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

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Abstract

Objectives: Urinary incontinence is common in middle and older age. Previous studies have shown that multiple point and multiple frequency acupuncture is an efficacious treatment modality for urinary incontinence. This study investigated the efficacy of single point acupuncture for the treatment of urinary incontinence in women.

Subjects: Twelve female subjects aged 40-75 years participated in the trial.

Methods: Acupuncture at CV2 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.

Results: Statistically significant improvements were seen in symptoms of urgency, stress incontinence, impact of urine leakage, quantity of urine leakage, as well as the total score at 2 weeks post intervention. 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 urinary incontinence symptoms. Future trials should include a control group and 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 [2]. As a second line of 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 non-pharmacologic 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-control trial of 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 six weekly acupuncture treatments of 15

needles each visit to a course of oxybutynin. Although both reduced frequency and urgency, neither had significant improvement in urge incontinence [5]. No studies have assessed a more simple approach that requires minimal training. The purpose of this pilot study was to determine if single point acupuncture could improve the symptoms of urge urinary incontinence in women, which could easily be incorporated into a primary care office and thus be more widely utilized.

Materials and Methods

Subjects

Female patients age 40 to 75 from a mid-western 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 was obtained, twelve female patients aged 40 to 75 were recruited between November 2013 and March 2014. Of the fourteen subjects approached, two patients refused participation in the study. One did not believe her symptoms warranted treatment and the other 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 nine on the Revised Urinary Incontinence Scale (RUIS) were eligible for the study and 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 exhibited irritative symptoms, infection, interstitial cystitis, neurogenic bladder, or if they had used anticholinergic medications within seven days of starting the study. Due to the nature of acupuncture and slight risk for bleeding, subjects with known bleeding disorder or taking anticoagulant medications were excluded from the study, as were those who were or who may 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 was evaluated using the Revised Urinary Incontinence Scale (RUIS,) a five-question survey that is scored from 0-16 [6]. Symptoms of urge, leakage quantity and frequency, and stress episodes were assessed.

Procedures

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

Intervention

The single-point acupuncture intervention was performed by a family physician that is licensed to practice acupuncture and has been practicing acupuncture for 15 years (MAB). The patient was positioned supine, with clothing removed to expose the lower abdomen and a single use disposable Seirin L-type No5 0.25x40mm needle was inserted at CV2, in the midline just above the pubic symphysis. The needle was advanced 2-3cm and then turned in a clockwise direction until it was hard to spin, otherwise known as 'deqi'. Once deQi was obtained (approximately 5 seconds), the needle was removed.

Statistical Analysis

Analysis was performed using SPSS software (Version 20.0, SPSS Inc., Chicago, IL). Descriptive and frequencies were examined. Paired samples t-tests were conducted and data from each question on the RUIS was 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, and the 8-week follow-up was compared to the result just prior. Values of $p<0.05$ were considered 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 in 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).

	Baseline M(SD)	2-weeks M(SD)	t	df	p
Amount	1.58 (.79)	.92 (.67)	2.35	11	.04*
Frequency	3.08 (.67)	2.33 (1.50)	2.02	11	.07
Quantity	2.08 (.67)	1.25 (.97)	2.59	11	.03*
Stress	1.75 (1.06)	.58 (.67)	3.63	11	.00**
Urgency	1.67 (.78)	1.08 (.90)	2.24	11	.05*
Total symptoms	10.17 (2.33)	6.17 (4.35)	3.14	11	.01*
Note. * = p < .05, ** = p < .001					

Table 1: Mean Differences for Urinary Incontinence Symptoms from Baseline to 2-Week Follow-Up.

Symptoms of urgency, frequency and the total RUIS score showed an initial improvement followed by statistically insignificant worsening at 8 weeks (Table 2).

	2-weeks M(SD)	8-weeks M(SD)	t	df	p
Amount	1.00 (.67)	2.10 (1.10)	-3.50	9	.01*
Frequency	2.60 (1.43)	3.20 (1.23)	-1.69	9	.08
Quantity	1.40 (.97)	1.80 (1.03)	-1.50	9	.17
Stress	.60 (.67)	1.40 (1.08)	-2.45	9	.04*
Urgency	1.20 (.92)	2.00 (1.05)	-2.75	9	.02*
Total symptoms	6.80 (4.29)	10.50 (4.45)	-3.23	9	.01*
Note. * = p < .05, ** = p < .001. Standard deviations appear in parentheses below the mean.					

Table 2: Mean Differences for Urinary Incontinence Symptoms from 2-Week- to 8-Week Follow-Up.

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 botulism 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]. Our current study, like previous acupuncture trials [8,9] showed positive short-term efficacy. Our 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 CV2 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. CV2 is noted to be a major acupuncture point for all pelvic problems, both genitourinary and gynecologic. The CV2 location is the anterior point for the urinary bladder, and is used in the treatment of bladder dysfunction including urinary incontinence [10]. We could find no previous research that included this point in the protocol for urge incontinence. Our results indicate that this technique could be useful for patients with symptoms of urge incontinence.

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

Conclusions

In this small pilot study, acupuncture at the CV2 point produced a statistically significant short-term symptomatic improvement in urinary incontinence in women, with minimal to no side effects. Randmozied studies with longer-term follow-

up are needed to verify our preliminary findings. If effective, this simple technique could be incorporated readily into primary care settings.

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