

## Clinical Report 1 (Japan)

### *Acupuncture for Overactive Bladder*

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### Introduction

Lower urinary tract symptoms (LUTS), including increased urinary frequency, urgency, urinary incontinence, urinary weak stream, interruption and residual feeling after micturition, are common problems in elderly people<sup>1)</sup>. Our previous study showed that acupuncture relieved urinary incontinence, increased urinary frequency, urgency and nocturnal enuresis<sup>2-4)</sup>.

In 2002, the International Continence Society (ICS) identified “overactive bladder” (OAB) as a symptom syndrome defined as urgent, with or without urge incontinence, and usually with frequency and nocturia<sup>5)</sup>.

This report presents a successful clinical case study of an individual with overactive bladder treated by acupuncture using the current definition of the symptoms associated with OAB.

### Case Report

This case study is based on an 81 year-old man who underwent acupuncture treatment for refractory symptoms of increased urinary frequency (voiding 8 or more times), nocturia (awakening 3 or more times at night to void), urgency and urge incontinence due to benign prostate hyperplasia. He had previously failed alpha-1 blocker and underwent acupuncture treatment.

Acupuncture was performed using a disposable stainless steel needle (0.3mm in diameter, 60mm in length, SEIRIN Kasei, Shimizu, Japan) with the patient in the prone position. Acupuncture needles were inserted into the bilateral Zhongliao points (BL-33, as standardized by the World Health Organization), on the skin of the third posterior sacral foramina in the cranial direction (Fig. 1). The needle was inserted into each side of the foramina sufficiently deep for its tip to be placed close to the sacral

periosteum (50 to 60 mm), and then the bilateral needles were maneuvered up and down manually for 10 minutes. The treatment was repeated once a week. To assess the symptoms before and after acupuncture, the International Prostate Symptom Score (IPSS) and IPSS quality of life index (IPSS QOL index) were used. The IPSS questionnaire is used by the American Urological Association symptom index<sup>6)</sup>. The score of each symptom of the IPSS, including 4 voiding symptoms (incomplete emptying, intermittency, weak stream and hesitancy) and 3 storage symptoms (frequency, urgency and nocturia), ranged from 0 to 5 points. A total IPSS score was obtained by summing up each score (0 to 35) and categorized into 3 groups of the severity as mild (0 to 7), moderate (8 to 19) or severe (20 to 35). Assessment of quality of life (QOL) by urinary symptoms was ranged from 0 (delighted) to 6 (terrible). Additionally, urinary frequency and voided volume were estimated from a frequency volume chart (FVC).

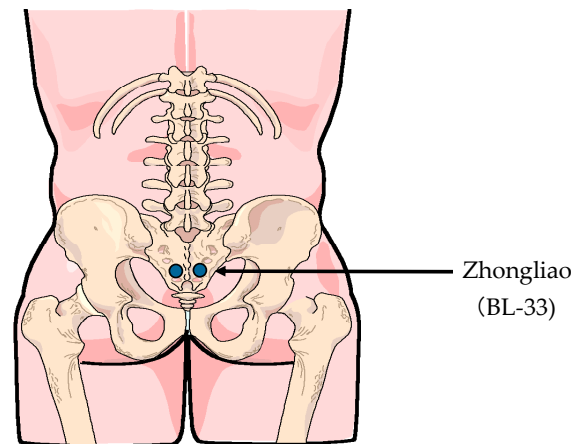


Fig. 1: Schematic diagram showing acupuncture points in bilateral Zhongliao (BL-33)

Baseline FVC showed a maximum voided volume of 120 ml with postponing micturition as long as possible. Additionally, assessment of quality of life where urinary symptoms were terrible, were assessed by the self-administered questionnaire using International Prostate Symptom Score quality of life index (IPSS QOL index) before acupuncture. After the 4th treatment a maximum voided volume was 200 ml with tolerable to postpone voiding written in FVC, however, assessment of QOL was unchanged. After the 8th treatment a maximum voided volume was 330 ml and assessment of QOL was satisfied. Urgency and urge incontinence disappeared after the 8th acupuncture treatment (see Table 1).

	Before acupuncture	After 4th acupuncture	After 8th acupuncture
daytime frequency	8	8	6
nocturia	3	3	1
maximum voided volume (ml)	120	200	330
IPSS	17 (moderate)	16 (moderate)	5 (mild)
QOL index	6 (severe)	6 (severe)	1 (satisfied)

Table 1: IPSS: International Prostate Symptom Score, QOL index: quality of life index

### Comment

Overactive bladder (OAB) is a symptom complex that includes urinary urgency with or without urge; incontinence, urinary frequency and nocturia, identified by the International Continence Society (ICS) in 2002 (Fig 2)<sup>5)</sup>. OAB is an empiric diagnosis used as the basis for initial management after assessing lower urinary tract symptoms (LUTS), physical findings, urinalysis, and the other indicated evaluations. In addition, OAB is defined based on

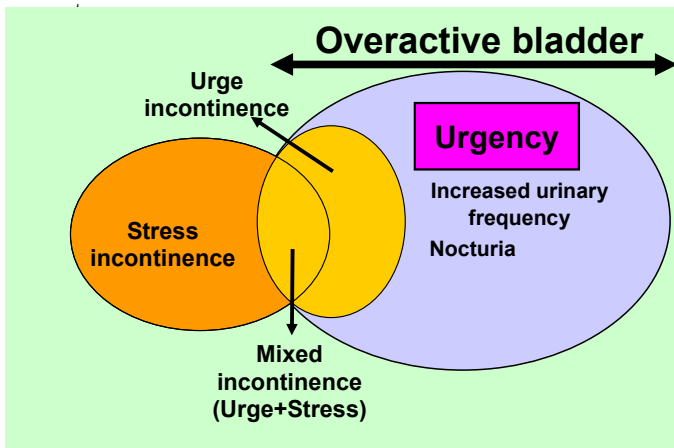


Fig. 2 Symptomatology of overactive bladder

OAB is highly prevalent worldwide. In the U.S., a study showed that the prevalence of OAB was 16.0% in men and 16.9% in women aged 18 years or older<sup>7)</sup>. Therefore, OAB might affect 34 million individuals in the U.S. In Europe and Scandinavia, a study showed virtually the same prevalence of OAB (16.6%) in individuals, men and women aged 40 years or older, selected from the general population in France, Germany, Italy, Spain, Sweden and the United

Kingdom<sup>8)</sup>. In Japan, the prevalence was 12.4% in men and women aged 40 years or older<sup>9)</sup>. The total cost of OAB is estimated to be \$12.6 billion (year 2000 dollars) in the U.S. Still, the vast majority of OAB sufferers remain untreated.

In our previous study, it was shown that acupuncture might be beneficial in the treatment of OAB<sup>2-3)</sup>. We applied acupuncture to Zhongliao points on the skin of the third posterior sacral foramina as in this study with 11 patients with urge incontinence or urgency and found an improvement of the symptoms in 9 (82%)<sup>2)</sup>. The treatment induced increase in both maximum cystometric bladder capacity and bladder compliance, with statistical significance. It is therefore conceivable that acupuncture stimulation might increase bladder capacity by inhibiting bladder contraction or urinary sensation. Additionally, acupuncture has been reported to inhibit detrusor hyperreflexia in 13 patients with spinal cord injury<sup>3)</sup>. In the study, incontinence disappeared in 2 (15%) and decreased to 50% or less incontinence volume as compared to the baseline in 6 (46%), resulting in satisfactory therapeutic effects obtained in 8 (62%). These results indicate the possible mechanism of neurological (such as spinal segmental) inhibition through which bladder contraction might be suppressed by acupuncture. In this report the patient had suffered from urgency, urge incontinence, increased urinary frequency and nocturia. Because the symptoms might be in accord with OAB, acupuncture was performed for relieving the symptoms. The urgency and urge incontinence were relieved after acupuncture.

To ask the patient to record micturitions and symptoms for a period of days provided individual information. Frequency volume chart (FVC) was used for the record of the volumes voided as well as the time of each micturition, day and night, for at least 24 hours (Fig 3). The following measurements could be abstracted from FVC: daytime frequency, nocturia, 24-hour frequency, 24-hour urine production, polyuria, nocturnal urine volume, nocturnal polyuria and maximum voided volume. In particular, daytime frequency, nocturia and maximum voided volume are intimately concerned with OAB. Daytime frequency is

the number of voids recorded during waking hours and includes the last void before sleep and the first void after waking and rising in the morning. Nocturia is the number of voids recorded during a night's sleep: each void is preceded and followed by sleep. Maximum voided volume is the largest volume of urine voided during single micturition and is determined either from FVC. FVC has the advantage that the maximum voided volume is obtained without invasive procedures. In this report the maximum voided volume of the patient increased from 120 ml baseline to 330 ml after 8th acupuncture. This result supports our previous study concerning with acupuncture for urge incontinence or urgency.

time	examples	(Month/Day)	(Month/Day)	(Month/Day)
0:00				
1:00	150 ml			
2:00				
3:00				
4:00	100 ml			
5:00				
6:00	Waking up			
7:00	100 ml			
8:00				
9:00	150 ml			
10:00				
11:00	170 ml			
12:00				
13:00	150 ml			
14:00				
15:00				
16:00	200 ml			
17:00				
18:00	130 ml			
19:00				
20:00	140 ml			
21:00				
22:00	120 ml			
23:00	Going to bed			
Total	1410 ml	ml	ml	ml

Fig. 3 Example of frequency volume chart

## Conclusion

Acupuncture could be an alternative to conventional therapies for OAB.

## Reference

1. Diokno AC, Brock BM, Brown MB, Herzog AR: *Prevalence of urinary incontinence and other urological symptoms in the non-institutionalized elderly*. J Urol 1986; 136: 1022-5.
2. Kitakoji H, Terasaki T, Honjo H, Odahara Y, Ukimura O, Kojima M, Watanabe H: *Effect of acupuncture on the overactive bladder*. Nippon Hinyokika Gakkai Zasshi (Japanese Journal of Urology) 1995; 86: 1514-9 Japanese
3. Honjo H, Naya Y, Ukimura O, Kojima M, Miki T: *Acupuncture on clinical symptoms and urodynamic measurement in spinal-cord-injured patients with detrusor hyperreflexia*. Urol Int 2000; 65: 190-5
4. Honjo H, Kawauchi A, Ukimura O, Soh J, Mizutani Y, Miki T: *Treatment of nocturnal enuresis by acupuncture, a preliminary study*, Int J Urol 2002; 9: 672-6
5. Abrams P, Cardozo L, Fall M, Griffiths D, Rosier P, Ulmsten U, van Kerrebroeck P, Victor A, Wein AJ: *The standardization of terminology of lower urinary tract function*, Report from the standardization sub-committee of the International Continence Society, NeuroUrol Urodyn 2002; 21: 167-78
6. Barry MJ, Fowler FJ Jr, O'Leary MP, Bruskewitz RC, Holtgrewe HL, Mebust WK, Cockett AT: *The American Urological Association Symptom Index for benign prostatic hyperplasia*, J Urol 1992; 148: 1549-57
7. Stewart WF, Van Rooyen JB, Cundiff GW, Abrams P, Herzog AR, Core R, Hunt TL, Wein AJ: *Prevalence and burden of overactive bladder in the United States*. World J Urol 2003; 20: 327-36
8. Milsom I, Abrams P, Cardozo L, Roberts RG, Thuroff J, Wein AJ: *How widespread are the symptoms of an overactive bladder and how are they managed? A population-based prevalence study*, BJU Int 2001; 87: 760-6
9. Homma Y, Kakizaki H, Gotoh M, Takei M, Yamanishi T, Hayashi K: *Epidemiologic survey on lower urinary tract symptoms in Japan*. Nippon Hainyokino Gakkaishi (Journal of Neurogenic Bladder Society) 2003; 14: 266-77 Japanese.

## Introduction of University

Meiji University of Oriental Medicine, located in the central part of Kyoto Japan, was founded in 1978 as Meiji Junior College of Oriental Medicine as a part of Meiji Institute of Oriental Medicine. The origin of the institute dates back to 1925 as the Yamazaki School of Oriental Medicine in Osaka, which developed into Meiji School of Oriental Medicine, another part of Meiji Institute of Oriental Medicine.

Meiji Junior College of Oriental Medicine had been accredited by Educational Ministry as the first four-year college of oriental medicine in Japan by adding a Western medical hospital in 1983. The course for doctor of science in acupuncture and moxibustion, accredited in 1994, is the one that the school can boast to the world. In 2002, the school added a course for Judo-Seifuku therapist, Japanese traditional bone fixing technique, changing the name 'College' to 'University'. A four-year course for Judo-Seifuku (2004) and the nursing (2006) was added. The school currently consists of a four-year course for acupuncture and moxibustion, a four-year course of Judo-Seifuku, a four-year course of nursing, has a clinic of oriental medicine and a western medical hospital (see diagram below). The school has also been providing postgraduate training course in the western medical hospital for over 18 years.

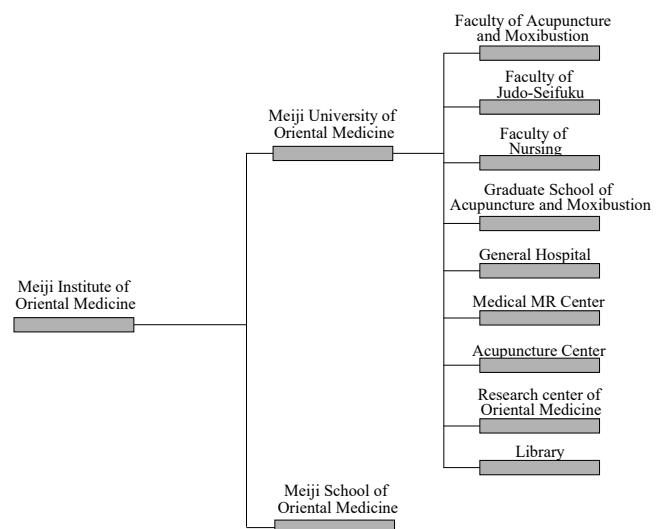
The mission of Meiji University of Oriental Medicine is to train therapists who are qualified to provide traditional oriental medical treatment which is supported with western medical knowledge, to provide highly qualified integrative care of western and traditional oriental medicine, and to investigate the mechanism of the effect of acupuncture and moxibustion and Judo-Seifuku therapy. The school has produced over 2,700 graduates, including 111 masters, 47 doctors of acupuncture and moxibustion for over the past 28 years, who are widely accepted as highly qualified leaders in the field in Japan.

The Western medical hospital, equipped with high quality technology including one of the most powerful MRI instruments in the world, has an outstanding medical staff of Internal Medicine, Surgery, Orthopedics, Urology, Neurosurgery, Anesthesiology, Dentistry, Otolaryngology, Ophthalmology and Gynecology to provide high quality integrative care and education. It has a primary goal, to accumulate scientific evidence on the value of traditional oriental medicine by collaborating with the professional traditional therapists.

Basic research to investigate the mechanism of traditional therapies are also made possible by collaboration with departments of Physiology, Anatomy, Immunology, Chemistry, Biology and Physics. The results are reflected in curricular decisions to ensure the program reflects the latest in medical theory and practice.



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