Effect of Early Rehabilitation on Motor Function Recovery in Stroke Patients with Serious Hemiplegia

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Abstract: Objective: To analyze the effect of early rehabilitation on the rehabilitation of motor function in patients with serious hemiplegic stroke. Methods: 74 patients with serious hemiplegic stroke hospitalized from July 2019 to July 2021 were randomly divided into two groups. 37 patients in group A received early rehabilitation nursing and 37 patients in group B received routine nursing. Results: After one month of nursing, the motor function score and living ability score of group A were higher, and the neurological function score of group A was lower, which was different from that of group B (P < 0.05). Conclusion: Early rehabilitation nursing can promote the recovery of motor function and promote the living ability and neurological function of stroke patients with serious hemiplegia.

1. Introduction

Stroke is a multiple cerebrovascular disease with complex etiology and pathological manifestations of cerebral circulation disorder. After systematic treatment, it is easy to lead to sequelae such as serious hemiplegia [1-2]. serious hemiplegia will seriously influence the patient's life quality and reduce the patient's limb function. It is necessary to restore the patient's motor function as soon as possible through rehabilitation nursing [3]. Therefore, 74 patients with serious hemiplegia after stroke were selected to analyze the role of early rehabilitation nursing.

2. Data and Methods

2.1 General Data

74 stroke patients with serious hemiplegia hospitalized from July 2019 to July 2021 were randomly divided into two groups. There were 37 cases in group A, with 21 male and 16 female patients. The mean age was (57.24 ± 1.06) years from 41 to 75 years old. There were 18 cases of left hemiplegia and 19 cases of right hemiplegia. There were 37 cases in group B, 22 male and 15 female patients. The mean age was (57.18 ± 1.14) years from 40 to 72 years old. There were 17 cases of left hemiplegia and 20 cases of right hemiplegia. There was no difference in the data by hypothesis test (P > 0.05).

2.2 Method

Group B took routine nursing, that is, monitoring patients' vital signs, guiding hemiplegic limbs to carry out standardized exercise, and providing patients with dietary guidance. Group A took early rehabilitation nursing: the nursing was that the neurological symptoms of the patients were relieved for 2-3 days, and the vital signs were stable. Intervention should be carried out as soon as possible to obtain better rehabilitation effect. Patients with serious hemiplegia will show anxiety and inferiority complex due to symptoms such as slow response and limb paralysis, which needs nurses to develop psychological counseling, evaluate the psychological state of patients, use music therapy, emotion and interest cultivation to reduce the negative psychology of patients, make them actively cooperate with nursing services and restore their social function. Early rehabilitation

nursing measures are as follows: ① bed rest period: guide patients to take antispasmodic posture. Patients have serious symptoms in the acute stage of serious hemiplegia. During bed rest period, they need to place correct posture to avoid joint deformation, dislocation and joint contracture. In the supine position, nurses should lift the patient's shoulder upward, moderately straighten the shoulder forward, abduct the upper arm, extend the wrist and elbow, make the palm upward, and extend the fingers at the same time, so that the upper limbs are flat on the soft pillow, straighten the hip and pelvis forward, guide the patient to clamp the thigh inward and rotate inward, and place the soft pillow on the outer lower side of the affected thigh to avoid external rotation of the lower limbs. Slightly raise the knee joint to make it in the lower limb position of slight flexion and internal rotation, and make the ankle joint in the 94 ° position with the toe upward to prevent extensor spasm. When on the contralateral decubitus position, put the soft pillow in front of the patient's chest, extend the affected shoulder forward, straighten the elbow, finger joint and wrist, and do not hang the wrist. Use a cloth roll to separate the thumb from the other four fingers. Bend the affected leg, the ankle is in a 90 ° position, and place the healthy limb naturally. When the patient is in the lateral position, extend the patient's shoulder forward to prevent retraction or compression, straighten the elbow, turn the forearm back, open five fingers and keep the palm upward. Bend the healthy leg forward so that it is placed on the supporting pillow, and bend the knee joint after the affected leg, so that the ankle joint is 90 °, and the affected limb maintains the functional position. Turn over the patient once every 2h to prevent pressure ulcer, ask the patient to carry out joint passive activity training, start from the small joint and healthy side, and adhere to the principle of step-by-step activity. Patients can perform activities such as forearm supination, finger joint extension, shoulder external rotation and abduction. Exercise twice a day, 3-5 times for each joint until the active motion ability of the joint is restored. Instruct the patient to perform bridge movement and active roll over movement on the bed. Exercise twice a day for 30 minutes each time. ② Sitting position: put the patient's feet in a flat position, stretch his chest and waist, and keep his head and neck in an upright position. Inform the patient that the center of gravity of the upper body is on the hip, and the upper limbs are placed on the thigh and body side. The upper limb of the affected side should be protected to avoid shoulder subluxation during sitting training for 30 minutes each time. ③ Out of bed period: keep sitting training for at least 30min each time, make the patient practice standing, straighten the trunk, vestibular hips, slightly bend the knee joint, make the foot touch the ground, and carry out weight-bearing exercises of both lower limbs. Out of bed training needs to strengthen protection and prohibit patients from excessive fatigue. If orthopedic braces are used, the tightness shall be checked. ④ Walking period: If the patient stands independently for more than 30min, the walking period training can be carried out. Guide the patient to swing the affected leg back and forth, bend the knee and step, then take parallel bar turning and walking training, and then carry out independent walking training. ⑤ Recovery period: The patient can walk independently for 50m, then walk outdoors, carry out slope walking, up and down stairs training, and carry out living ability training such as dressing and eating.

2.3 Observation Indicators

① Motor function: Before nursing and 1 month after nursing, the motor function evaluation method Fugl-Meyer score was used to evaluate the motor function, including upper limb function (33 items, 66 points) and lower limb function (17 items, 34 points), a total of 100 points. Motor function was positively correlated with the score. ② Living ability: Before nursing and 1 month after nursing, use the activities of daily living (ADL) assessment to test the living ability, including eating, bathing and going up and down stairs, a total of 100 points, and the living ability was positively correlated with the score. ③ Neurological function: Before nursing and 1 month after nursing, the neurological disability score (NDS) was used to evaluate neurological function, including muscle strength, distal limb sensation, cranial nerve and tendon reflex. Each item was assigned 0-4 points. 0 indicates normal, 4 indicates serious damage or loss of function, a total of 16 points. Neurological function was negatively correlated with the score.

2.4 Statistical Analysis

Data processing via SPSS21. 0 software was completed, and the measurement data was compared and tested by t value. Assuming that the verification is meaningful, the p value is less than 0.05.

3. Results

3.1 Comparison of Motor Function Scores between the Two Groups

Before nursing, no difference existed in the motor function score between the two groups (P > 0.05). After one month of nursing, the motor function score of group A was greater than that of group B (P < 0.05).

Table 1 Comparison of Motor Function Scores between the Two Groups [$\bar{x} \pm s$ / Point]

Group	Cases	Upper limb		Lower limb	
		Before nursing	After nursing	Before nursing	After nursing
A group	37	40.21±1.26	57.15±2.65	20.14±1.28	28.59±2.10
B group	37	40.25±1.29	52.14±2.60	20.11±1.23	25.04±2.08
t	-	0.135	8.209	0.103	7.306
P	-	0.893	0.000	0.918	0.000

3.2 Comparison of Living Ability Scores between the Two Groups

Before nursing, there was no difference in the scores of living ability between the two groups (P > 0.05). After one month of nursing, the scores of living ability in group A were greater than those in group B (P < 0.05).

Table 2 Comparison of Living Ability Scores between the Two Groups [$\bar{x} \pm s$ / Point]

Group	Cases	Before nursing	After nursing
A group	37	70.26±3.85	84.26±4.86
B group	37	70.22±3.75	76.97±4.81
t	-	0.045	6.485
P	-	0.964	0.000

3.3 Comparison of Neurological Function Scores between the Two Groups

Before nursing, no difference existed in the neurological function scores between the two groups (P > 0.05). After one month of nursing, the neurological function scores of group A were lower than those of group B (P < 0.05).

Table 3 Comparison of Neurological Function Scores between the Two Groups [$\bar{x} \pm s$ / Point]

Group	Cases	Before nursing	After nursing
A group	37	10.24±1.09	5.26±0.75
B group	37	10.22±1.04	7.11±0.95
t	-	0.081	9.297
P	-	0.936	0.000

4. Conclusion

Serious hemiplegia is the main complication of stroke, which needs early rehabilitation training to restore limb function. Early rehabilitation nursing can reconstruct the function of central nervous system, repair damaged nerves and reorganize motor reflex arc [4]. The nursing measures include psychological counseling for patients and reducing their psychological burden, so as to improve the treatment confidence of patients. Bed rest nursing can improve the synaptic function of collateral circulation axons and restore the physiological function of the contralateral cerebral hemisphere. Sitting nursing can improve the patient's lumbar strength, enable him to be in sitting position and prevent shoulder dislocation [5]. The training content of out of bed nursing is standing exercise, so

that the patient can stand with weight on both lower limbs. Walking nursing can gradually restore the patient's walking function and restore the patient's independent walking ability. Convalescent nursing can strengthen patient's systemic motor function and basic living ability [6].

After one month of nursing, the motor function mark of group A was greater than that of group B ($P < 0.05$). The reason is that early rehabilitation nursing is purposeful and planned, and can gradually restore the limb function of patients. Early rehabilitation nursing starts training from the bed rest period, and targeted nursing measures are taken for different periods, which can effectively restore the motor function. The living ability score of patients in group A is greater than that in group B ($P < 0.05$). The reason is that early rehabilitation nursing can basically restore the independent living ability of patients by taking life ability training in the recovery period. The neurological function score of patients in group A is lower than that in group B ($P < 0.05$). The reason is that early rehabilitation nursing can reconstruct the function of central nervous system through exercise training, so the neurological function of patients can recover well.

In conclusion, early rehabilitation nursing can effectively restore the motor function and living ability of stroke patients with serious hemiplegia, and has high nursing value.

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