Single-Point Acupuncture for Treatment of Urge Incontinence in Women: A Pilot Nonrandomized Trial

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ABSTRACT

Objectives: Urinary incontinence (UI) is common in middle- and old-age. Previous studies have shown that multiple-point and multiple-frequency acupuncture are efficacious treatment modalities for UI. This study investigated the efficacy of single-point acupuncture for the treatment of UI in women.

Materials and Methods: Twelve female subjects, ages 40–75, participated in the trial. Acupuncture at CV 2 was performed. Before needle insertion, each subject completed the Revised Urinary Incontinence Scale (RUIS). After treatment, subjects were contacted at 2 and 8 weeks to assess treatment effects using the RUIS questionnaire again.

Results: Statistically significant improvements were seen with respect to symptoms of urgency, stress incontinence, impact of urine leakage, quantity of urine leakage, and the total score at 2 weeks postintervention. A statistically significant increase in impact of urine leakage was found at the 8-week follow-up, compared to the 2-week results.

Conclusions: In this pilot trial, single-point acupuncture was associated with significant but short-term improvements in UI symptoms. Future trials should include a control group and an increased sample size for a more-rigorous examination of this potential adjunctive treatment for UI.

Keywords: autonomic nervous system, menopause, urinary disorders

INTRODUCTION

URINARY INCONTINENCE (UI) is a common problem in both women and men, with recent estimates showing that 348 million people worldwide are affected.¹ Without effective treatment for UI, a patient's quality of life suffers. As such, there is a great need for an efficacious and safe treatment to assist patients in managing their UI symptoms.

Currently the American Urological Association guidelines recommend behavioral therapies as first-line treatment

for any form of overactive bladder problems.² As second-line treatment options, patients may also be offered oral antimuscarinics or oral B3-adrenoceptor agonists; however, these medications are limited by numerous contraindications and side-effects.²

A potentially promising nonpharmacologic treatment for urge UI is acupuncture. Many studies examining the effects of acupuncture for the treatment of UI have produced results that suggest favorable effects but with limited statistical significance.³ One randomized placebo-controlled trial of

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74 women showed significant improvement in bladder capacity, urgency, frequency, and life quality after 4 weekly acupuncture treatments but only studied voiding during the 3-day periods post-treatment.⁴ Another study compared 6 weekly acupuncture treatments of 15 needles in each visit to a course of oxybutynin. Although both approaches reduced frequency and urgency, neither produced significant improvement in urge incontinence.⁵ No studies have assessed a simpler approach that requires minimal training.

The purpose of this pilot study was to determine if single-point acupuncture could reduce the symptoms of urge UI in women, a modality that could be incorporated easily into a primary-care office and thus be more-widely utilized.

MATERIALS AND METHODS

Subjects

Female patients, ages 40–75, from a midwestern hospital's family medicine center and urology group with urge incontinence were identified as potential candidates and invited to participate in the study. After institutional review board Approval and informed consent were obtained, 12 female patients were recruited between November 2013 and March 2014. Of the 14 subjects who were originally approached, 2 patients refused participation in the study. One did not believe her symptoms warranted treatment and the other patient was afraid of needles. The remaining 12 subjects agreed to participate and received acupuncture the same day.

Inclusion criteria. Patients experiencing symptoms of urge incontinence three times per week, urinating a minimum of six times per day, and scoring a minimum of 9 on the Revised Urinary Incontinence Scale (RUIS) were eligible for the study and were invited to participate. Subjects who concurrently experienced stress incontinence but with a predominance of urge incontinence symptoms were included.

Exclusion criteria. Patients were excluded if they had irritative symptoms, infections, interstitial cystitis, or neurogenic bladders, or had used anticholinergic medications

within 7 days of starting the study. Due to the nature of acupuncture and slight risk of bleeding, subjects with known bleeding disorders or who were taking anticoagulant medications were excluded from the study, as were patients who were or who might have become pregnant during the trial. Subjects who had a predominance of stress-incontinence symptoms were also excluded.

Measures

Severity of UI symptoms and efficacy of treatment were evaluated using the RUIS, a 5-question survey that is scored from 0 to 16.⁶ Symptoms of urge, leakage quantity and frequency, and stress episodes were assessed.

Procedures

Patients were given the RUIS during screening and at 2 and 8 weeks after the intervention. The follow-up assessments were all conducted via telephone calls. Telephone calls were made at the appropriately scheduled intervals. There was a 100% follow-up rate at 2 weeks and 2 subjects were lost by 8 weeks (83% follow-up rate).

Intervention

The single-point acupuncture intervention was performed by a family physician who is licensed to practice acupuncture and has been practicing acupuncture for 15 years (MAB). Each patient was positioned supine, with clothing removed to expose the lower abdomen, and a single-use disposable SEIRIN[®] L-type No. 5, 0.25×40-mm needle was inserted at CV 2, in the midline just above the pubic symphysis. The needle was advanced 2–3 cm and then turned in a clockwise direction until it was hard to spin (otherwise known as De Qi). Once De Qi was obtained (~ 5 seconds), the needle was removed.

Statistical Analysis

Analysis was performed using SPSS software (version 20.0, SPSS Inc., Chicago, IL). Descriptive symptoms and frequencies were examined. Paired samples *t*-tests were

TABLE 1. MEAN DIFFERENCES IN URINARY INCONTINENCE SYMPTOMS FROM BASELINE TO 2-WEEK FOLLOW-UP

Symptom	Baseline <i>M</i> (<i>SD</i>) ^a	2-week <i>M</i> (<i>SD</i>) ^a	<i>t</i>	<i>df</i>	<i>P</i>
Amount	1.58 (0.79)	0.92 (0.67)	2.35	11	0.04*
Frequency	3.08 (0.67)	2.33 (1.50)	2.02	11	0.07
Quantity	2.08 (0.67)	1.25 (0.97)	2.59	11	0.03*
Stress	1.75 (1.06)	0.58 (0.67)	3.63	11	0.00**
Urgency	1.67 (0.78)	1.08 (0.90)	2.24	11	0.05*
Total symptoms	10.17 (2.33)	6.17 (4.35)	3.14	11	0.01*

^aStandard deviation appears in parentheses after the mean.

P* < 0.05; *P* < 0.001.

M, mean; *SD*, standard deviation.

TABLE 2. MEAN DIFFERENCES IN URINARY INCONTINENCE SYMPTOMS FROM 2-WEEK- TO 8-WEEK FOLLOW-UP

Symptoms	2-week <i>M</i> (<i>SD</i>) ^a	8-week <i>M</i> (<i>SD</i>) ^a	<i>t</i>	<i>df</i>	<i>P</i>
Amount	1.00 (0.67)	2.10 (1.10)	−3.50	9	0.01*
Frequency	2.60 (1.43)	3.20 (1.23)	−1.69	9	0.08
Quantity	1.40 (0.97)	1.80 (1.03)	−1.50	9	0.17
Stress	0.60 (0.67)	1.40 (1.08)	−2.45	9	0.04*
Urgency	1.20 (0.92)	2.00 (1.05)	−2.75	9	0.02*
Total symptoms	6.80 (4.29)	10.50 (4.45)	−3.23	9	0.01*

^aStandard deviation appears in parentheses after the mean.

* $P < 0.05$.

M, mean; *SD*, standard deviation.

conducted and data from each question on the RUIS were analyzed individually as well as the total score. Paired samples *t*-tests compared the baseline or week-0 RUIS result to follow-up results at 2 weeks, and the 8-week follow-up was compared to the result just prior. Values of $P < 0.05$ were considered to be statistically significant. The 2 patients lost to follow-up at 8 weeks were excluded from the analysis.

RESULTS

Statistically significant ($P < 0.05$) improvements were observed with respect to symptoms of urgency, stress incontinence, impact of urine leakage, and quantity of urine leakage as well as the total score at 2 weeks after intervention (Table 1). Symptoms of urgency, frequency, and the total RUIS score showed an initial improvement followed by statistically insignificant worsening at 8 weeks (Table 2). All symptoms demonstrated a trend toward improvement at 2 weeks after the intervention, while symptoms of stress incontinence and quantity of urine loss maintained this improvement through all 8 weeks of follow up. Symptoms of urine leakage showed a statistically significant worsening at 8 weeks, compared to 2 weeks.

DISCUSSION

Standard medical treatment for urge incontinence has shown marginal benefit with no clinically significant differences in efficacy. Because of the expense and side-effects of current treatments, discontinuation rates remain high for medical treatment of UI. Intravesicular botulinum toxin injection, and posterior tibial-nerve and sacral-nerve stimulation have been found to be helpful, but evidence is still limited. Current recommendations for treatment for UI are limited by incomplete resolution of symptoms and side-effects.⁷

The current study, like previous acupuncture trials,^{8,9} showed positive short-term efficacy. This approach, with only a single treatment and one needle, is unique and potentially easier to implement on a wider scale in primary-care practices. Single-needle acupuncture at CV 2 is a novel

approach that produces significant, albeit transient, reduction in symptoms of UI without the attendant side-effects, risks, or costs of other current therapies. The simplicity of this approach could make it useful for primary care and/or specialty offices with minimal training on the needle-insertion technique and billing information. CV 2 is noted to be a major acupuncture point for all pelvic problems—both genitourinary and gynecologic. The CV 2 location is the anterior point for the Urinary Bladder and is used in the treatment of bladder dysfunction including UI.¹⁰ The current authors could not find previous research that included this point in the protocol for urge incontinence. The current study results indicate that this technique could be useful for patients with symptoms of urge incontinence.

This study was limited by the small sample size and, thus, had limited power. Efficacy of repeat acupuncture treatments at variable intervals was not assessed, and could possibly have produced longer-lasting results. In addition, the physician-acupuncturist delivering the intervention has more than 15 years of experience in utilizing acupuncture, and positive results might not be seen with less-experienced practitioners. A larger, randomized, controlled study would be useful to help determine the impact of this treatment for UI further.

CONCLUSIONS

In this small pilot study, acupuncture at the CV 2 point produced a statistically significant short-term symptomatic improvement in UI in women, with minimal-to-no side-effects. Randomized studies with longer-term follow-ups are needed to verify these preliminary findings. If effective, this simple technique could be incorporated readily into primary-care settings.

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AUTHOR DISCLOSURE STATEMENT

There are no disclosures or conflicts for any authors. The authors declare that they have no competing interests.

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