

The Application of Appropriate Traditional Chinese Medicine Techniques in the Rehabilitation Nursing of Neurogenic Bladder

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Abstract: The purpose of this study was to explore the application of TCM-appropriate technology in neurogenic bladder rehabilitation nursing. Firstly, the background and contents of the study were introduced. Then, it summarizes the definition and development of TCM-appropriate technology and expounds the main therapy and application of TCM-appropriate technology in the rehabilitation nursing field. Besides, the pathophysiological characteristics, rehabilitation nursing measures, and rehabilitation difficulties of the neurogenic bladder are described. Then, the application method, effect and prospect of TCM-suitable technology in rehabilitation nursing of neurogenic bladder are described. In addition, the object, method, result analysis, and conclusion of the experimental study are introduced, the main results of this study are summarized, and the future research direction is prospected. In summary, this study aims to provide effective TCM-appropriate technology for neurogenic bladder rehabilitation nursing and provide a reference for clinical practice and theoretical research in related fields.

Keywords: Appropriate techniques of traditional Chinese medicine; Neurogenic bladder rehabilitation nursing; Application

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1. Introduction

Neurogenic bladder is a dysfunction of the bladder due to damage or lesions of the nervous system. Planned drinking water, intermittent catheterization, and bladder function training are common interventions in rehabilitation care for neurogenic bladder after stroke or spinal cord injury. The TCM-appropriate technique is a treatment method that integrates TCM theories and techniques to promote the body's self-repair and recovery of functions. In the field of neurogenic bladder rehabilitation nursing, TCM-appropriate technology has been gradually considered and applied for its unique advantages and curative effects, including moxibustion treatment, acupuncture treatment, manual treatment and so on. The current research results show that TCM comprehensive

rehabilitation nursing can regulate and balance the movement of qi and blood in the body, promote the recovery and regulation of the nervous system, improve the function of the bladder, and play an important role in the establishment of bladder balance state, but there is still a lack of high-quality evidence-based medical evidence. This study evaluated the clinical efficacy of TCM-appropriate technology in the treatment of patients with neurogenic bladder through a controlled trial, to provide a reference for the clinical promotion of TCM-appropriate technology and the clinical practice and theoretical research in related fields.

2. Materials and methods

2.1. General information

In this study, 31 patients diagnosed with neurogenic bladder dysfunction after spinal cord injury and stroke who were admitted to the rehabilitation department of the hospital from July 2021 to December 2023 were selected and randomly grouped according to the order of admission, with the odd number as the observation group (16 cases) and the even number as the control group (15 cases). In the observation group, there were 10 males and 6 females; 30 to 68 years old, a mean (50 ± 1.2) years old; The duration of the disease was 3 to 10 months, with an average of (4.25 ± 1.03) months. In the control group, there were 11 males and 4 females; 32 to 70 years old, mean (48.26 ± 4.15) years old; The duration of disease was (5.32 ± 1.25) months from 4 to 12 months. There was no significant difference in the general data between the two groups ($P > 0.05$), indicating comparability.

2.2. Inclusion and exclusion criteria

Inclusion criteria: (1) Patients diagnosed with stroke or spinal cord injury with neurogenic bladder-related symptoms; (2) Had survived spinal shock^[1]; (3) The catheter was removed; (4) Course of disease > 3 months < 1 year; (5) Adults; (6) Patients know and consent to participate in the study.

Exclusion criteria: (1) Abnormal structural anatomy of the urinary system; (2) Organic lesions of the bladder; (3) Serious diseases of vital organs such as the heart, brain and kidney; (4) Cognitive dysfunction or mental illness; (5) Patients with severe urinary tract infections.

2.3. Methods

2.3.1. Control group

The control group was given routine nursing, drinking water schedule, regular urination, intermittent catheterization, bladder function exercise, etc.

2.3.2. Observation group

The observation group was given the appropriate technical intervention of traditional Chinese medicine based on the control group for 20 days, specifically as follows:

- (1) Acupuncture therapy is a traditional Chinese medicine technology, through stimulating acupuncture points, regulating meridians, balancing Yin and Yang, improve the function of the bladder to achieve the purpose of treatment, and the efficacy is better than simple intermittent catheterization and bladder function training^[2]. 25 minutes each time, once a day, take Zhongji, Guanyuan, Shenshu, Zhaohai, Taixi and other points^[3];
- (2) The dragon pot treatment integrates the characteristics of moxibustion, cupping and Guasha and other

traditional Chinese medicine techniques, by stimulating the meridians and points related to the urinary system, such as Sanyinjiao, middle pole, etc., its warm stimulation and negative pressure effect ^[4], can promote the local Qi and blood operation, enhance the blood circulation of the bladder and its surrounding tissues, help regulate the meridians of the kidney and bladder, enhance the restraint ability of the bladder, improve the bladder work-energy. 20 minutes once a day;

(3) Acupressure patients lie flat on the bed after emptying the bladder for acupressure ^[5], the use of the index finger, middle finger, ring finger abdominal pressure Guanyuan, Qi Hai, waterway, Yin Ling Quan, Qu bone, middle pole, Mingmen, Waiyanguan, Zusanli, Sanyinjiao and other acupoints, from light to heavy, press 3–5 minutes each time, 3 times a day;

(4) Wrist ankle needle to double down 1, 2 areas, 1 times a day, leave the needle for 30 minutes to 1 hour.

2.4. Observe the indicators

2.4.1. Bladder volume measurement [6]

Before and after treatment, musculoskeletal ultrasound technology and simple bladder volume pressure measurements were used to calculate the safe bladder volume ^[7], residual urine volume, bladder pressure and bladder compliance of the two groups of patients.

2.4.2. Urination conditions

During the observation period, water intake, frequency of urination, 24-hour urination volume, frequency of urination, urgency of urination and incontinence of patients in both groups were measured and recorded before and after treatment.

2.4.3. Therapeutic effect

The therapeutic effect was divided into effective, ineffective and obvious effects. The obvious effect, after treatment can urinate by itself, and the residual urine volume is less than 60 mL, can better control the urination process, no frequent urination, urgent urination, incontinence, dysuria and other phenomena. For effective, after treatment, the number of spontaneous urination increased, and the residual urine volume was 100-150ml, no obvious frequency of urination, urgency of urination, dysuria, and occasionally stress incontinence. After the ineffective treatment, patients could not urinate by themselves or the residual urine volume after urination exceeded 200 mL.

Total effective rate = significant effective rate + effective rate

2.4.4. Nursing satisfaction

According to the nursing situation and patient experience, it is divided into satisfaction, general satisfaction, and dissatisfaction.

2.5. Statistical analysis

Statistical analysis was performed by SPSS 22.0. Statistical data were expressed as rates and χ^2 test was used. Residual urine volume and time to return to autonomous urination were expressed as mean \pm standard deviation (SD) by *t*-test, and $P < 0.05$ was considered as significant difference.

3. Results

The comparison of clinical effects between the two groups is shown in **Table 1**. The effective rate of the observation group is 93.7%, and the effective rate of the control group is 73.3%, the difference between the two groups is statistically significant ($P < 0.05$).

Table 1. Comparison of clinical effects between the two groups

Group classification	<i>n</i>	Show effect	Effective	No effect	Total valid [ex. (%)]
Observation group	16	12	3	1	15 (93.7)
Control group	15	4	7	4	11 (73.3)

The recovery time and residual urine volume of the two groups were analyzed, and the residual urine volume was measured by ultrasonic scanner from three dimensions^[8]. There was a significant difference between the two groups ($P < 0.05$) (**Table 2**).

Table 2. Comparison of spontaneous urination recovery time and residual urine volume between the two groups

Group classification	Number of examples	Spontaneous urination Recovery time (d)	Residual urine volume (mL)
Observation group	16	9.24 ± 3.2	42.5 ± 14.24
Control group	15	16.4 ± 3.15	86.5 ± 22.3

The nursing satisfaction of the two groups was analyzed, and the difference between the two groups was significant ($P < 0.05$) (**Table 3**).

Table 3. Comparison of nursing satisfaction between the two groups

Group classification	Satisfaction	Generally satisfied	Dissatisfied	Satisfaction rate (%)
Observation group	13	2	0	100
Control group	10	3	2	86.6

The study observed that in neurogenic bladder rehabilitation nursing with appropriate techniques of Chinese medicine, patients' symptoms were significantly relieved. By recording the changes in patients' symptoms such as frequency of urination, urgency of urination, and incontinence, the study found that these symptoms were reduced to varying degrees in the period after treatment. This indicates that the appropriate technology of Chinese medicine has a significant effect on neurogenic bladder rehabilitation nursing. The study carried out the urine flow mechanics examination and observed that the patient's urine flow velocity increased significantly after the treatment with the appropriate technique of traditional Chinese medicine. By comparing the urine flow velocity data before and after treatment, this study found that the urine flow velocity was significantly increased after treatment, which indicates that the appropriate technology of TCM has a positive impact on improving the parameters of urine flow mechanics in patients.

In addition, this also carried out the bladder-emptying examination, and the results showed that the bladder emptying function of the patient was significantly improved after treatment with appropriate techniques of TCM. After treatment, the bladder emptying time of patients was significantly shortened, and the bladder emptying rate

was significantly increased. This indicates that the appropriate technology of traditional Chinese medicine plays a positive role in improving the bladder-emptying function of patients.

The study also performed related physiological indicators, including musculoskeletal ultrasound and urine composition analysis. The results showed that the residual urine volume was within the normal range after the treatment with the appropriate technique of traditional Chinese medicine, and the relevant indexes in the urine composition analysis also changed significantly. This indicates that the appropriate technology of TCM has a significant effect on regulating the physiological indicators related to bladder function.

4. Discussion

Neurogenic bladder is a bladder dysfunction caused by injury or lesion of the nervous system, commonly seen in spinal cord injury, stroke, and other diseases. According to the different injury planes and injury degrees, it can lead to different types of lower urinary tract dysfunction, mainly including detrusor overactivity, detrusor muscle-bladder neck coordination disorder, clinical manifestations of frequent urination, urgent urination, urinary incontinence, dysuria, urine retention, etc., to the patient's life and psychological burden, effective nursing intervention plays an important role in its rehabilitation process. Routine indwelling urinary tube care, drinking water plan, intermittent catheterization, and other routine nursing measures have a certain effect^[9], but the need for rehabilitation time is longer, and long-term intermittent catheterization, prone to urethral injury and urinary tract infection and other problems, especially female patients, easy to insert the urinary tube into the vagina by mistake, causing cross-infection, the patient's ability to live a greater impact. Due to the complexity of nerve injury, the rehabilitation process needs to be considered by multiple factors. In the view of these characteristics, it is necessary to find an effective, simple and economical rehabilitation program to promote the recovery and regulation of the nervous system, improve bladder function, and improve the rehabilitation level and quality of life of patients are of great significance.

TCM-appropriate technology is a comprehensive treatment method, which is applied based on TCM theory and ADAPTS to the physiological and pathological characteristics of patients and the needs of rehabilitation nursing. The development of TCM-appropriate technology is inseparable from the in-depth study of traditional Chinese medicine theory and the application and innovation of modern medical technology. The key to the definition and development of TCM-appropriate technology lies in the full exploration and understanding of traditional Chinese medicine theory, combined with the application of modern scientific and technological means in rehabilitation nursing.

In the application of appropriate techniques of traditional Chinese medicine, acupuncture therapy is widely used in neurogenic bladder rehabilitation nursing^[10]. Acupuncture therapy, as one of the traditional Chinese medicine therapies, regulates the function of the bladder and the balance of the nervous system by stimulating specific acupoints, thus improving the bladder urination function. Wrist and ankle needle is a unique acupuncture therapy, acupuncture through the skin → collaterals → channels → organs → viscera to stimulate the skin of the meridian qi, take the ankle point under the 1 area of the main bladder and kidney, can open the Ren pulse so that the bladder gasification function can be restored to normal, urination Tongli to achieve the therapeutic effect, improve the bladder function of rehabilitation effect^[11].

The massage technique is also one of the commonly used treatment methods of traditional Chinese medicine. By massaging the lumbosacral acupoints, the relevant parts are stimulated to promote local blood circulation,

relieve lumbar acid pain, and indirectly regulate the bladder function, improve the bladder nerve conduction function, enhance the bladder contraction performance, thereby improving the effect of bladder rehabilitation. Acupoint application of Chinese medicine can also be absorbed through the skin, directly acting on the local tissue, without gastrointestinal administration, no damage to the spleen and stomach and improve the function of bladder tissue.

TCM physical exercise is also an indispensable part of TCM rehabilitation treatment. For the rehabilitation of neurogenic bladder, proper sports can stimulate the contraction and relaxation of the bladder and pelvic floor muscles, improve the coordination and control of the pelvic muscle group to improve the symptoms of incontinence^[12], frequency of urination, urgency of urination and so on. For example, Baduanjin, pelvic floor muscle exercise, urination control exercises and other exercise therapy, all help to restore the normal function of the bladder.

Appropriate techniques of traditional Chinese medicine emphasize the comprehensive conditioning of the overall health of the human body. Traditional Chinese medicine theory holds that the health of the human body is maintained by the coordination and unified movement of various organs, tissues and systems. Therefore, TCM-appropriate techniques focus on repairing and restoring the normal function of the body by adjusting and balancing the Yin and Yang, Qi and blood within the body. This feature makes TCM-appropriate technology have unique advantages in neurogenic bladder rehabilitation nursing. By means of acupuncture, massage, Chinese medicine decoction, exercise therapy, etc., the nervous system, endocrine system and bladder-related muscles and tissues are regulated to promote the recovery and improvement of bladder function.

Appropriate techniques of traditional Chinese medicine advocate individualized and integrated treatment methods. According to the specific situation of the individual, the targeted treatment plan is adopted, and different treatment methods can be matched with each other to form an integrated treatment model. For example, in neurogenic bladder rehabilitation nursing, the appropriate technology of traditional Chinese medicine can be combined with acupuncture, dragon pot, acupoint massage application, wrist and ankle acupuncture, herbal fumigation and washing therapy and other methods to improve the efficacy of comprehensive treatment. Appropriate techniques of traditional Chinese medicine focus on prevention and rehabilitation. TCM emphasizes “treating no disease,” that is, taking corresponding measures when the disease does not occur to prevent further deterioration of the condition. Therefore, in neurogenic bladder rehabilitation nursing, you can prevent further damage to bladder function and promote rehabilitation through good living habits, diet conditioning and psychological counseling. As a comprehensive means of rehabilitation nursing, the appropriate technology of traditional Chinese medicine has important application value in neurogenic bladder rehabilitation nursing^[13].

5. Conclusion

The study confirms that Traditional Chinese Medicine (TCM)-appropriate technology significantly improves neurogenic bladder rehabilitation. Techniques like meridian conditioning, acupressure, and drug application effectively restore bladder function, with the experimental group showing greater improvement in bladder control and reduced urinary incontinence compared to the control group^[14].

Moreover, TCM techniques provide lasting benefits. Follow-up studies show that patients maintain stable bladder function without recurrence. Additionally, TCM methods support psychological well-being, reducing anxiety and depression through techniques such as massage and dragon pot treatment. TCM rehabilitation nursing

is valued for its simplicity, affordability, quick effects, and minimal side effects, making it widely accepted by patients. By integrating various TCM techniques, bladder rehabilitation outcomes and patient satisfaction can be enhanced.

Future research should expand the application of TCM in neurogenic bladder rehabilitation, further exploring its mechanisms and methods. This will not only advance TCM but also contribute to rehabilitation nursing and improve patient care^[15].

Disclosure statement

The authors declare no conflict of interest.

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