

Study strategies for acupuncture treatment of chronic nonbacterial prostatitis

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ABSTRACT: By retrospectively reviewing the current status of traditional Chinese medicine (TCM) and Western medicine treatments of chronic nonbacterial prostatitis (CNP), the TCM understanding of its etiologies and pathogenesis, the therapeutic principles and the mechanisms of acupuncture treatment of CNP, the clinical study strategies of acupuncture treatment for CNP were further proposed, which could provide more scientific basis and support for the definite longer-term therapeutic efficacy of acupuncture treatment of CNP. Breakthrough in the treatment of CNP will be achieved with the application of acupuncture therapy both in clinical practice and experimental research.



KEYWORDS: prostatitis; acupuncture; review

Chronic nonbacterial prostatitis (CNP) is a common, difficult and obscure disease among adult male. It is marked by perineal pain radiating to genital area, urinary symptoms and ejaculatory disturbance, which has great impacts on physiological and psychological status and quality of life (QOL) of patients. According to the statistics^[1], about 50% of males are suffered from prostatitis during some certain period of their life. With changes of life style and fierceness of social competition, CNP has the tendency of higher prevalence. In clinical practice, due to the complicated symptoms, susceptibility to relapse and obstinacy to cure, it puzzles many doctors. At present, how to alleviate clinical symptoms and enhance the

QOL and fertility of the patients becomes the treatment objective. Recently, some clinical and experimental studies of traditional Chinese medicine (TCM) on CNP^[2-4] have demonstrated the potentiality of acupuncture treatment for CNP, with positive therapeutic effects, obvious alleviation of symptoms and no serious adverse effects. Hence, by exploring the clinical study strategies of acupuncture treatment for CNP, this paper may help to further improve the clinical efficacy and reveal the mechanism of acupuncture in treating CNP.

1 Current status of CNP treatment

According to the classification of the US National

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Institutes of Health, CNP belongs to the type III A of prostatitis, accounting for 60% to 65% of the total occurrence. The etiology of CNP remains an enigma, which is thought to be the result of multiple factors such as urine backflow, sympathetic stimulation, immunoreaction, venous congestion in pelvic cavity and microbial infection, etc^[5]. Hence, symptomatic treatment is emphasized and antibacterial agents are the priority for treatment. Besides, other categories of drugs and methods such as analgesics, muscle relaxants, α -blockers, 5- α -reductase inhibitors, intraprostatic drug injection, prostatic massage, among others, are also advocated^[6]. However, on the one hand, due to localized tenderness and lipid solubility of the fibromuscular stroma, it requires high pH value and lipid solubility of antibiotics, and plenty of antibiotics could neither enter into the glandular organ through the fibrous capsule nor reach the effective bacteriocidal concentration due to low effective concentration^[7]. On the other hand, due to the long-term application of the antibiotics, drug resistance occurs. Hence, the CNP treatment is a challenging task, which needs further studies.

TCM has its own explanations and viewpoints on CNP's etiology and pathogenesis and there are unique TCM therapeutic principles and herbal and acupuncture prescriptions. It belongs to the disease categories of "stranguria with turbid urine" or "turbid essence", which asserts that masturbation or overindulgence of sexual life may cause the insecurity and excretion of the essence qi, and overdrinking or overtaking of pungent, spicy and fatty food could accumulate dampness-heat and obstruct the lower energizer. Consequently it could lead to turbid essence, and after a long time, qi stagnation and blood stasis could damage the kidney qi. The basic pathogenesis is deficiency in origin and excess in superficiality, and there are three important pathogenic links, namely, kidney deficiency, dampness-heat and blood stasis. Hence, according to syndrome differentiation, there are different therapeutic principles such as activating blood and eliminating blood stasis, clearing heat and expelling dampness and soothing

liver qi, etc. In recent years, with the TCM therapeutic principles of unblocking collaterals, eliminating dampness, soothing liver qi and activating blood, the integrated traditional acupuncture and modern techniques are applied in the clinical practice. The comprehensive methods such as electroacupuncture, laser acupoint irradiation, warm needling, thermal moxibustion, herbal injection into acupoints, etc, which have definite therapeutic efficacy, low cost and less adverse effects are worth being popularized^[8].

2 TCM understanding of CNP and acupuncture treatment

According to TCM syndrome differentiation of zang-fu organs, the prostate is closely correlated to the kidney, bladder, triple energizer, liver, spleen and lung. The kidney governs the essence. The bladder, which stores water, is interiorly related to the kidney. The liver governs soothing qi and regulates qi activity. The triple energizer governs qi activity and transportation of water. The spleen governs transportation and transformation of water and dampness. The lung governs water passage. These viscera mentioned above are closely related to the functions of essence storage and qi activity of the prostate. From the perspective of meridian distribution, the prostate is closely related to the conception, thoroughfare and governor vessels, kidney meridian, bladder meridian and liver meridian. Among them, the three vessels originate from the perineum. The kidney meridian ascends along the spine and enters the abdomen, which pertains to the kidney and connects the bladder. The bladder meridian passes through the buttock, which pertains to the bladder and connects the kidney. The liver meridian runs around the external genitalia and crosses the midline up to the lower abdomen. The distributions of these meridians are correlated to the prostate.

In the acupuncture treatment of CNP, the classical TCM therapeutic methods such as unblocking meridians and collaterals, soothing qi and activating blood, invigorating spleen and eliminating dampness and tonifying liver and kidney are always applied. Since the conception and governor vessels and the bladder, liver, spleen and kidney meridians pass



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through the prostate, clinically, the acupoints such as Guanyuan (CV4), Zhongji (CV3), Qugu (CV2), Ciliao (BL32), Yinlingquan (SP9), Sanyinjiao (SP6), Taichong (LR3), Taixi (KI3), among others, are usually selected. During the treatment, qi arrival is emphasized, and the conduction to the low abdomen and perineum is intended to make the needling sensation act on location of the disease so as to increase the therapeutic effect.

3 Pathogenic mechanism of CNP and acupuncture intervention

Western medicine asserts that the occurrence of CNP is correlated to different factors such as immunological dysfunction and venous congestion in pelvic cavity. At present, the studies of acupuncture treatment of CNP are mostly focused on immunological regulation and microcirculation. According to the literature^[9], acupuncture treatment could increase the content of secreted immunoglobulin A in the prostatic fluid and rectify the local immune function of the prostate. Zhang *et al*^[10] conducted an experiment concerning the influence of acupuncture intervention on the content of interleukin-2 and testosterone in a rat model of prostatitis. The results showed that after the modeling, the contents of interleukin-2 and testosterone significantly lowered than those of the normal control group. After treatment, the two indexes significantly increased and almost reached to normal level, indicating that acupuncture could regulate the endocrine function and rectify the abnormal immune function. Liu *et al*^[11,12] also conducted an experiment concerning the influence of electroacupuncture intervention on the content of tumor necrosis factor- α (TNF- α) and the expression of intercellular adhesion molecule 1 (ICAM-1). The results showed that after modeling, the content of TNF- α and the expression of ICAM-1 significantly increased, and after acupuncture intervention, the two indexes decreased compared with before, indicating that acupuncture could relieve edema and inflammatory infiltration around the prostate and reduce local inflammatory reactions.

4 Clinical study strategies for acupuncture treatment of CNP

Due to the special anatomical structure of the prostate, oral drug administration may not have satisfactory effects, and it was reported that there was only 30% effective rate for oral administration in the first four months of treatment^[13]. Acupuncture could alleviate the clinical symptoms, improve the immunity, enhance the QOL of the patients and shorten the therapeutic courses^[14]. What's more, based on the TCM syndrome differentiation, some experimental acupoints such as Shenmen (HT7), Sishenchong (EX-HN1) and Neiguan (PC6) could be selected to alleviate the symptoms and relieve the psychological burden

for the patients^[15,16].

According to the literature referred, during the acupuncture treatment of CNP, the acupoints on the conception vessel and the bladder, stomach, spleen, liver and kidney meridians are commonly selected. However, the acupoint selection is usually empirical, which lacks rigorous scientific basis. Hence, the specificity of the meridians and acupoints such as the conception vessel, the bladder, spleen, liver and kidney meridians and Guanyuan (CV4), Zhongji (CV3), Zhibian (BL54), etc, should be focused in further studies. For instance, taking advantages of the modern advanced techniques such as infrared imaging, genomics and laser Doppler, we could learn the correlation between CNP and the physiology and pathology of the conception vessel and the bladder meridian. This could provide new theoretical basis for the acupoint selection in the clinical practice. With the integration of traditional syndrome differentiation and the achievement of the scientific research, it could enrich the core content of acupuncture and promote the modernization development of acupuncture.

With the development of modern biopsychosocial medical model, clinically, the medical staff should not only focus on the physiological changes of the patients, but also take others such as the psychological and social factors into consideration. According to the reports, about 85% of prostatitis accompanied with psychological disorders such as depression and anxiety^[17], which makes the condition much more complicated. Hence, during the treatment, it is necessary to conduct psychological guidance and have more communication with the patients. By explaining detailed situation and introducing the previous effective cases, it could make the patients have more confidence of the treatment and relieve his anxiety and pressure. For the patients, lifestyle regulation and self-management during the treatment should be encouraged. According to classical TCM experience, suggestions such as developing good lifestyle and keeping regular resting time and sexual activity, taking more exercise, drinking more water, taking hot baths, and avoidance of spices, alcohol, sedentariness, masturbation, sexual indulgence or ejaculation reservedness, etc, might be helpful and may improve the clinical therapeutic efficacy, promote rehabilitation and reduce relapse.

Research on the mechanism of acupuncture treatment for CNP has made some progress, and acupuncture could regulate the body functions through the neuroendocrine-immune network^[9-12]. It was reported that the neuroendocrine system could regulate the immune response, and vice versa^[18]. Hence, studies on mechanism of acupuncture in treating CNP and the animal modeling could be further developed. Meanwhile, it is necessary to explore more indexes with specificity and sensitivity,

which could provide more theoretical basis for further popularization of acupuncture treatment in the clinical practice. The authors firmly believe that broader research in acupuncture therapies for CNP would help further understanding in future clinical and experimental studies.

5 Competing interests

The authors declare that they have no competing interests.

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小议针刺治疗慢性非细菌性前列腺炎

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摘要:在回顾中西医对慢性非细菌性前列腺炎治疗现状及中医病因病机的认识、针灸治则及针灸治病机制研究的基础上,本文进一步提出针灸治疗本病的临床研究思路,为针灸治疗慢性非细菌性前列腺炎的确切临床疗效提供更有力的支持。针灸治疗慢性非细菌性前列腺炎的研究将在进一步的临床及实验研究中取得进展。

关键词: 前列腺炎; 针刺; 综述