

ACUPUNCTURE FOR TREATMENT OF PATIENTS WITH OVERACTIVE BLADDER REFRACTORY TO CONVENTIONAL PHARMACOTHERAPY

Hypothesis / aims of study

Acupuncture is one of the standardized neuromodulatory therapies available. We have reported that acupuncture had impact on increasing the maximum cystometric bladder capacity and suppressing the bladder contraction in patients with detrusor overactivity (1). Neuromodulation by acupuncture is also believed to impact on or inhibit transmission of pain as well as to normalize sensory processing within the peripheral and/or central nervous systems. Recently we reported that, using a Neurometer, quantitative neuroselective measurement of the current perception threshold (CPT) values of the bladder afferent fibers could be successfully assessed (2). This new modality has the potential to identify the neuroselective mechanism of the overactive bladder as well as to improve effectiveness of neuromodulatory therapies. The aim of this study is to determine whether acupuncture improved the symptoms as well as the urodynamic parameters in patients with overactive bladder, especially those who were unsatisfied with the clinical response to standard conventional anti-cholinergic pharmacotherapy, and additionally, to determine whether acupuncture had a possible impact on urinary sensory dysfunction.

Study design, materials and methods

A total of 40 patients (20 males, 20 females) with symptoms of urinary frequency and urgency, who were unsatisfied with the clinical response to standard conventional anti-cholinergic pharmacotherapy, were treated by acupuncture. Their ages ranged from 43 to 87 years (mean 68 years).

Acupuncture was performed using disposable stainless steel needles (0.3 mm in diameter, 60 mm in length, SEIRIN Kasei, Shimizu, Japan) with the patient in the prone position. Acupuncture needles were inserted into the bilateral BL-33 (Zhongliao) points as standardized by the World Health Organization, on the skin of the third posterior sacral foramina. A needle was inserted into each side of the foramina sufficiently deeply for its tip to be placed close to the sacral periosteum, and then the bilateral needles were moved up and down reciprocally for 10 min manually. The process was repeated once a week for 4 weeks for the initial treatment (1st to 4th acupuncture).

All patients completed a frequency volume chart as well as an IPSS-QOL questionnaire (graded 0-6) for 1 week before treatment as a baseline, and again after the 4th acupuncture. All patients complaining of pain recorded a visual analogue scale of pain for 1 week before treatment as a baseline, and again after the 4th acupuncture. Water-filling cystometry at a filling rate of 50 ml/min was performed in 32 patients, before acupuncture and one week after the 4th acupuncture, using the Menuet Compact (Dantec, Skovlunde, Denmark) with an 8F catheter, to determine the bladder volume when a strong desire to void or involuntary detrusor contraction was recognized. In 10 patients, neuroselective bladder sensory function was evaluated both before and after the treatment, using a Neurometer (Neuroton, Baltimore, MD) which emits graded alternating current stimuli at 2000, 250, and 5 Hz with an intravesical electrophysiological catheter, as reported previously (2).

Results

Improvement of clinical symptoms including urinary frequency, nocturia, and/or urgency was found in 27 (68%) out of 40 patients. QOL scores improved in 30 (75%) out of 40 patients and the scores improved from 5.3 ± 0.9 to 3.7 ± 1.6 ($p < 0.0001$). Pain was improved in 3 (60%) of 5 patients with suspected pelvic pain syndrome. The mean of the maximum voided volume increased from 177.2 ± 81.5 ml to 233.8 ± 95.3 ml ($p < 0.0001$). The mean of the cystometric bladder capacity increased from 146.0 ± 63.7 ml to 178.6 ± 81.8 ml ($p < 0.05$). The mean CPT values of 5Hz (C-fiber function) determined by Neurometer significantly changed from the baseline value of 13.1 ± 18.9 to 32.6 ± 26.3 in one week after the 4th acupuncture ($p < 0.05$). No side effects were recognized throughout the treatment period.

Interpretation of results

Acupuncture has improved the clinical symptoms of urinary frequency and urgency and QOL scores, accompanied with an increase of bladder capacity as well as with possible inhibition of the sensitivity of C-fiber dysfunction. This study suggested that acupuncture is a safe promising therapeutic alternative for difficult-to-treat patients with overactive bladder and/or suspected pelvic pain syndrome. A controlled trial with sham acupuncture for the treatment of overactive bladder is warranted.

Concluding message

Acupuncture could be a promising alternative to conventional therapies for overactive bladder.

References

1. Urol Int 65: 190-195, 2000.
2. Eur Urol 45:70-76, 2004.