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2Acupuncture Treatment of Urinary Tract Infection

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ABSTRACT
LUTS are a common disorder among communitydwelling men and women aged 40 years or older. However, there are few individuals who seek treatment for their LUTS by acupuncture. More information and public education seem to be needed to increase the number of patients with LUTS who seek acupuncture treatment.

KEYWORDS
Lower urinary tract symptoms; Urinary incontinence; Community-based study; Seeking treatment.

1. Introduction

Lower urinary tract symptoms (LUTS), such as increased frequency, urgency, urinary incontinence, weak stream, interruption and residual feeling are common in elderly people1). In a previous report, however, only a quarter of the women with urinary incontinence had sought treatment2). Our previous study showed that acupuncture relieved urinary incontinence, decreased urinary frequency and urgency caused by detrusor overactivity as well as improved urodynamic measurements such as bladder capacity3,4). Although acupuncture is used for the treatment of LUTS, it is not common for individuals suffering from LUTS to seek acupuncture as a treatment option. The aim of this study is to reveal the prevalence of LUTS in community-dwelling people aged 40 years or older in Japan and whether they seek treatment by acupuncture.

2. Materials and Methods

This study was designed to reveal the prevalence of LUTS in community-dwelling people aged 40 years or older in Yakumo Town, a rural town in southern Hokkaido Prefecture in Japan, and whether they would think of seeking help for their LUTS. In August 2003 a total of 864 men and women (308 males, mean age 63.2 years and 556 females, mean age 60.5 years) received mass screening program in the town. A total of 793 examinees (91.8%) aged 40 to 88 years (285 males, mean age 63.2 years and 508 females, mean age 60.6 years) participated in the study and completed the selfadministered questionnaire using the International Prostate Symptom Score (IPSS), the IPSS quality of life index (IPSS QOL index), the International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF) and an additional question on self-perception for the treatment of LUTS. Written informed consent was obtained from all participants. The participants were classified into five groups according to age, as follows: 40 to 49, 50 to 59, 60 to 69, 70 to 79 and 80 years or older. Figure 1 shows the age

distribution. The IPSS is the same questionnaire as that of the American Urological Association symptom index (See Appendix 1)5). The score for each symptom of the IPSS including 4 voiding symptoms (incomplete emptying, intermittency, weak stream and hesitancy) and 3 storage symptoms (frequency, urgency and nocturia) ranges from 0 to 5 points. A total IPSS score (0 to 35) was obtained by summing up and subjects were categorized into 3 groups for severity as mild (0 to 7), moderate (8 to 19) or severe (20 to 35). Assessment of quality of life (QOL) by urinary symptoms ranged from 0 (delighted) to 6 (terrible) (See Appendix 1). Because there are no items concerning urinary incontinence on the IPSS, the ICIQSF was used to assess the severity of urinary incontinence. Scores on the ICIQ-SF including 3 items (frequency of urine leakage, amount of urine leakage and interference with everyday life by urine leakage) ranged from 0 to 21 (See Appendix 2). There was also a self-diagnostic item concerning urine leakage (not scored)6). Self-perception of seeking treatment for LUTS was asked by the additional question with 6 alternatives: 1-no problems for LUTS, 2-some problems for LUTS without help-seeking, 3-taking commercially available medicine, 4-seeking consultations with a general practitioner in the community, 5-seeking consultations with an urological practitioner, 6-seeking treatment by acupuncture.

All values are shown as the mean value and standard error. The one-way ANOVA was used for statistical analyses. A p-value of less than 0.05 was defined as statistically significant.

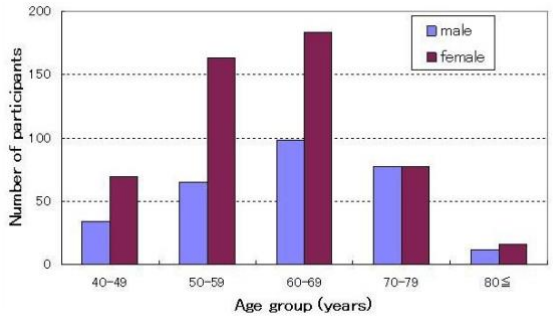

Figure 1. Number of participants in each age group

3. Results

The total IPSS score increased significantly with age in men ($p<0.001$) but not in women ($p=0.12$) (Figure 2, A). The IPSS QOL index increased with age in men ($p=0.04$) but not in women ($p=0.29$) (Figure 2, B). The percentage of the IPSS severity categories showed an age related trend in men but not in women (Figure 3, A and B). The rate of participants with moderate to severe symptom categories in each age distribution group was 2.9%, 10.8%, 22.5%, 24.7% and 54.6% in men, and 5.8%, 10.4%, 14.8%, 10.4% and 12.6% in women, respectively. Of all the subjects 14.2% (19.3% in men, 11.4% in women) had moderate to severe LUTS based on the total IPSS score.

There was a significant linear relationship between total IPSS score and IPSS QOL index both in men ($R=0.590$, $p<0.001$) and in women ($R=0.573$, $p<0.001$). In addition, 15.3% (19.6% in men, 12.8% in women) felt mostly unsatisfied, unhappy or terrible concerning quality of life due to LUTS based on the IPSS QOL index.

In men the storage and voiding symptoms increased significantly with age ($p=0.017$ and $p<0.001$, respectively), but not in women ($p=0.12$ and 0.13, respectively) (Figure 4, A and B). In a comparison of subtotal symptom score the storage symptom score was higher than the voiding symptom score in women in all age groups. Additionally the storage symptom scores in women in the 40 to 49 and 50 to 59 age groups were higher than in the same age groups in men.

The prevalence rate of urinary incontinence in each age distribution group was 2.9%, 6.2%, 17.3%, 18.2% and 18.2% in men, and 26.1%, 26.4%, 32.8%, 32.5% and 43.8% in women, respectively. The ICIQ-SF score did not increase significantly with age in men or women (p=0.11 and 0.06, respectively) (Figure 5). Of all the participants 24.1% (13.3% in men, 30.1% in women) had had at least one episode of urinary incontinence within the previous month. Table 1 shows the subtypes IPSS; International prostate symptom score, IPSS QOL index; IPSS quality of life index.

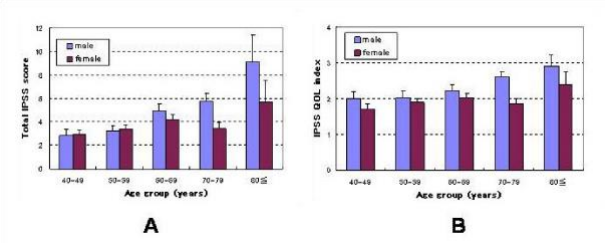

Figure 2. Total IPSS symptom score (A) and IPSS QOL index (B) in each age group. Asterisk indicates significant increase with age (**: p<0.01, *: p<0.05).

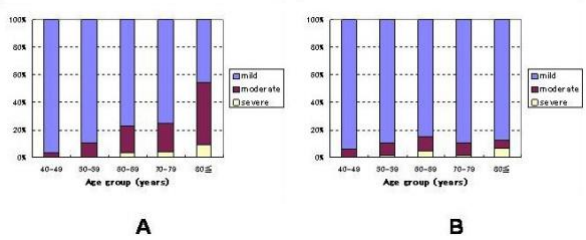

Figure 3. Percentage distribution of the three categories of severity of LUTS in each age group (A: Male, B: Female).

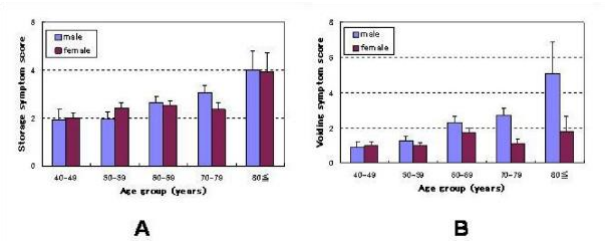

Figure 4. IPSS storage symptom score (A) and voiding symptom score (B) in each age group. Asterisk indicates significant increase with age (**: p<0.01, *: p<0.05).

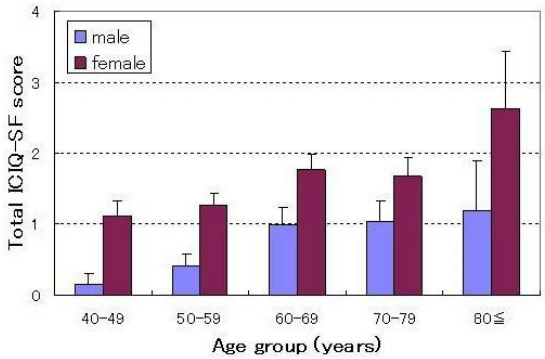

Figure 5. Total ICIQ-SF symptom score in each age group.

Table 1. Distribution of subtypes of urinary incontinence (A: Male, B: Female).

A						B					
age	urge	mixed	stress	others	continent		urge	mixed	stress	others	continent
40-49	0 (0%)	0 (0%)	0 (0%)	1 (2.9%)	33 (97.1%)	40-49	1 (1.4%)	3 (4.3%)	13 (18.8%)	1 (1.4%)	51 (73.9%)
50-59	2 (3.1%)	0 (0%)	0 (0%)	2 (3.1%)	61 (93.8%)	50-59	11 (6.7%)	3 (1.8%)	29 (17.8%)	0 (0%)	120 (73.6%)
60-69	9 (9.2%)	2 (2.0%)	1 (1.0%)	5 (5.1%)	81 (82.7%)	60-69	11 (6.0%)	10 (5.5%)	38 (20.8%)	1 (0.5%)	123 (67.2%)
70-79	10 (13.0%)	1 (1.3%)	0 (0%)	3 (3.9%)	63 (81.8%)	70-79	9 (11.7%)	4 (5.2%)	12 (15.6%)	0 (0%)	52 (67.5%)
80≦	2 (18.2%)	0 (0%)	0 (0%)	0 (0%)	9 (81.8%)	80≦	4 (25.0%)	1 (6.3%)	2 (12.5%)	0 (0%)	9 (56.3%)
all	23 (8.1%)	3 (1.1%)	1 (0.4%)	11 (3.9%)	247 (86.7%)	all	36 (7.1%)	21 (4.1%)	94 (18.5%)	2 (0.4%)	355 (69.9%)

Table 2. Help seeking for LUTS.

	male	female	all
no problems for LUTS	160 (58.2%)	290 (57.1%)	456 (57.5%)
some problems for LUTS without help seeking	30 (10.5%)	65 (12.8%)	95 (12.0%)
taking commercially available medicine	1 (0.4%)	12 (2.4%)	13 (1.6%)
seeking consultations with general practitioner in the community	20 (7.0%)	43 (8.5%)	63 (7.9%)
seeking consultations with urological practitioner	66 (23.2%)	95 (18.7%)	161 (20.3%)
seeking treatment by acupuncture	2 (0.7%)	3 (0.6%)	5 (0.6%)

In women stress incontinence was the most common type excluding those who were aged over 80 years. The prevalence of urge incontinence including mixed (urge + stress) incontinence increased with aging in both men and women.

Table 2 shows the results concerning help seeking for LUTS. Of all the subjects 28.2% (30.2% in men, 27.2% in women) had sought consultation or treatment by a general practitioner or urologist. On the other hand, 57.5% (58.2% in men, 57.1% in women) did not recognize their condition as problems and 12.0% (10.5% in men, 12.8% in women) felt that their conditions were some problems without help seeking. Only 0.6% considered seeking treatment by acupuncture, a rate lower than that for taking commercially available medicine (1.6%) for LUTS.

4. Discussion

Outpatient-based and population-based studies have been performed to clarify the prevalence of LUTS in both elderly men and women1,2). Diokno et al reported that the prevalences of difficult bladder emptying symptoms (voiding symptoms), irritative bladder symptoms (storage symptoms) and urinary incontinence among American elderly people were 22.1%, 11.8% and 18.9% in men, and 10.8%, 17.4% and 37.7% in women, respectively1). Araki et al reported that a significant increase with age was found in the storage symptom score but not in the voiding symptom score in men and women, and the prevalence of urinary incontinence in women (40%) was higher than that in men (24%) among outpatients of 40 years or older without underlying disease causing micturition disorder in Japan7). In our study these results are in accordance with those reported by Araki et al: the subtotal score of voiding symptoms in men was higher than that in women of the same age groups over 50 years; the subtotal score of storage symptoms in women was higher than that in men of the 40 to 49 and the 50 to 59 age groups; the prevalence of urinary incontinence in women was higher than that in men in all age groups.

In regard to the severity of LUTS using the IPSS, Kakizaki et al reported that the ratios of moderate to severe symptoms in the 50 to 59, 60 to 69 and 70 to 79 year old age groups were 52%, 72% and 80% in men, and 27%, 36% and 55% in women, respectively, among those who had attended the public lectures by urologists as a public service of the 88 th Annual Meeting of the Japanese Urological Association (June 2000)8). The ratios of moderate to severe symptoms reported by Kakizaki et al were higher than those of the age-matched data in our study. The difference in the ratio of moderate to severe symptoms might reflect differences in sample design. In the study by Kakizaki et al, the sample attending at the public lectures included those with benign prostate hyperplasia and female urinary incontinence while our sample comprised participants of a health

screening program among a community-dwelling population. Those who attended the lectures presented by the Japanese Urological Association might have been more interested in LUTS than the subjects in our study. These findings agree with those reported by Masumori et al who pointed out that the prevalence of moderate to severe symptoms on the IPSS in outpatients having LUTS was significantly greater than that of participants in the community-based study9). Therefore, there must be a relation concerning the difference between the prevalence of symptom severities and the self-perception for LUTS of the participants.

The relationships between severity of LUTS and QOL in elderly men and women have been reported. Masumori et al supposed that voiding symptoms might affect QOL in Japanese elderly men9). Okamura et al found that urinary incontinence was associated with QOL in elderly women in Japan10). In our study total IPSS score correlated significantly with IPSS QOL index both in men and women. LUTS are certainly a common disorder and contain many factors to impair QOL in both elderly men and women.

The relationship between the prevalence of urinary incontinence and the ratio of those who seek treatment has been argued. Burgio et al reported that 58.4% of healthy premenopausal women aged 40 to 50 years had experienced urinary incontinence, however, only 25.5% of all the subjects had sought treatment2). In our study, however, 28.2% of all the subjects sought consultation with a general practitioner or urologist, while 14.2% of the subjects had moderate to severe LUTS or 24.1% of the subjects had had at least one episode of urinary incontinence (Table 2). Our results are not in line with those reported by Burgio et al. The reasons for the higher percentage of those seeking help despite the lower prevalence of LUTS might be associated with selfperception for health-care. In the study by Burgio et al a sample was collected by telephone interview, while our sample comprised participants of a health screening program.

Ueda et al reported that 25% of community-dwelling people aged 40 years or older in Shiga Prefecture in Japan recognized urinary incontinence as a disease and 63% regarded their condition was embarrassing from a health professional11). Similarly, 25% of the subjects felt to seek consultations or treatment in our study, while 69% did not consider their conditions as problems or hesitated to seek treatment. These results suggest that there are no regional differences the self-perception for LUTS in Japan. In addition, Ueda et al reported only 3% of community-dwelling people with urinary incontinence had ever consulted doctors or health care professionals. Hagglund et al also reported 14% of women with urinary incontinence had consulted the health care service about their disorder12). Thus, a higher selfperception for LUTS is not necessarily connected with a higher percentage of consultation for the condition.

Hagglund et al found help seeking was associated with lower QOL and urge incontinence in women12).Burgio et al suggested seeking treatment was certainly associated with the frequency and volume of urine loss, but more information and more attention to urinary incontinence by health care providers would be needed for subjects to seek treatment2). Ueda et al also suggested community education on urinary incontinence would be needed to increase the number of urinary incontinence patients who receive treatment11).

In our previous study acupuncture might be beneficial in the treatment of LUTS, in particular urgency, increased urinary frequency and urinary incontinence3,4). However, this study revealed that there were very few people who sought treatment for LUTS by acupuncture (0.6%). This result seems to be due to lack of information on acupuncture for LUTS as a treatment option in spite of the similar self-perceptions for LUTS. Wolters et al indicated social influences including advice from others or the media were more important factors in the decision to seek medical care than symptom severity13). Thus the study by Wolters et al supports the suggestion that more information and public education are necessary to increase the number of patients with LUTS who seek acupuncture treatment. In contrast, Durgan et al reported that embarrassment or lack of awareness of treatment options were not significant barriers to discussing urinary incontinence, but the perceptions that urinary incontinence was not a big problem and a normal part of aging were the main reasons

why patients with urinary incontinence had not sought help14). Further studies are needed to clarify the reasons why only a few people seek treatment by acupuncture for LUTS.

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