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Acupuncture Therapy for Interstitial Cystitis (Bladder Pain Syndrome): A Case Report

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Abstract

Background
Growing evidence supports acupuncture as a viable therapy for chronic pain. This case report aimed to provide specific evidence of the effectiveness of acupuncture in reducing the pain of a woman with interstitial cystitis (IC).

Case Description
A 66-year-old woman was diagnosed with interstitial cystitis (IC) and exhibited most of the typical symptoms, such as urgent, frequent urination and burning and lower abdominal/bladder pain. During her initial treatment sessions, assessments were made to determine her constitutional type, the Chinese medicine pattern of disharmony she was presenting, and a treatment plan for her care. The O'Leary-Sant Interstitial Cystitis Symptom Index and Pain Quality Assessment Scale were the main assessment tools used to determine the tangible effectiveness of her acupuncture treatments. In addition, her mood, affect, outlook on life, and behavioral changes were also monitored. This study highlights eight of this patient's 60- to 90-minute acupuncture and electroacupuncture treatments over two months.

Conclusion
Interstitial cystitis is a complex chronic disorder in which the bladder is inflamed and irritated, causing burning during urination, urgency and frequency of urination, and lower abdominal pain. In this case, the patient experienced a reduction in pain, frequency, and urgency with acupuncture therapy.

she now sees the limitlessness of traditional medicine. Jennifer's treatment philosophy is cultivating the body's own qi to enhance its healing ability. She provides acupuncture, herbal medicine, qigong, nutrition, and healing presence practices to help her patients along their wellness journeys. She resides in Leonardtown, MD, with her husband and young daughter.

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Introduction

Interstitial cystitis (IC) is a chronic autoimmune disorder characterized as benign and non-bacterial, causing hemorrhage of the bladder wall. Many patients experience burning urination, urgency, and urinary tract infection (UTI)-like symptoms, but the symptoms do not respond to antibiotics, nor does urinalysis test positive for bacteria. Patients also experience burning pain in the lower abdomen and vaginal area. About 90% of IC sufferers are women. The urge to urinate may be as frequent as every 10 minutes causing interference in everyday life.

Consequently, IC patients have cognitive, behavioral, emotional, sleep, and sexual complaints (Sönmez & Kozanhan, 2017). Although IC symptoms flare at times of stress, during a menstrual cycle, or with changes in diet, the pain associated with IC can be so severe that sufferers may become suicidal. As the bladder fills with urine, the pain can increase due to pressure on bladder walls. When expanded, capillaries in the bladder walls can hemorrhage, causing excruciating pain. When the bladder is released, the pain lessens. IC is often misdiagnosed because of the close symptoms with a UTI and other bladder conditions, causing a long and complicated diagnosis process. In addition, invasive techniques for diagnosis and treatment often exacerbate the condition. Pharmaceutical interventions include bladder instillations of dimethyl sulfoxide (DMSO), heparin, oxybutynin chloride, disodium cromoglycate, silver nitrate, and Clorpactin.

Several Eastern medicine patterns of disharmony can characterize IC. Damp-heat pouring downward is one of the main patterns described as frequent, urgent, and painful urination with accompanying Heat signs such as thirst, dark or turbid urine, and constipation. A patient may also experience Spleen (SP) qi deficiency, Kidney (KI) yin or yang deficiency, as well as Liver (LR) depression and Damp accumulation (Flaws & Philippe Sionneau, 2007). The main Eastern medicine treatment principles are to reduce pain and support the Spleen, Kidney, and Lung (LU) qi so that these zang organs can better manage fluid transformation and transportation (Tucker, 2004).

Acupuncture treatments have been shown to increase levels of the endogenous opioids serotonin, beta-endorphin, and enkephalin, all of which provide an analgesic effect and lead to better motor function and immunomodulation (Zhang, Lao, Ren, & Berman, 2014). With this said, there is still limited evidence in the literature of acupuncture benefits for IC treatment, especially with autoimmune etiology. The case presented here exemplifies a positive outcome for a patient suffering from IC and receiving relief with acupuncture.

Case Description

The patient is a 66-year-old female. She was diagnosed with interstitial cystitis in 1989. The pain is characterized as dull pain similar to menstrual cramps. However, it can sometimes flare and feel like shards of glass in the vaginal area and groin. The pain is more severe in the morning, and she often experiences burning urination during her first elimination of the day. She was an avid biker and continues to exercise when not in a flareup.

She tried many different therapies before acupuncture over the last 30 years. When beginning acupuncture therapy, she did nerve blocks every few months and at-home bladder installations approximately two times weekly. The installations consisted of 10 ml lidocaine HCl, 1%, 2 ml heparin 20,000 USP, 1-3 ml sodium bicarbonate 8.4%, and 10 ml bupivacaine 0.5%. She retained the liquid in the bladder for 90 minutes, lying supine.

The diagnosis of interstitial cystitis followed examination via hydrodistention of her bladder. Characteristic inflammation and bladder hemorrhaging are seen in Figures 1-3. The images were supplied by the patient.

Figure 1.

Figure 2.

Figure 3.

At the age of 62, the patient retired from a stressful job where she was working in a managerial role. It had been quite challenging for her to attend work while in such pain. Also, soon after the onset of her condition, she left an emotionally unsupportive marriage.

Diagnosis

Traditional Chinese Medicine (TCM) diagnoses can be based on an Eight Principle assessment: whether the condition is interior or exterior, hot or cold, deficient or excess, and yin or yang. Based on the Eight Principles, this patient had an interior, hot, and excess condition. Her Spleen channel near SP9 (*Yin Ling Quan*) and SP6 (*San Yin Jiao*) was sensitive to palpation. She had a strong, full, and wiry pulse on both middle positions and a weak KI yin and KI yang pulse. Her tongue was slightly pale and puffy in the center, dry in the center, with slightly raised and wet sides, teeth marks, and a red tip. By a TCM evaluation, she showed a combination of different patterns: Damp-heat pouring downward as the main one, but also Spleen qi deficiency and Liver qi constraint. Because certain foods could trigger her IC flare-ups, she ate a minimal diet. She limited fruits, sauces, oils, and spices. Her meals included oatmeal, chicken breast, roasted vegetables (broccoli, carrots, cauliflower, potatoes), and some dairy. Snacks included saltine crackers, oatmeal cookies, or potato chips. She tried herbal teas such as marshmallow root but drinking it contributed to her bladder discomfort.

Pain assessment tools used for this patient were the O'Leary-Sant Interstitial Cystitis Symptom Index and the Pain Quality Assessment Scale (PQAS), an extended version of the Neuropathic Pain Scale (NPS). The PQAS provides descriptive questions on the nature of the pain. It helps the practitioner understand what type of pain is present and how the patient perceives it. O'Leary-Sant Interstitial Cystitis Symptom Index provides a specific assessment of symptoms and pain associated with interstitial cystitis.

There are persistent challenges in TCM-based research studies and their application to clinical practice, such as bladder pain treatment. It remains challenging to compare complementary medical systems such as acupuncture with the investigative tools of evidence-based medicine. Specific practitioner training, knowledge and theory, acupoint selection, depth and action of needle insertion, and treatment protocols are not standardized between studies, making it challenging to use research studies as guides to best practice. Indeed, in evidence-based medicine, best practice guidelines are commonly

distilled from secondary analyses of randomized clinical trials, which requires a large body of relatively heterogeneous evidence. More than a single study would be required to inform clinical practice.

Time-tested approaches to bladder pain are summarized in a 2008 article by Giovanni Maciocia, in which he lists five TCM patterns of disharmony associated with IC (Holford & Tucker, 2010):

1. SP qi and KI yang deficiency with yin fire
2. SP qi and KI yang deficiency with Dampness
3. SP qi and KI yang deficiency with qi stagnation
4. SP qi and KI yang deficiency with Blood stasis
5. KI yin deficiency with empty Heat

Through this perspective, the patient's Chinese medicine diagnosis is SP qi and KI yang deficiency with dampness. The patient also exhibits disharmony in the tai yang and shao yin meridian systems. It is important to note that the patient's tongue was swollen with teeth marks and was pale in the center. The SP channel was also sensitive on palpation. These diagnostic clues point to the SP as a focus for treatment.

Damage to the SP (usually due to a diet of rich, greasy, fatty, and sugary foods) can upset the Spleen's transformation and transportation process of fluids in the body, causing dampness. Blockage of the meridians with dampness leads to Heat; since dampness is heavy, it percolates downward into the lower jiao, where the Urinary Bladder and Kidneys reside (Holford & Tucker, 2010). Part of the Spleen's job is to hold blood in the vessels and lift the central qi, i.e., prevent prolapse or sinking. Hemorrhaging in the bladder (BL) and urinary urgency are direct results of Spleen qi deficiency.

Another theory relevant to this case is the tai yang relationship, the interaction between the Heart organ system and the Small Intestine. When an emotional upset affects the Heart (usually involving relationship stress), Heat may form in the upper jiao. The Small Intestine (SI) is charged with shuttling the Heat away from the Heart, and since its paired meridian is the BL, it uses this lower jiao organ to release the Heat. Therefore, BL Heat symptoms resemble a UTI or IC (Tucker, 2004). Relatedly, in a study of 1123 IC patients, 97% had coronary heart disease as a comorbidity (Hung, Chen, Chen, Chiu, & Chen, 2020).

Treatments and Outcomes

The above diagnostic criteria were all relevant to this patient's care. Therefore, the first treatment strategy was to support Spleen qi, Kidney qi, clear Heat, and reduce pain.

Acupoints chosen were *Yin Tang*, auricular Kidney, BL33 (*Zhong Liao*), BL67 (*Zhi Yin*), KI3 (*Tai Xi*), ST36 (*Zu San Li)*, SP9 (*Yin Ling Quan*), SP6 (*San Yin Jiao*), Conception Vessel (CV)3 (*Zhong Ji)*, CV6 (*Qi Hai*), LI4 (*He Gu*), and LR3 (*Tai Chong*). Electrostimulation at 5 Hz milliamperage, continuous, was given for 20 minutes for points BL25 (*Da Chang Shu*) and BL26 (*Guan Yuan Shu*). Each SP, KI, BL, and CV meridian point was reinforced and retained for 20 minutes. LI4 was sedated and retained for 20 minutes. The frequency 5 Hz was selected to stimulate low-frequency response opioid peptides meta- and leu-enkephalins.

When treating the lower part of the body, it is recommended to use a combination of 2 and 100 Hz; the ITO® ES-130® Three Channel Electro Stim Unit was used in this study (Kaltsas, 2022). Each needle was inserted at depth and manipulated until a de qi sensation occurred. After the application of this treatment, the patient had a significant reduction in pain. She exercised on a treadmill, and the pain she felt at the next session was more muscular, which she attributed to the workout, not as an IC symptom.

This treatment was repeated weekly for three weeks with the addition of electroacupuncture on BL33 (*Zhong Liao*) and moxa needles on BL32 (*Ci Liao*) and BL34 (*Xia Liao)*. These additions were made based on different research that found that after three months of this treatment, patients showed a reduction in the O'Leary-Sant Interstitial Cystitis Symptom Index (ICSI) and Interstitial Cystitis Problem Index (ICPI) scores (Katayama & Shitamura, 2013).

The patient took a week off, and subsequent treatments with the points and therapies suggested in the Katayama study did not have the same benefit as the prior SP and KI-focused treatments. The patient experienced a flare-up between treatments and received a nerve block to reduce the pain. By that point, the urinary frequency had reduced significantly and continued for several weeks, but burning pain at first elimination was present.

Results from eight treatments are described in detail in Table 1, below.

Tx #	Tx Principles	Points	Outcomes/Reasoning
#1	Support SP qi, KI qi, clear Heat, and reduce pain	*Yin Tang, auricular Kidney, BL33 (Zhong Liao), BL67 (Zhi Yin), KI3 (Tai Xi), ST36 (Zu San Li), SP9 (Yin Ling Quan), SP6 (San Yin Jiao), CV3 (Zhong Ji), CV6 (Qi Hai), LI4 (He Gu), and LR3 (Tai Chong).* Electrostimulation at 5Hz, continuous, for 20 minutes for points BL25 (*Da Chang Shu*), BL26 (*Guan Yuan Shu*). Each SP, KI, BL, and CV acupoint reinforced and retained 20 minutes. LI4 acupoint sedated and retained 20 minutes.	Significant reduction in pain. She exercised on a treadmill, and the pain she felt at the next session was more muscular, which she attributed to the workout, not an IC symptom.
#2-4	Support SP qi, KI qi, clear Heat, and reduce pain	Treatment #1 repeated Addition of electroacupuncture on BL33 (*Zhong Liao*) and needle moxa on BL33 (*Zhong Liao*) and BL34 (*Xia Liao)* (Katayama & Shitamura, 2013)	Additions were based on research using those points, and finding that after three months, patients showed a reduction in the ICSI and ICPI scores.
#5	Support SP qi, KI qi, clear Heat, and reduce pain	Treatment #2 repeated	The patient did not feel much change in her pain levels after this treatment. Therefore, we cautiously repeated the treatment the following week.
#6	Support SP qi, KI qi, clear Heat, and reduce pain	Treatment #2 repeated	The patient did not feel much change in her pain levels after this treatment. Lapse in treatment.
#7	Clear Husband-Wife block Support SP qi, KI qi, clear Heat, and reduce pain	KI7 (*Fu Liu*), BL67 (*Zhi Yin*), KI3 (*Tai Xi*), LR4 (*Zhong Feng*), each sedated; SJ4 (*Yang Chi*), HT7 (*Shen Men*) *Shen Men, Yin Tang, SP6 (San Yin Jiao), ST36 (Zu San Li), CV4 (Guan Yuan), CV3 (Zhong Ji), LI4 (He Gu), BL33 (Zhong Liao), BL34 (Xia Liao); reinforced or even technique*	We discontinued the needle-moxa technique and electrostimulation.
#8	Reduce pain, resolve Damp, support SP and KI qi	LI4 (*He Gu*), BL60 (*Kun Lun*), KI5 (*Shui Quan*), BL63 (*Jin Men*), BL64 (*Jing Gu*), SP6 (*San Yin Jiao*), SP9 (*Yin Ling Quan*), SP10 (*Xue Hai*), LR3 (*Tai Chong*), LR8 (*Qu Quan*) (Tucker, 2004) GB21 (*Jian Jing*) L (left) and GB20 (*Feng Chi*) were added because of tenderness upon palpation.	The patient felt much better after these last two treatments with pain levels staying around 2-4/10. Immediately after treatment, pain levels dropped to 1-2/10.

Table 1. Acupuncture treatments, points, and outcomes

Patient-Reported Outcome Measures

The patient completed the quality-of-pain assessment questionnaire again, and her numeric pain rating decreased from 4 to 2.5. The quality of pain was the same, as was the location at her lower abdomen near the bladder. The O'Leary Sant assessment showed a reduction in the number of voids per day from 11-14 to 7-10.

Additionally, her at-home bladder installations were reduced from twice a week to once every 10-12 days while receiving acupuncture therapy.

Patient Perspective

“Currently, I manage the IC pain by doing at-home bladder instillations weekly, having a bladder wash in the urologist's office monthly, taking allergy medication to reduce histamine, anti-anxiety medication to control stress, pain medication, pudendal nerve blocks three per year (as needed), acupuncture twice monthly and following the IC diet. I experience pain daily; all of the

treatment options I have listed help to control the pain so I can try to experience activities of daily life. […] My advice to others is if you have IC, I know how you feel, do not give up, try everything you can, and when needed, give yourself permission to rest."

Conclusion

In the Hung et al. study previously mentioned (2020), researchers found that, compared to a non-IC cohort, IC patients demonstrated a higher incidence rate of mental disorders such as depression, anxiety, and insomnia. Mental disorders were also significantly associated with coronary artery disease, cancer, and fibromyalgia in the study. With this information, it is clear that researchers and clinicians should consider incorporating mental health therapies into treatment for IC. The Chinese medicine pattern etiology of Heat from the Heart due to suppressed emotions surging downward to the Bladder is closely associated with the signs and symptoms of IC. More than 90% of IC sufferers are women, and women have been conditioned in Western society to hold back their emotions, especially anger, and frustration (Tucker, 2004). Acupuncture holds some promise for IC patients because it has the potential to address mood, difficult emotions, pain, and dysregulation of fluids in the body–all parameters that characterize IC.

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Disclosure Statement

The authors report no conflicts of interest.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report, and a copy of the written consent is on file with the author.

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