

Urinary Incontinence and Chinese Medicine

Urinary incontinence is any involuntary leakage of urine or loss of bladder control. It can happen to anyone, but is very common in older people. Symptoms can range from mild leaking to uncontrollable wetting. Women are more likely than men to have incontinence.

Causes

Urinary incontinence can result from anatomic, physiologic or pathologic factors, causing weak bladder muscles, overactive bladder muscles, blockage of urinary tract, damage to nerves that control the bladder.

Temporary urinary incontinence

- Alcohol
- Overhydration
- Caffeine
- Bladder irritation
- Constipation
- Medications
- Urinary tract infection

Persistent urinary incontinence

- Pregnancy and childbirth
- Changes with aging
- Hysterectomy
- Painful bladder syndrome
- Prostatitis
- Enlarged prostate
- Prostate cancer
- Chronic urinary tract infection
- Bladder cancer or bladder stones
- Neurological disorders: multiple sclerosis, Parkinson's disease, stroke, a brain tumor or a spinal injury
- Obstruction: tumor or stone in urinary stones and vaginal prolapse

Types

- **Stress urinary incontinence** is due essentially to insufficient strength of the pelvic floor muscles.
- **Urge incontinence** is involuntary loss of urine occurring for no apparent reason while suddenly feeling the need or urge to urinate.
- **Overflow incontinence** occurs when the patient's bladder is always full so that it frequently leaks urine.
- **Structural incontinence** caused by structural problems such as an ectopic ureter or vaginal fistulas.
- **Functional incontinence** happens in many older people who have normal bladder control. They just have a hard time getting to the toilet in time because of other disorders that make moving quickly difficult.

- **Mixed urinary incontinence** involves two or more types of incontinence.

Conventional treatment

Weight loss in overweight women reduced stress incontinence; Exercises to the muscles of the pelvis to strengthen or retrain pelvic floor muscles and sphincter muscles can reduce stress leakage; Absorbent products such as shields, undergarments, briefs, diapers and underpads can be used to protect underwear; Electrical stimulation can strengthen muscles in the lower pelvis; Biofeedback can be used to help the patient become aware of his or her body's functioning; Medications can reduce some types of leakage; Pessaries can be used to the patients who have urinary incontinence caused by vaginal prolapse; A variety of materials can be used to add bulk to the urethra and thereby increase outlet resistance; Catheterization to the bladder can be used for the patients due to overflow incontinence to drain urine; Surgery procedures are often used to alleviate incontinence after other treatments have been tried, including bladder repositioning, retropubic suspension or bladder neck suspension surgery, various sling procedures, bladder augmentation or artificial urinary sphincter.

Clinical studies of acupuncture on urinary incontinence

Various clinical studies have been performed and show that acupuncture is effective in the treatment of urinary incontinence. The following are some of studies.

Observation on therapeutic effect of dog-day acupuncture and moxibustion combined with pelvic floor muscle exercises for treatment of female stress urinary incontinence. Seventy one cases were randomly divided into two groups. Thirty six cases in the observation group were treated with acupuncture on Zhongji (CV 3), Zigong (EX-CA 1), Chize (LU 5) etc. and tortoise-shell moxibustion on Shenque (CV 8) combined with pelvic floor muscle exercises; while thirty five cases in the control group were treated with only pelvic floor muscle exercises. The scores of the International Consultation Committee on Incontinence Questionnaire Short Form (ICI-Q-SF) and the Medical Outcomes Survey Short Form-36 (SF-36) were evaluated before and after treatment, and the scores of SF-36 were also compared with 35 cases in normal group. RESULTS: The total effective rate of 91.7% in the observation group was higher than that of 77.1% in the control group ($P < 0.05$). The dimensions of SF-36 of stress urinary incontinence patients were remarkably lower than those of normal group (all $P < 0.05$). The scores of ICI-Q-SF were decreased while the scores of SF-36 were increased obviously after treatment in both the observation group and the control group, there were pronounced improvements on physiological function, pain, physical activity, social function and affection function in the observation group (all $P < 0.05$). CONCLUSION: the dog-day acupuncture and tortoise-shell moxibustion combined with pelvic floor muscle exercises can improve the symptoms of urinary incontinence and increase the quality of life of patients. Tang CL et al. Zhongguo Zhen Jiu. 2009; 29(11):879-83.

The efficacy of acupuncture in treating urge and mixed incontinence in women: a pilot study. This study consisted of 9 women between the ages of 44 and 66 years with urge or mixed urge and stress UI at least twice a week for a minimum of 3 months. MEASURES: Subjects completed a 1-week bladder diary at baseline and at 1 and 4 weeks postacupuncture to assess the impact of acupuncture on incontinence episodes. Quality of life was measured at baseline and at 1 and 4 weeks postacupuncture using the Medical Outcomes Short-Form (general health-related quality of life) and the Incontinence Impact Questionnaire and Urogenital Distress Inventory (incontinence-specific quality of life). RESULTS: It was feasible to recruit subjects and perform the planned study procedures. Subjects randomized to the true acupuncture group had a

mean 63.30% (median = 65.99%) reduction in daytime accidents/day at 1 week postacupuncture and 67.47% reduction (median = 75.76%) at 4 weeks postacupuncture. In contrast, the mean reduction in daytime accidents was 18.88% (median = 19.64%) at 1 week and 16.67% (median = 0%) at 4 weeks post-sham acupuncture. There were no significant group differences in changes in the scores on the quality-of-life measures. Subjects' perceptions about whether they had received the true or sham acupuncture were not significantly better than one would expect by chance. **CONCLUSIONS:** The findings of this pilot study support the need for additional research examining the efficacy of acupuncture in the treatment of UI in women, the feasibility of performing study procedures, and the use of a sham needle as placebo in acupuncture studies. Engberg S et al. *J Wound Ostomy Continence Nurs.* 2009;36(6):661-70.

Acupuncture in the treatment of diabetic bladder dysfunction. This study compared 30 cases in the acupuncture group with 15 cases in the sham acupuncture group (n = 45 total). The effects of acupuncture were observed on urodynamic measurements, as well as a variety of symptoms associated with DBD. **RESULTS:** In the acupuncture group, five of the six urodynamic measures (maximal detrusor pressure, bladder compliance, maximal bladder capacity, bladder volume at desire to void and urge to void) demonstrated significant improvement ($p < 0.05, 0.01$) over the 15-day treatment period. Only one measure (bladder volume at urge to void) was significantly improved ($p < 0.05$) in the sham acupuncture group. There were significant differences after therapy in four measures (bladder compliance, maximal bladder capacity, bladder volume at desire to void, and urge to void) between the groups ($p < 0.05, 0.01$). A significant difference of the changes in symptoms compared with pretreatment in the acupuncture group was observed ($p < 0.05, 0.01$). In 25 subjects in the acupuncture group, incontinence improved from 2.4 to 1.4. In the sham acupuncture group, incontinence deteriorated from 2.2 to 2.3. **CONCLUSIONS:** Our pilot study has provided evidence that acupuncture may be clinically useful for the radical treatment of DBD. Tong Y et al. *J Altern Complement Med.* 2009;15(8):905-9.

Effects of electroacupuncture on urinary bladder function after radical hysterectomy. One hundred and ten cases were randomly divided into an electroacupuncture (EA) group and a control group, 55 cases in each group. In the control group, the urinary tube was placed and kept with routine method and the urinary bladder was rinsed, and from the eighth day the abdomen was radiated with TDP, 30 min each day, for 5 days. In the EA group, on the basis of treatment in the control group EA was given at Sanyinjiao (SP 6), Zusanli (ST 36), Waiguan (TE 5), Shuidao (ST 28), Guilai (ST 29), etc. from the eighth day to twelfth day after operation. The recovery time of urinary bladder function after radical hysterectomy, urine dynamic indexes and hospitalization days were compared between the two groups. **RESULTS:** The cases of the bladder function recovery, retention of urine, urinary incontinence were 51(51/55), 4(4/55), 0 on the 14 th day after operation and 53(53/55), 2(2/55), 0 on the 28 th day in the EA group, and 27(27/55), 25(25/55), 3(3/55) on the 14 th day and 43(43/55), 11(11/55), 1(1/55) on the 28th day in the control group, respectively, with a very significant difference between the two groups ($P < 0.01$); the EA group in residual urine volume, bladder volume, mean urinary flowing rate was better than the control group on the 14 th day after operation ($P < 0.01$ or $P < 0.05$); the hospitalization days after operation was (21.1 +/- 3.3) days in the EA group and (25.5 +/- 3.5) days in the control group, the former being shorter than the later ($P < 0.01$). **CONCLUSION:** EA can promote recovery of bladder function, shorten the keeping time of urinary tube after radical hysterectomy, which is benefit to decreasing incidence rate of urinary system infection and shortening hospitalization days. Yi WM et al. *Zhongguo Zhen Jiu.* 2008;28(9):653-5.

Acupuncture for overactive bladder: a randomized controlled trial.

Eighty-five women were enrolled in this randomized, placebo-controlled trial. Women were randomly assigned to either receive an acupuncture treatment expected to improve their bladder symptoms, or a placebo acupuncture treatment designed to promote relaxation. They underwent cystometric testing, completed a 3-day voiding diary, and completed the urinary distress inventory and incontinence impact questionnaire, validated quality-of-life inventories, before and after 4 weekly acupuncture treatments. The primary endpoint was number of incontinent episodes over 3 days. Secondary endpoints included voiding frequency and urgency, cystometric bladder capacity,

maximum voided volume, and the urinary distress inventory and incontinence impact questionnaire symptom scores. **RESULTS:** Seventy-four women completed all aspects of the study. Women in both treatment and placebo groups had significant decreases in number of incontinent episodes (59% for treatment, 40% for placebo) without a significant difference in the change between the groups. Women in the treatment group had a 14% reduction in urinary frequency ($P = .013$), a 30% reduction in the proportion of voids associated with urgency ($P = .016$), and a 13% increase in both maximum voided volume and maximum cystometric capacity ($P = .01$). Both groups also had an improvement in the urinary distress inventory and incontinence impact questionnaire scores (54% decrease for treatment, 30% decrease for placebo, $P < .001$ for the difference in change between the groups). **CONCLUSION:** Women who received 4 weekly bladder-specific acupuncture treatments had significant improvements in bladder capacity, urgency, frequency, and quality-of-life scores as compared with women who received placebo acupuncture treatments. Emmons SL and Otto L. *Obstet Gynecol.* 2005;106(1):138-43.

Acupuncture on clinical symptoms and urodynamic measurements in spinal-cord-injured patients with detrusor hyperreflexia. A total of 13 patients (11 males, 2 females) suffering from urinary incontinence due to spinal cord injuries were treated by acupuncture, which was carried out with disposable stainless steel needles inserted into the bilateral BL-33 (Zhongliao) points on the skin of the third posterior sacral foramina. Urodynamic studies were also performed before acupuncture, immediately after the 1st acupuncture and 1 week after the 4th acupuncture. In 6 patients, these urodynamic studies were performed again 1 month after the 4th acupuncture. **RESULTS:** No side effects were recognized throughout the treatment period. Of the 13 patients, incontinence disappeared in 2 (15%) and decreased to 50% or less compared to baseline in a further 6 (46%). Maximum cystometric bladder capacity increased significantly from 76.2 +/- 62.3 to 148.1 +/- 81.5 ml 1 week after the 4th acupuncture ($p < 0.01$). In the 6 patients in whom cystometry was repeated 1 month after the 4th acupuncture, bladder capacity decreased from 187.5 +/- 90.4 ml 1 week after the 4th acupuncture to 128.3 +/- 93.4 ml. **CONCLUSION:** In spinal cord injury patients acupuncture could represent another valuable therapeutic alternative to the treatment of urinary incontinence caused by detrusor hyperreflexia. Honjo H et al. *Urol Int.* 2000;65(4):190-5.

Improvement of urge- and mixed-type incontinence after acupuncture treatment among elderly women - a pilot study. The aim of this study was to investigate if sensory stimulation in the form of manual acupuncture could influence urge- or mixed-type incontinence among elderly women who were not satisfactorily relieved by standard pharmacological and non-pharmacological treatments given at a specialized incontinence unit. The study is an open clinical follow-up study. The study included 15 elderly women who were treated with manual acupuncture 12 times. Both subjective scorings and objective measurements in the form of leakage in grams (48 h Inco-test) were used. Evaluations were performed at discharge and 1 and 3 months thereafter. Almost all outcome measurements were significantly improved even at follow-up 3 months after the last treatment. Global scorings showed that 12 of the 15 women considered themselves improved even at the follow-up 3 month after treatments were completed. The possible mechanisms of action are discussed, as is the way to perform more studies in this field. Bergström K, et al. *J Auton Nerv Syst.* 2000;79(2-3):173-80.

Acupuncture for urinary incontinence in patients with chronic spinal cord injury. A preliminary report. A total of 8 male chronic spinal cord injured patients with urinary incontinence were treated by acupuncture. Their ages ranged from 20 to 33 years (mean 27). The level of lesion was cervical in 4 and thoracic in 4. Detrusor hyperreflexia with uninhibited bladder contraction was confirmed by urodynamic studies in all of them. Acupuncture was performed using a disposable stainless needle (0.3 mm in diameter, 60 mm in length), which was inserted into bilateral BL-33 (Zhongliao) points and was rotated manually for 10 minutes. The treatment was conducted every week for 4 weeks. Urodynamic studies were repeated, immediately after the beginning of and a week after the completion of the treatment. Urinary symptoms were also checked before and after the treatment. **RESULTS:** No side effects were

recognized throughout the treatment period. Among 8 patients, incontinence was controlled completely in 3 (38%) and partially in 3 (38%). The average maximum cystometric bladder capacity increased significantly, from 42.3 +/- 37.9 ml to 148.1 +/- 101.2 ml by the treatment ($p < 0.05$), while the average maximum bladder pressure was not changed. CONCLUSIONS: These data suggest that acupuncture could be a promising alternative for conventional therapies for urinary incontinence caused by detrusor hyperreflexia in patients with chronic spinal cord injuries. Honjo H et al. Nippon Hinyokika Gakkai Zasshi. 1998;89(7):665-9.

Chinese Medicine

In Chinese medicine, urinary incontinence is often categorized into five main different types.

Deficiency and coldness of kidney *qi*

- Symptoms: frequently urine leaking, long and thin flow of clear urine, low spirit, aversion to coldness, tiredness, pale complexion, sore waist and knees with no strength, dizzy and tinnitus, cold extremities, spermatorrhea, premature ejaculation or impotence
- Tongue: light-colored, fat with teeth marker, and thin and white coat
- Pulse: thin, weak and no strength

***qi* deficiency of lung and spleen**

- Symptoms: urinary incontinence with urgency after the birth or after the disease, occasional urine leak, exacerbating when coughing, standing up, sneezing, talking or laughing, accompanied by cough, asthma and tiredness, poor appetite or abdominal bloating
- Tongue: light-colored with thin, white coat
- Pulse: weak and no strength

Hot dominance of bladder

- Symptoms: urine dripping frequently, urgent and painful urination, yellow urine, burning feeling when urinate, heavy and uncomfortable feeling in low abdomen, bitter and dry month
- Tongue: red with yellow coat
- Pulse: stringy, slippery and fast

***Yin* deficiency of liver and kidney**

- Symptoms: urinary incontinence, short and slow flow of yellow urine, burning feeling in urinary tract, often accompanied by dizzy and tinnitus, red cheeks, thirsty and forgetful, sore waist and no strength in the legs, night sweating or constipation
- Tongue: red with scanty coat
- Pulse: stringy, thin and fast

Stagnation of Xia-Jao:

- Symptoms: can not control urination, bloating, pain in low abdominal area with sometime detectable mass
- Tongue: dark, or petechiae with thin coat

- Pulse: stringy, weak and uneven

Since the complexity of herbal medicine, acupuncture is commonly used for clinical studies. However, in clinical practice, acupuncture is often combined with herbal medicine, or some other modalities of Chinese medicine.

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