

Clinical Analysis of Acupuncture Combined with Acupoint Injection for the Treatment of Chronic Nonbacterial Prostatitis

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Abstract: *Objective:* To evaluate the therapeutic effect of acupuncture combined with acupoint injection on chronic nonbacterial prostatitis (CNP). *Methods:* A total of 72 CNP patients admitted between March 2022 and October 2023 were selected. The patients were randomly divided into two groups using a random number table. The combined treatment group (36 cases) received acupuncture combined with acupoint injection therapy, while the control group (36 cases) received conventional Western medicine treatment. The overall efficacy rate, symptom severity, prostatic fluid indicators, incidence of adverse reactions, and recurrence rates were compared. *Results:* The overall efficacy rate of the combined treatment group was higher than that of the control group ($P < 0.05$). After 10 days of treatment, the symptom severity score of the combined treatment group was higher than that of the control group, and the prostatic fluid indicators were lower than those of the control group ($P < 0.05$). The incidence of adverse reactions in the combined treatment group was lower than in the control group ($P < 0.05$). During the follow-up period of 1–6 months, the recurrence rate in the combined treatment group was lower than that in the control group ($P < 0.05$). *Conclusion:* Acupuncture combined with acupoint injection can alleviate CNP disease symptoms, improve prostate function, and prevent post-treatment adverse reactions. It also has a lower recurrence risk and demonstrates excellent efficacy.

Keywords: Acupuncture; Acupoint injection; Chronic nonbacterial prostatitis; Symptom severity; Adverse reactions

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1. Introduction

Chronic nonbacterial prostatitis (CNP) is a highly prevalent prostate disease, mainly affecting men over 50 years old. Symptoms include frequent urination, lower abdominal pain, and incomplete urination. The pathogenesis of this disease is complex, involving factors such as microbial infection, endocrine disorders, and immune dysfunction, which significantly reduce the health of the reproductive system. Oral Western medications, particularly antibiotics, are commonly used to treat this disease. These drugs can alleviate symptoms and reduce inflammation in the body, thereby controlling the disease^[1]. However, the treatment cycle of Western medicine

is long and may cause side effects such as abdominal pain or nausea, which can affect long-term efficacy. In contrast, traditional Chinese acupuncture and acupoint injection therapies have the advantages of fewer side effects and significant efficacy. As external, non-invasive treatments, they result in higher patient adherence. Therefore, this study selected 72 CNP patients to evaluate the efficacy of acupuncture combined with acupoint injection therapy.

2. Materials and methods

2.1. General information

A total of 72 CNP patients admitted between March 2022 and October 2023 were selected for the study. They were randomly divided into two groups using a random number table: 36 patients in the combined treatment group and 36 patients in the control group. In the combined group, the patients' ages ranged from 22 to 67 years, with an average age of 40.29 ± 4.37 years, and the disease duration ranged from 0.3 to 6 years, with an average duration of 2.19 ± 0.59 years. In the control group, the patients' ages ranged from 23 to 65 years, with an average age of 40.32 ± 4.41 years, and the disease duration ranged from 0.4 to 7 years, with an average duration of 2.24 ± 0.62 years. There was no significant difference in the general data between the two groups ($P > 0.05$).

Inclusion criteria: Patients exhibiting typical symptoms such as frequent urination, a burning sensation in the urethra, and urinary pain; prostatic palpation revealed inflammatory nodules or an uneven texture in the prostate; prostatic fluid microscopy showed a white blood cell count of no fewer than 10/high-power field (HP); clinical data were relatively complete; the patients met the indications for acupuncture and acupoint injection.

Exclusion criteria: Urethral stricture; bacterial prostatitis; bladder neck hypertrophy; comorbid heart, liver, or kidney disease; hematologic disorders; allergies to the study medication; withdrawal from the study midway.

2.2. Methods

The control group received conventional Western medicine treatment: oral administration of Azithromycin capsules, taken 30 minutes after meals, with a dose of 0.5 g once daily for 10 days.

The combined treatment group received acupuncture combined with acupoint injection therapy:

- (1) **Acupuncture:** Patients were placed in a supine position, and the acupoints were disinfected with 75% alcohol cotton balls. A 1.5-inch acupuncture needle (Huatuo brand) was used to quickly insert into Baihui, Sanyinjiao, and Xuehai acupoints at a depth of 1.0–1.5 inches. Another 1.5-inch acupuncture needle was used to insert into Guanyuan and Zhongji acupoints at a depth of 1.0–1.5 inches, applying the lifting, thrusting, and twisting method until a sensation of soreness, distension, or pain was achieved. The needles were retained for 30 minutes and then quickly removed, with the needle holes disinfected with alcohol. For those with bleeding, sterile cotton balls were applied for pressure to stop the bleeding. Next, patients were placed in a prone position, and the following acupoints were treated: Shenshu, Zhishi, Zhibian, Mingmen, Pishu, and Ciliao, using the same needle retention time as before.
- (2) **Acupoint injection:** After acupuncture treatment, acupoint injection was performed at the Zhibian and Ciliao acupoints. The needle was inserted to a depth of 3 cm, and if no blood was drawn upon aspiration, Houltuynia injection was administered, with a total dose of 4 ml. After withdrawing the needle, the needle holes were disinfected with sterile cotton balls to prevent infection. Acupuncture and acupoint injections were performed once daily for 10 days.

2.3. Observation indicators

- (1) Symptom severity: The National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI) was used, which includes pain or discomfort (40 points), quality of life (6 points), impact of symptoms (6 points), and urinary symptoms (10 points), for a total of 62 points. Symptom severity was scored positively.
- (2) Prostatic fluid indicators: Before and after treatment, 1 mL of prostatic fluid was collected, and secretory immunoglobulin A (SIgA) and vascular cell adhesion molecule-1 (VCAM-1) levels were measured using enzyme-linked immunosorbent assay (ELISA).
- (3) Incidence of adverse reactions: Observing adverse reactions such as abdominal pain, hematoma, nausea, and needle fainting.
- (4) Recurrence rate: Patients were followed up for 1 to 6 months, and the recurrence rate was recorded.

2.4. Efficacy evaluation criteria

- (1) Cure: No disease symptoms, normal prostate texture, normal prostatic fluid test results, and no recurrence during 6 months of follow-up.
- (2) Significant efficacy: Mild symptoms, nearly normal prostate texture, a reduction in white blood cell count by $\geq 60\%$.
- (3) Preliminary efficacy: Moderately obvious symptoms, uneven prostate texture with tenderness, a reduction in white blood cell count by 30%–59%.
- (4) No efficacy: Severe symptoms, hardened prostate texture, a reduction in white blood cell count by $< 30\%$.

2.5. Statistical analysis

Data were processed using SPSS 21.0 software. Measurement data were expressed as mean \pm standard deviation (SD) and compared using *t*-tests. Count data were expressed as [*n* (%)] and compared using χ^2 -tests. Statistical significance was set at $P < 0.05$.

3. Results

3.1. Comparison of overall efficacy between the two groups

Table 1 shows that the overall efficacy of the combined treatment group was higher than that of the control group ($P < 0.05$).

Table 1. Comparison of overall efficacy between the two groups [*n* (%)]

Groups	<i>n</i>	Cure	Significant efficacy	Preliminary efficacy	No efficacy	Overall efficacy
Combined treatment group	36	16 (44.44)	10 (27.78)	9 (25.00)	1 (2.78)	35 (97.22)
Control group	36	6 (16.67)	13 (36.11)	10 (27.78)	7 (19.44)	29 (80.56)
χ^2	-	-	-	-	-	5.063
<i>P</i>	-	-	-	-	-	0.024

3.2. Comparison of symptom severity scores between the two groups

Before treatment, there was no significant difference in symptom severity scores between the two groups ($P > 0.05$). After treatment, the symptom severity scores in the combined group were lower than those in the control group ($P < 0.05$). See **Table 2**.

Table 2. Comparison of symptom severity scores between the two groups before and after treatment (mean \pm SD, points)

Groups	n	Pain or other discomfort		Quality of life		Symptom impact		Urinary symptoms	
		Before	After	Before	After	Before	After	Before	After
Combined treatment group	36	20.15 \pm 3.16	34.16 \pm 3.87	2.59 \pm 0.74	4.68 \pm 0.97	2.71 \pm 0.33	4.70 \pm 0.41	4.26 \pm 0.88	7.18 \pm 1.29
Control group	36	20.19 \pm 3.21	30.11 \pm 3.79	2.62 \pm 0.78	4.15 \pm 0.92	2.75 \pm 0.36	4.23 \pm 0.37	4.29 \pm 0.87	6.57 \pm 1.22
<i>t</i>		0.053	4.486	0.167	2.379	0.491	5.106	0.145	2.061
<i>P</i>		0.958	0.000	0.868	0.020	0.625	0.000	0.885	0.043

3.3. Comparison of prostatic fluid indicators between the two groups

Before treatment, there was no significant difference in prostatic fluid indicators between the two groups ($P > 0.05$). After treatment, the prostatic fluid indicators in the combined group were significantly better than those in the control group ($P < 0.05$), as shown in **Table 3**.

Table 3. Comparison of prostatic fluid indicators between the two groups before and after treatment (mean \pm SD, ng/mL)

Groups	n	SIgA		VCAM-1	
		Before	After	Before	After
Combined treatment group	36	117.95 \pm 12.36	59.28 \pm 5.91	93.75 \pm 10.27	51.23 \pm 4.38
Control group	36	117.82 \pm 12.15	85.41 \pm 6.13	93.71 \pm 10.22	71.92 \pm 6.47
<i>t</i>	-	0.045	18.412	0.017	15.889
<i>P</i>	-	0.964	0.000	0.987	0.000

3.4. Comparison of adverse reaction rates between the two groups

Table 4 shows that the adverse reaction rate in the combined group was lower than that in the control group ($P < 0.05$).

Table 4. Comparison of adverse reaction rates between the two groups [*n* (%)]

Groups	n	Abdominal pain	Hematoma	Nausea	Needle fainting	Adverse reaction rate
Combined treatment group	36	0	0	1 (2.78)	1 (2.78)	2 (5.56)
Control group	36	3 (8.33)	3 (8.33)	2 (5.56)	0	8 (22.22)
χ^2	-	-	-	-	-	4.181
<i>P</i>	-	-	-	-	-	0.041

3.5. Comparison of recurrence rates between the two groups

At different follow-up times, the recurrence rate in the combined group was lower than that in the control group ($P < 0.05$), as shown in **Table 5**.

Table 5. Comparison of recurrence rates between the two groups [*n* (%)]

Groups	<i>n</i>	Follow-up 1 month	Follow-up 3 month	Follow-up 6 month
Combined treatment group	36	0	1 (2.78)	1 (2.78)
Control group	36	4 (11.11)	6 (16.67)	7 (19.44)
χ^2	-	4.235	3.956	5.063
<i>P</i>	-	0.040	0.047	0.024

4. Discussion

Chronic prostatitis is a high-risk urinary system disease, which can be subdivided into bacterial and non-bacterial inflammation, with CNP being the most common form [2]. The symptoms of this disease include difficulty urinating, lumbosacral pain, frequent urination, etc. The causes involve poor lifestyle habits, endocrine disorders, and other factors, which increase the physical and mental burden on patients and may even lead to serious complications. Western medicine, primarily azithromycin, is the basic treatment for this disease, as it effectively reduces inflammation and clears prostate infections, thereby improving treatment outcomes [3,4]. However, the curative effect of Western medicine is often limited, necessitating the combination with other therapies.

According to traditional Chinese medicine, CNP falls under the category of “Jing Zhuo” (essence turbidity), and its etiology involves factors such as long-term fatigue, excessive alcohol consumption leading to weakened immunity, excessive sexual activity, endocrine dysfunction [5], and chronic congestion of the prostate. The pathological basis includes inflammatory infiltration of glandular epithelium and destruction of glandular epithelium. The disease mechanism involves kidney Qi deficiency, damp-heat stagnation, and blood stasis interacting with each other. Based on these mechanisms, this study selected acupuncture combined with acupoint injection as the treatment. Acupuncture can adjust the balance between organs, enhance the metabolic ability of prostate tissue, improve its repair capacity, and regulate local microcirculation to promote the absorption of inflammatory reactions [6].

In terms of acupoints, Baihui is selected to boost central Qi and improve microcirculation, while Guanyuan enhances the phagocytic function of leukocytes and regulates immune function. Sanyinjiao facilitates the lower jiao, Xuehai harmonizes and nourishes blood, and Guanyuan and Zhongji improve prostate microcirculation and stimulate the nerves in the perineal area. The combination of Guanyuan, Zhongji, and Sanyinjiao has the effect of consolidating the foundation, eliminating dampness, and strengthening the spleen. Acupuncture at Shenshu, Pishu, Zhishi, and Mingmen also supports both prenatal and postnatal aspects [7]. Additionally, the Shenshu point helps to tonify the kidneys and consolidate essence.

Acupoint injection is a widely used local drug delivery method, allowing the drug to directly reach the treatment site while minimizing drug loss. Houத்துynia injection was selected for acupoint injection due to its anti-inflammatory, stasis-resolving, analgesic, diuretic, and dampness-eliminating effects. Its main components, flavonoids, and volatile oils, possess strong anti-inflammatory and antibacterial properties, as well as the ability to enhance immunity [8].

The results showed that the overall efficacy of the combined treatment group was higher than that of the control group. After 10 days of treatment, the symptom severity score of the combined group was higher than that of the control group, and the prostatic fluid indicators were lower than those of the control group. The adverse reaction rate in the combined group was lower than in the control group. During follow-up from 1 to 6 months, the recurrence rate in the combined group was lower than in the control group ($P < 0.05$). These findings are consistent with those of Guo and Wang [9]. The reason is that acupuncture can improve endocrine levels, enhance the glandular secretion function, and produce nerve stimulation at the related acupoints, thereby increasing catecholamine secretion,

regulating vascular permeability, and reducing prostatic inflammatory exudation and glandular edema ^[10]. The combined effect of acupoint injection provides quick results with lower drug doses, allowing it to resolve stasis, expel pus, clear heat, detoxify, and eliminate dampness, thereby alleviating CNP symptoms ^[11].

In conclusion, acupuncture combined with acupoint injection can improve CNP symptoms, regulate prostate function, reduce treatment side effects, and lower the long-term recurrence rate, demonstrating significant clinical efficacy.

Disclosure statement

The authors declare no conflict of interest.

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