

# Short-term Prognostic Effects of Ultra-early Rehabilitation Nursing on the Patients with Acute Pontine Infarction

## Short-term Prognosis

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**Abstract:** To investigate the effect of ultra-early rehabilitation nursing on the short-term prognosis of patients with acute pontine infarction. Retrospective analysis was carried out on the patients with acute pontine infarction admitted to our department from June 2017 to December 2018. All patients were divided into early rehabilitation nursing group and super early rehabilitation nursing group according to the different time of rehabilitation intervention. It was recorded that FMA score, modified BI score, HAMA anxiety score and HDMA depression score at admission. All patients were followed up and scored at 30 days after treatment, and the results were statistically analyzed. Result There was no significant difference in FMA score, modified BI score, HAMA anxiety score and HDMA depression score at admission between two groups ( $p>0.05$ ). After 30 days of treatment, it was statistically significant ( $p<0.01$ ) that scores of the two groups were higher than those at admission. It were higher that four scores in the observation group than those in the control group and difference was statistically significant of two groups ( $p<0.01$ ). This electronic document is a "live" template. The various components of your paper [title, text, heads, etc.] are already defined on the style sheet, as illustrated by the portions given in this document.

**Keywords:** Ultra-early rehabilitation nursing; Acute pontine infarction; Prognosis

## 1. Introduction

Acute pontine infarction accounts for about 7% of ischemic stroke [1], and its early manifestations are usually lacunar syndrome, including pure sports stroke, ataxia hemiplegia or sodium one-handedness syndrome [2]. Acute pontine infarction is worthy of clinical attention because the early stage of the disease will progress, eventually leading to disability of patients. It affects treatment compliance and prognosis that patients are prone to produce different degrees of psychological problems, such as anxiety, depression. effect of rehabilitation nursing in different time on prognosis of pontine infarction. Effect of rehabilitation nursing in different time on prognosis of pontine infarction via retrospective analysis of different rehabilitation nursing opportunities of patients with acute pontine infarction admitted to our department.

## 2. Data and Methods

### 2.1. The general information

There were hospitalized in our department that 120 patients with acute pontine infarction from June 2017 to December 2018. all patients meet the diagnostic criteria

revised by the fourth national conference on cerebrovascular diseases, It was clinically diagnosed as posterior circulation ischemic stroke with imaging (head CT, MRI) reliable diagnostic basis and there was no neurological impairment before onset (MRS score was 0), it were excluded that other acute cerebrovascular diseases such as cerebral hemorrhage. The selected cases were randomly divided into observation group and control group and each group have 60 cases. It have male 33 cases and female 27 cases in observation group (super early nursing intervention). Age 47 -76 ( $64\pm 6.1$ ), HAMA anxiety score ( $26.9\pm 2.2$ ), and HDRS depression score ( $26.1\pm 3.4$ ). Control group (early nursing intervention) have male 34 cases, female 26 cases; Age 46-75 ( $63.7\pm 5.8$ ); HAMA anxiety score ( $26.5\pm 2.5$ ), HDRS depression score ( $25.7\pm 3.8$ ), FMA score ( $38.5\pm 10.5$ ), modified BI ( $33.2\pm 4.8$ ), HAMA anxiety score ( $26.5\pm 2.5$ ), and HDRS depression score ( $25.7\pm 3.8$ ). There was no statistically significant difference in general data between the two groups ( $p>0.05$ ).

### 2.2. Methods

The control group were given early rehabilitation nursing intervention, which was given after 72h of stable condi-

tion. Super-early rehabilitation nursing was implemented after 24 hours of stable condition in the observation group. Rehabilitation nursing intervention: routine nursing; they were implemented routine nursing intervention and dietary intervention such as reducing blood and adjusting blood lipids according to the examination results of patients' blood pressure, blood lipids, blood coagulation and other conditions. Rehabilitation training: it was carried out body posture, bed roll training, Sitting training, Standing training, walking training, rehabilitation training and language and swallowing function training after the stable condition. At the same time, they were also trained daily activities (washing face, brushing teeth, urinating and defecating, undressing, eating, learning AIDS, etc.). Others: in the implementation of rehabilitation training process to do other nursing, such as the prevention of pressure ulcers, pulmonary infection and other complications. Patients and their families were given psychological nursing and health education.

**2.3. Observation content and clinical evaluation criteria**

Fugl-Meyer scoring method was adopted in both groups after hospitalization and 30 days of treatment. To evaluate the patients' motor function, FMA score <50 was classified as severe motor impairment, 50-85 as obvious motor impairment, >85-95 as moderate motor impairment, and >95-99 as mild motor impairment. Meanwhile, modified barthel index (MBI) was used to evaluate the daily living ability of patients with cerebral infarction, including eating, bathing, grooming, dressing, defecation, bed and chair transfer, flat walking and stair climbing ability, etc. The total score was 100, the higher the score, the better the self-care ability of patients. It is good that MBI total score of >60, indicating the ability to live independently; Between 40 and 60, people are disabled and

need some help from others. It is poor ≤40 that indicating obvious dependence or complete dependence on others to live [3]. It were used that HAMA (Hamilton anxiety scale) and HDRS (Hamilton depression scale) to evaluate the motor function recovery, anxiety and depression mood changes of the patients.

**2.4. Data collection**

A uniform questionnaire was used for patients meeting the inclusion criteria. It were recorded in detail that patient's name, gender, age, height, weight, previous history, onset time, time of medical treatment, time of hospitalization, treatment plan and imaging results. It were that neurological examination, FMA score, modified BI score, HAMA anxiety score and HDMA depression score performed on the patients by more than 2 senior neurorehabilitation physicians. The head images of patients were read and recorded by radiologists.

**2.5. Statistical analysis**

All data were statistically analyzed by SPSS13.0 software package. Two independent sample T tests were used to compare the counting data between the two groups. Chi-square test was used to compare the rates, and it was that p<0.05 considered statistically significant.

**3. Results**

There was no significant difference in FMA score and improved BI score between the two groups at admission (p>0.05). It were higher that scores of the two groups than those at admission, and the difference was statistically significant after 30 days of treatment (p<0.01). After 30 days of treatment, It were higher that two scores in the observation group than those in the control group, and the difference was statistically significant (p<0.01).

**Table 1. Comparison of FMA scores and improved BI scores in the two groups**

Groups	Cases	FMA		Improved BI	
		Admitted to hospital	Thirty days	Admitted to hospital	Thirty days
Control guoups	60	38.5±10.5	53.2±12.7	33.2±4.8	66.2±5.8
Observation group	60	39.2±11.2	59.3±13.2	34.1±3.9	71.2±6.1
T		1.115	10.511	0.203	27.53
p		0.227	0.0001	0.812	0.0001

HAMA scores and HDRS scores at admission showed no significant difference between the two groups (p>0.05).The scores of the two groups were higher than those at admission, and the difference was statistically

after 30 days of treatment. significant (P<0.01). After 30 days of treatment, the two scores in the observation group were higher than those in the control group, and the difference was statistically significant (P<0.01)

**Table 2. Comparison of HAMA scores and HDRS scores in group 2**

Groups	Cases	HAMA		HDRS	
		Admitted to hospital	Discharge from hospital	Admitted to hospital	Discharge from hospital
Control guoups	60	26.5±2.5	14.2±3.7	25.7±3.8	15.2±3.8
Observation group	60	26.9±2.2	11.3±2.5	26.1±3.4	12.8±3.4

T		1.135	10.521	0.215	28.53
P		0.247	0.0001	0.832	0.0001

#### 4. Discussion

Traditionally, It focus on saving patients' lives and resulting in relatively poor recovery of patients' body functions and relatively high disability rate that the clinical treatment and nursing of acute cerebral infarction, It often neglects the improvement and promotion of patients' quality of life and mood, and seriously lacks the understanding of the important role of early rehabilitation nursing in the whole treatment process. Schaller et al. [4] argued that there is still a further decline in residual function after natural recovery of cerebral infarction, which may be caused by the misuse or disuse of the affected limb after stroke. so the earlier the rehabilitation intervention, the better the neurological recovery. Therefore, effective rehabilitation treatment after central nervous injury can promote the reconstruction of normal movement patterns, inhibit the occurrence of abnormal patterns and avoid the misuse and disuse of the affected limb. At the early stage of acute pontine infarction, the symptoms are usually atypical or transient ischemic attack, and then the symptoms are further aggravated, leading to partial or severe disability of the patients, which is also one of the aggravating factors of the early symptoms of acute cerebral infarction [5]. Therefore, patients with acute pontine infarction should be actively carried out ultra-early rehabilitation treatment to reduce their disability and improve their living ability.

The data of this group showed that the FMA score ( $39.2 \pm 1.2$ ) and modified BI ( $34.1 \pm 3.9$ ) of the patients in the two groups at the time of admission .all were lower in both groups and more severely impaired in motor function, which was consistent with the characteristics of pontine infarction. After 30 days of treatment, it were higher that FMA and modified BI scores of the two groups than those at admission, and the differences were statistically significant. The two scores in the observation group were higher than those in the control group, and the difference was statistically significant. It indicates that the super early rehabilitation treatment can promote the reorganization or compensation of the surrounding tissues or the healthy side brain cells, and exert the plas-

ticity of the brain greatly by reducing the degree of edema in the penumbra around the hemorrhage and accelerating the establishment of the collateral circulation of the brain, it can actively induce the incoming activity of the motor receptors and the outgoing activity of the cerebral cortex. It were increased compared with those at admission that HAMA scores and HDRS scores of the two groups, and the differences were statistically significant after 30 days. HAMA scores and HDRS scores in the observation group were higher than those in the control group, and the differences were statistically significant. Super early rehabilitation nursing intervention can speed up the patients' physical and mental rehabilitation process, improve the quality of life, by reduce the pessimistic, fear, anxiety, depression, to eliminate the worries of the patients and their families to the greatest extent, to restore the confidence of the treatment and rehabilitation, actively cooperate with rehabilitation.

Therefore, ultra-early systematic rehabilitation nursing can actively promote the improvement and promotion of the degree of neurological impairment, daily living ability and mood in patients with acute pontine infarction, and can be applied and promoted clinically as an auxiliary treatment for patients with acute cerebral infarction.

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