

The Effect of Early Rehabilitation Nursing Intervention on the Recent Clinical Of Patients with Cerebral Infarction

Wei Xu*

The Second Affiliated Hospital of Chongqing Medical University, Chongqing 400010, China

ABSTRACT Objective: Evaluated the effect of early rehabilitation nursing intervention on the recent clinical of patients with cerebral infarction and its meaning. **Methods:** 56 hospitalized patients diagnosed with cerebral infarction were selected. All the patients were divided into two groups at random: the conventional group and interventional group. The conventional groups were given various specific nursing; the interventional groups were given the early rehabilitation nursing intervention on the base of conventional nursing. Comparison between the Barthel index and the Fugl-Meyer score of patients in the two groups when they went to hospital, 15 d after treatment in hospital and 30 d after discharge. **Results:** when they went to hospital, the differences of the Barthel index and the Fugl-Meyer score between the two groups were not statistically significant ($p > 0.05$); but the differences of the Barthel index and the Fugl-Meyer score between the two groups 15d after treatment and 30d after discharge were(highly) statistically significant($p < 0.05$, $p < 0.01$). **Conclusion:** the patients with cerebral infarction should receive the early rehabilitation nursing intervention as early as possible after the illness state became stable, in order to promote the functional recovery and enhance the quality of life.

KEYWORDS

Cerebral infarction
Rehabilitation nursing
Functional recovery

1. Introduction

The incidence, mortality and morbidity of cerebrovascular disease are very high, it is juxtaposed with heart disease and cancer, becomes one of the three fatal diseases. The blood-supply disorder in brain causes ischemia and anoxemia of brain tissues, which, in turn, leads to cerebromalacia, finally results in cerebral infarction. The incidence, mortality and morbidity of stroke are very high [1]. Recently, along with the improvement of clinical diagnosis of cerebrovascular disease, emergency treatment and treatment technology, the acute mortality declines dramatically,

but the morbidity increases markedly (about 86.5%) [2]. The related clinical study of domestic suggests [3]; the rehabilitation nursing of patients with stroke plays an important role in promoting the functional recovery of patients with cerebral infarction, decreasing the morbidity and enhancing the quality of life of the patients. Especially the early rehabilitation nursing intervention can more significantly promote the functional recovery, reduce the disability. The author provided the patients with stroke with early rehabilitation nursing intervention during the course of clinical nursing, the clinical effects after intervention were good, now report it as follow.

2. Materials and methods

2.1. General materials

56 patients with cerebral infarction hospitalized in our hospital between January 2014 and January 2015 were selected. The clinical diagnosis of these patients conformed to the related standard of diagnosis of ischemic cerebrovascular disease [4]. They admitted for the first time within 48 h after onset. The illness was confirmed by CT and MRI test. There was no progression of the illness after

Copyright © 2015 Wei Xu

doi: 10.18686/jn.v4i2.6

Received: March 17, 2015; Accepted: May 16, 2015; Published online: June 28, 2015

This is an open-access article distributed under the terms of the Creative Commons Attribution Unported License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Corresponding author: The Second Affiliated Hospital of Chongqing Medical University, Chongqing 400010, China. E-mail: xuwei_cq8@163.com

admission. Therefore, the transient ischemic attack (TIA) was excluded, and the patients had no organic disease and severe basic diseases. All the patients were divided into the conventional group and the interventional group at random. In the conventional group, 28 patients received various specific nursing, among them, there were 16 males and 12 females, aged 46-75, with an average of 63.6 ± 8.2 years old, the mean disease time was 21.5 ± 8.6 h; in the interventional group, 28 patients were given the early rehabilitation nursing intervention on the base of conventional nursing. among them, there were 18 males and 10 females, aged 44-76, with an average of 61.7 ± 7.9 years old, the mean disease time was 23.7 ± 9.0 h. Compared the age distribution, gender composition, the mean disease time, the position of infarcts, infarct area, the severity of the disease, clinical project of treatment etc. of the two groups, the differences were not statistically significant ($p > 0.05$), the data were comparable.

2.2. Clinical treatment and nursing method

The patients were given a thrombolytic drugs treatment after admission, at the same time, the dehydrating agents were given according to the state of patients; if the clinical symptom such as infection appeared, the patients could be given the anti-inflammatory treatment. We should control the blood glucose and the blood pressure of patients during their hospitalization and keep electrolyte and acid base balance. The conventional patients received various specific nursing during hospitalization; in the interventional group, the patients were given the following early rehabilitation nursing intervention on the base of conventional nursing after their illness became stable: (1) Posture nursing: the patients and their families were guided to take lateral position or horizontal position after admission, exchanged every 2 h, at the same time, strengthened the massage and stimulus of the affected side. (2) The training of joint motion: guided the patients how to perform the training of joint motion such as crunches, adduction, abduction, intorsion, outward rotation etc.; the training were performed in the sequence of from easy to difficult, from large joints to small joints, from passive to active motion; (3) The sitting position training: along with the gradually recovers, guided the patients to sit on the bed, straighten and bending knee joint slowly, gradually trained the front, back, left, right rotational movement and the balance of the trunk; (4) Stance training: after the illness had a certain

recovery, guided the patients to perform the Stance training and muscle strength training, promoted the recovery of motor function of limbs on the affected side. Followed a step-by-step approach, the patients were trained to stand by wall under the help of their families firstly, then without wall step by step; after that, guided the patients to train the stance balance, the patients were required to hold the end of the bed, then swing forward, backward, toward left and right, raise the lower limbs alternately; after the patients could keep a good balance, trained them to do the horizontal movement; (5) Walk training: after the illness had a certain recovery, the patients could perform the walk training. First, the families held the waist of patients, the patients held the shoulders of their families by upper limbs, began with the slow mark time, then gradually become slow walk held by their families, finally become slow walk by themselves if the condition permitted.

2.3. The content and the standard of clinical evaluation

The activities of daily living(ADL) [5] and the motor function [6] of the patients were evaluated by the Barthel index and the Fugl-Meyer method respectively when they went to hospital, 15 days after treatment in hospital and 30 days after discharge. Summarized the scores and performed the statistical analysis.

2.4. Statistical analysis

The measurement data of the two groups according to the above standard were expressed as $(\bar{x} \pm s)$; the t test was performed by the SPSS 16.0 software, when $p < 0.05$, the difference was statistically significant.

3. Result and analysis

3.1. Comparison of the Barthel index between the two groups

Compared the Barthel index of the two groups when the patients went to hospital, $p > 0.05$, the difference was not statistically significant. Compared the Barthel index of the two groups 15 days after admission, $p < 0.05$, the difference was statistically significant. Compared the Barthel index of the two groups 30 days after discharge, $p < 0.01$, the difference was (highly) statistically significant. See Table 1.

3.2. The comparison of the Fugl-Meyer scores between the two groups

Compared the Fugl-Meyer scores of the two groups when

Table 1. The comparison of the Barthel index between the two groups ($\bar{x} \pm s$).

Group	Number of cases	When go to Hospital (Score)	15 d after treatment in hospital (score)	30 d after discharge (score)
Conventional group	28	37.56 ± 8.28	45.23 ± 9.45	62.18 ± 10.52
Interventional group	28	38.49 ± 8.36	58.11 ± 9.72	76.47 ± 11.66
t value	-	0.307	1.762	3.869
p	-	> 0.05	< 0.05	< 0.01

Table 2. The comparison of the Fugl-Meyer scores between the two groups ($\bar{x} \pm s$).

Group	Number of cases	When go to Hospital (score)	15 d after treatment in hospital (score)	30 d after discharge (score)
Conventional group	28	31.53 ± 6.62	39.62 ± 7.94	47.61 ± 9.84
Interventional group	28	32.38 ± 6.83	48.77 ± 8.46	60.27 ± 10.32
t value	-	0.286	1.798	4.105
p	-	> 0.05	< 0.05	< 0.01

the patients went to hospital, $p > 0.05$, the difference was not statistically significant. Compared the Fugl-Meyer scores of the two groups 15 days after admission, $p < 0.05$, the difference was statistically significant. Compared the Fugl-Meyer scores of the two groups 30 days after discharge, $p < 0.01$, the difference was (highly) statistically significant. See Table 2.

4. Discussion

The motor function disorder after stroke decreases the quality of life of the patients; it is also an important factor of the quality of family life and social life. What the rehabilitation workers should focus on in the early stages of disease is that reducing the motor function disorder, improving the quality of life, making the patients return home or return to society [7]. The neural functional injury after stroke can be compensated by the following two ways: (1) The intact system could replace the damaged system by learn; (2) The whole brain shared the function of the damaged system. This compensation could be established by training, rehabilitation training made the receptor accept the afferent impulse, promoted the plasticity development of the brain function, restored the lost function [8]. In the past, we thought that the patients with stroke should stay in bed in the early stage. But recently, most considered that the patients with stroke should receive rehabilitation therapy as early as possible, even there is a statement of super early treatment. The early rehabilitation therapy could help to promote the recovery of the limb movement function, effectively redeploy the function of the residual brain cells, make the neurofilament subunits which play no role under normal condition play a compensation function, then reorganize and reconstruct the brain function, decrease the degree of disability, improve the quality of life [9]. Zhu Yong [10] suggested, as long as the patients with cerebral infarction have stable vital signs and the clear sense as well as the neurological symptoms would not develop, they can receive the rehabilitation training after 48 hours. Zhao Lifan [11] considered by clinical observation that the early introduction of rehabilitation treatment for the patients with stroke could help to prevent complication and secondary lesion, reduce the neurological deficits such as contracture of joint, muscle atrophy due to long term bed. Martineau et al [12] considered that after the early rehabilitation nursing intervention, the functional reorganization and compensation occurred in the main sensorimotor

area of cortex, maximized the brain plasticity, and restored the lost function. Therefore, the early rehabilitation can effectively improve the motor function of the patients; it cannot be replaced by any other drugs. At the same time, it can provide the patients with the correct training method timely, prevent the occurrence of disuse syndrome and misapply syndrome, decrease the disability rate.

After performing the early rehabilitation nursing intervention to the patients with cerebral infarction, the author found that the Barthel index and the Fugl-Meyer score of the patients with the early rehabilitation nursing intervention increased significantly 15 d after admission and 30 days after discharge. Compared with the patients with conventional nursing, the difference between the two groups was (highly) statistically significant ($p < 0.05$, $p < 0.01$). The result shows that it could statistically improve the functional recovery of the affected limb by the early rehabilitation nursing intervention, improve the quality of life of the patients. Therefore, after the illness becomes stable, the patients with cerebral infarction should receive the early rehabilitation nursing intervention as early as possible, in order to promote the functional recovery of the patients and improved their quality of life.

References

1. Wang Q, Li T. Rehabilitation of stroke. *Beijing: People's Medical Publishing House*. 2003;5.
2. Zhou S. Practical rehabilitation medicine. *Nanjing Southeast University Press*. 1998;9–13.
3. Xiao Y. The effect of early rehabilitation nursing on the activity of daily living. *Shanxi Nursing Journal*. 2000;14(3):122–123.
4. Chinese Medical Association for Neuroscience. Diagnostic points of various types of cerebrovascular disease. *Chinese Journal of Neurology*. 1996;29(6):379–380.
5. Yu D, Yun X. Movement therapy and occupational therapy. *Beijing: Huaxia Publishing House*. 2002;480–481.
6. Liu G. The effect of family rehabilitation nursing intervention on the functional recovery of the patients with cerebral infarction. *Today Nurse*. 2006;3:94–95.
7. Hu Y, Zhu Y, Yang P, et al. The effect off early rehabilitation treatment on the motor function of patients with aute stroke. *Chinese Journal of Rehabilitation Medicine*. 2002;17(3):145–147.
8. Qiu Y, Gao L. The early rehabilitation nursing intervention of cerebral apoplexy patients with hemiparalysis. *Journal of Regional Anatomy and Operative Surgery*.

2008;7(3):184–187.

9. Nie C, Gao L. The early rehabilitation nursing experience of patients with stroke. *Journal of Practical Nervous Diseases*. 2005;8(2):108–109.
10. Zhu Y . The enhancement of neurorehabilitation research. *Chinese Journal of Neurology*. 1998;31(4):195.
11. Zhao L. The rehabilitation nursing of the acute stage of the patients with stroke. *Henan Journal of Practical Nervous Diseases*. 2003;6(6):98.
12. Martineau J, Bauer JD, Isenring E, et al. Malnutrition determined by the patient-generated subjective global assessment is associated with poor outcomes in acute stroke patients. *Clinical Nutrition*. 2005;24(6):1073–1077.