.2	7.9	6.1	2.5	5.4	4.0
Week stream ≥ 1/week	25.6	47.5	36.9	11.6	24.4	18.1	18.2	35.5	27.0
Week stream ≥ 1/day	18.3	36.8	27.8	6.6	18.3	12.5	12.0	27.2	19.8
Bladder pain ≥ 1/week	1.6	3.2	2.4	1.9	2.3	2.1	1.8	2.7	2.3
Bladder pain ≥ 1/day	0.5	1.7	1.1	0.9	1.0	1.0	0.7	1.4	1.0
OAB*	6.6	21.5	14.2	5.2	16.3	10.8	5.9	18.8	12.4
wet OAB*	1.3	10.3	5.9	2.4	11.4	6.9	1.9	10.9	6.4

\* OAB is defined by the presence of two symptoms: urgency ≥ 1/week and frequency ≥ 8/day. Wet OAB requires urge incontinence in addition to the OAB definition.