

Effect of Rehabilitation Nursing on Functional Recovery of Neurogenic Bladder Patients after Stroke

Lijuan Tang^{1, a}

¹The Affiliated Hospital of Guilin Medical University, Guilin 510000, China

^a11445998@qq.com

Abstract

Objective: To explore the effect of rehabilitation nursing on functional recovery of neurogenic bladder patients after stroke. **Methods:** 50 patients with neurogenic bladder after stroke admitted to our hospital were randomly divided into control group (25 cases) and observation group (25 cases). The control group was given traditional nursing intervention. The observation group was given rehabilitation nursing intervention on the basis of traditional nursing. The recovery of bladder function of the two groups was observed and compared. **Results:** After nursing, the total effective rate of bladder function recovery in observation group was better than that in control group, with statistical significance ($P < 0.05$). **Conclusion:** Rehabilitation nursing can effectively improve bladder function in patients with neurogenic bladder after stroke, which is worthy of further promotion and application.

Keywords

Rehabilitation nursing; Stroke; Neurogenic bladder; Functional recovery.

1. INTRODUCTION

Stroke is a disorder of cerebral blood circulation caused by rupture, stenosis or occlusion of cerebral artery. It can damage the function of cerebral hemisphere, cause muscle atrophy, joint spasm, varus foot, foot drop, and even cause hemiplegia [1]. After stroke, due to incomplete bilateral damage of the brain or brainstem urination center and its descending fibers, the inhibition of urination center on bladder is weakened. The main clinical manifestations are frequency of urine, urgency of urine and urgent urinary incontinence. The most common urinary incontinence occurs in 37% to 58% [2]. It seriously affects the functional recovery and quality of life of patients. In this paper, 50 patients with neurogenic bladder function recovery after stroke were divided into groups and given rehabilitation nursing intervention. The effect observation report is as follows.

2. MATERIALS AND METHODS

2.1. General Materials

Fifty patients with neurogenic bladder after stroke were selected from July 2016 to October 2018 in our hospital. According to the random number table, the control group consisted of 25 cases, 15 males and 10 females, aged 56-69 years, with an average age of 62.71 ± 5.82 years; the observation group consisted of 25 cases, 16 males and 9 females, aged 57-70 years, with an average age of 64.31 ± 5.67 years. There was no significant difference in age and sex between the two groups ($P > 0.05$), which was comparable.

2.2. Inclusion and Exclusion Criteria

①Inclusion criteria: All patients were diagnosed by CT or MRI, with clear consciousness, stable vital signs and no progress in neurological signs, which accorded with the diagnosis of neurogenic bladder. ②Exclusion criteria: Those with dysfunction of urination before stroke onset; those with urinary leakage and prostatic diseases; those with cardiovascular and hematopoietic diseases; those with urethral injury, urethral deformity, bladder neck obstruction; those with severe consciousness disorder or other reasons that make it difficult to complete this study.

2.3. Nursing Methods

The control group received traditional nursing intervention measures such as cleaning the urethra, perineum cleaning, bladder irrigation and prevention of infection. On this basis, the observation group was given the following rehabilitation nursing [3]:

2.3.1 Mental nursing

Because of the disease, most patients with neurogenic bladder after stroke usually show anxiety, irritability and depression. Therefore, it is helpful to improve patients' confidence in disease resistance to adopt targeted psychological intervention in different stages of patients and to run psychological intervention throughout the rehabilitation process. Explain the relevant health knowledge, let patients know their condition, make them treat the disease correctly, and give patients mental comfort and encouragement, so that they understand that active rehabilitation nursing intervention can help the recovery of the condition, and can improve their self-care ability and mental state.

2.3.2 Urinary consciousness training

When patients urinate, they are instructed to perform conscious and correct micturition and cooperate with synergistic muscles. If they are bedridden, they should turn over before opening the catheter. If patients can get out of bed, they are instructed to perform standing micturition training to promote the removal of sediments from the bladder.

2.3.3 Making Drinking Water Plan

According to the patient's diet, drinking habits and urine output, the patient was instructed to adjust drinking water plan appropriately. Help patients choose appropriate urination interval, starting from 30 to 60 minutes of training, and require patients to urinate according to the prescribed interval. Generally, the infusion patients urinate once / (1-2) h, and the Non-infusion patients urinate once / (3-4) H. Avoid overfilling of bladder and ensure smooth drainage of urine. If the patient's condition permits, the patient may be asked to drink more water. The amount of drinking water is generally not less than 2,000 mL/d to increase the urine volume. When it comes to the prescribed time, even if you don't want to urinate, you should try to urinate. If you want to urinate before the prescribed time, you should try to suppress the desire to urinate and defer it until the prescribed time. This interval was gradually prolonged in minutes, reaching (2.5-3) hours of urination once, and night arrangement (1-2) times of urination.

2.3.4 Pelvic floor muscle training

Pelvic floor muscle tension training, specific practices: patients lying on the bed, do anal contraction and relaxation movements. Each contraction lasts more than 3 seconds, then relax, 10 times in a row, every day (2-3 times); after lying position, raise the buttocks, double bridge movement: supine position, upper limbs on the side of the body, lower limbs bend the hips and knees, feet tread the bed, stretch the hips and raise the buttocks, maintain this position for a few seconds, then slowly down. Single bridge exercise: let patients stretch their legs or put them on the affected knees, so that the lower limbs support the affected side will raise the buttocks,

and keep doing this action repeatedly for a while, in order that patients do not feel tired, twice a day (2-3).

2.4. Observation Indicators

The recovery of bladder function was compared between the two groups. Evaluation criteria for bladder function recovery: before and after nursing, patients' clinical symptoms did not improve or aggravate, bladder filling was obvious, the residual urine of bladder detected by B-ultrasound was invalid, there was a sense of urine before urination after nursing, which could be occasionally controlled, and the residual urine of bladder was improved in the range of 80-150 ml. After nursing, the residual urine volume of the bladder was 50-80 ml. Before urination, urination was basically controllable. Occasionally, urinary incontinence was markedly improved. After nursing, the residual urine volume of the bladder was less than 50 ml. Before urination, there was a sense of urination, and the urination process was completely controllable for cure. Total effective rate = (improvement + significant improvement + cure) / total number of cases * 100%.

2.5. Statistical Methods

The data were analyzed by SPSS 19.0, and the measurement data were expressed by $\bar{x} \pm s$, and t-test was used. The counting data are represented by n (%). χ^2 was used for the distribution between groups. $P < 0.05$ indicated that there was significant difference.

3. RESULTS

Compared with the control group, the total effective rate of the observation group was higher. The difference was statistically significant ($P < 0.05$), as shown in Table 1.

Table 1. Bladder function recovery in two groups [n (%)]

| Group | Invalidity | Improvement | Marked improvement | Cure | Total effective rate |
|----------------------------|------------|-------------|--------------------|---------|----------------------|
| Observation group (n = 25) | 1(4%) | 3(12%) | 8(32%) | 13(52%) | 24(96%) |
| Control group (n = 25) | 7(28%) | 3(12%) | 7(28%) | 8(32%) | 18(72%) |
| χ^2 | / | / | / | / | 5.910 |
| P | / | / | / | / | <0.05 |

4. CONCLUSION

Neurogenic bladder is a series of dysfunction of urethra and bladder caused by neuropathy after stroke, which leads to urinary dysfunction. Neurogenic bladder after stroke is a risk factor for adverse prognosis of stroke. It not only has a great impact on the physical and mental health of patients, but also easily causes many complications, such as bladder stones, urinary system infection, renal insufficiency and so on[4]. It affects the prognosis, even leads to death and reduces the survival rate of patients. Conventional nursing methods are indwelling catheter, regular clipping and drainage of urine and prevention of urinary tract infection. Long-term indwelling catheter can easily lead to urinary tract inflammation and tissue damage, causing urinary tract infection, and it is difficult to establish reflex bladder. Systematic and effective rehabilitation nursing intervention aims to re-form urinary reflex, maintain the contraction and diastolic function of bladder, shorten the time of indwelling urinary catheter, and thus reduce the occurrence of complications. Through psychological nursing, patients can eliminate negative and pessimistic emotions in mind, correctly face the disease and actively participate in

rehabilitation nursing training. According to the bladder filling degree of patients to determine the time of urination, guide patients to timely adjust drinking water plan and urination awareness training, so that patients gradually form the normal rhythm of urination reflex and urination, to a certain extent, strengthen or improve the synergy between bladder detrusor and sphincter, and promote the recovery of bladder function. Pelvic floor muscle function rehabilitation training can restore certain urinary storage function in neurogenic bladder patients after stroke, establish regular Autonomous Urination as soon as possible, shorten the time of urinary catheter retention, reduce the incidence of urinary tract infection, reduce the psychological burden of patients, and thus improve the quality of life of patients.

ACKNOWLEDGEMENTS

This work is carried out with the support of Guangxi Medical and Health Self-funded Scientific Research in 2019. 《Effect of rehabilitation nursing combined with percutaneous nerve electrical stimulation on neurogenic bladder in stroke patients》 (NO.20190341)

REFERENCES

- [1] Pyo H, Kim B R, Park M, et al. Effects of Overactive Bladder Symptoms in Stroke Patients' Health Related Quality of Life and Their Performance Scale: [J]. *Annals of Rehabilitation Medicine*, 2017, 41(6):935-943.
- [2] Yang Y, Xiang R, Liu Y, et al. [Clinical study on post-stroke urinary retention treated with acupuncture at the twelve jing-well points and bladder function training] [J]. *Chinese Acupuncture & Moxibustion*, 2017, 37(10):1041.
- [3] Mo H P, Chen W L, Yang M F, et al. Influence of early nursing intervention on bladder function recovery in patients with stroke [J]. *China Modern Medicine*, 2015.
- [4] Akkoç N B T G Y, Bardak A N, Ersöz M, et al. Post-stroke lower urinary system dysfunction and its relation with functional and mental status: a multicenter cross-sectional study [J]. *Topics in Stroke Rehabilitation*, 2018(1):1-6.