

Study on the Nursing Efficacy of Clopidogrel Combined With Oxiracetam in the Treatment of Patients with Cerebral Infarction

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Gao *et al.*: Combined Efficacy of Clopidogrel and Oxiracetam in Cerebral Infarction Patients

To explore clinical and nursing efficacy of clopidogrel combined with oxiracetam in the treatment of patients with cerebral infarction. Selected 162 patients with cerebral infarction in our hospital from March 2018 to December 2020. Divided those who were treated with routine nursing as Group A (n=70) and the other was treated with individualized symptomatic nursing as Group B (n=92). Compared with both groups after treatment with different nursing methods on activities of daily living scores, National Institute of Health Stroke Scale scores, hospital stay, clinical efficacy, nursing satisfaction, nursing quality compliance rate and nursing adverse events. The general clinical baseline data of both groups had no difference ($p>0.05$). Activities of daily living scores and National Institute of Health Stroke Scale scores of both groups after different nursing methods were remarkably different ($p<0.05$). The length of hospital stay of Group B had a remarkably shorter time compared with Group A. The clinical efficacy, nursing satisfaction and nursing quality compliance rate of Group B were better than Group A. Nursing adverse event rate of Group B was lower than Group A. Comparison of both groups had significant difference, which possessed statistical significance ($p<0.05$). Treated patients with cerebral infarction by clopidogrel combined with oxiracetam, after individualized symptomatic nursing intervention, the clinical efficacy, patient satisfaction and nursing compliance rate have been improved to a certain extent. At the same time, it can reduce length of stay and improve the post-treatment ability of daily living and neurological deficit function. Individualized symptomatic care for clinical management of patients with cerebral infarction has important clinical significance and is worthy wide spreading.

Key words: Clopidogrel, oxiracetam, cerebral infarction, dementia

Cerebral infarction is a type of common brain disease. Because patients with cerebral infarction have serious risk and the number is increasing year by year, it has become one of high mortality benign diseases worldwide^[1]. In clinic, patients with cerebral infarction are due to cerebral vascular stenosis and thrombosis, resulting in insufficient blood supply, brain tissue necrosis and cerebral hypoxia^[2]. As the patient's condition worsens, gradually increasing the cognitive impairment caused by cerebral infarction, eventually causing dementia and affecting the quality of daily life^[3]. Therefore, how to select clinical and nursing treatment schedule for cerebral infarction is very important for us to study.

Long term clinical trials proved that clopidogrel and

oxiracetam are drugs that are often used clinically to treat cerebral infarction^[4]. Clopidogrel is a type of antiplatelet drug which can reduce inflammatory mediator CD40 ligand (CD40L) expression in activated platelets induced by Adenosine Diphosphate (ADP) and possibly have anti-inflammatory function^[5,6]. However, oxiracetam is derivative of Gamma-Aminobutyric Acid (GABA) and it is a new type of neurotrophic drug. Its small molecular weight and it can promote the combination of nucleic acid and protein and also the combination of phosphatidylethanolamine and phosphatidylcholine in brain tissue. It accelerates the energy metabolism of brain tissue and enhances glucose availability by activating glycolytic. In addition, it improves cognitive function and daily activities by accelerating the metabolism of glutamate receptors,

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leading to an increase in the amplitude of postsynaptic potentials and an improvement in brain tissue function reconstruction^[7,8]. Because of their role in preventing thrombosis and rebuilding brain tissue function, they are often used to treat cerebral infarction.

In recent years, with medical science make great progress and develop highly in our country, in-depth research has been conducted on cerebral infarction etiology and pathology^[9,10]. With the development of treatment technologies such as drugs and nursing intervention, the mortality has been remarkably decreased. Nevertheless, most of the survivors with cerebral infarction have varying degrees of motor, sensory, language and cognitive dysfunction, these badly affect the quality of life of patients^[11-13]. We arrange primary nurses and rehabilitation trainers from our hospital to formulate individualized and symptomatic nursing plans for patients based on the specific conditions of the patients, in case avoid blind nursing in the nursing process. This article studies the effect of individualized symptomatic care on patients with cerebral infarction. Through the analysis of 162 patients with cerebral infarction in neurology department of our hospital, we discussed the nursing effect of individualized symptomatic care on patients with cerebral infarction intervention.

MATERIALS AND METHODS

General data:

We selected 162 patients with cerebral infarction hospitalized in Neurology Department in our hospital from March 2018 to December 2020. Divided those who were treated with routine nursing as Group A (n=70) and the other was treated with individualized symptomatic nursing as Group B (n=92). 37 males and 33 females included in Group A, the average age is about (62.56±8.45) y old. 50 males and 42 females included in Group B, the average age is about (61.86±8.77) y old. There was comparability in both groups' general clinical data (p>0.05) as shown in Table 1.

The criteria for enrollment of patients were as follows: The patients were diagnosed with cerebral infarction by Computed Tomography (CT) or Magnetic Resonance Imaging (MRI) of the head; they were older than 18 y old; the patients and their families agreed and signed the informed consent form.

Exclusion criteria: Patients suffer from severe endocrine diseases; patients suffer from brainstem infarction and severe cognitive dysfunction; patients suffer from cognitive impairment, mental disorders and inability to cooperate caused by neurological diseases; patients adopted within 6 h from onset to admission; patients suffer from abnormal blood coagulation mechanism or blood system diseases with bleeding tendency, gastrointestinal bleeding and gastrointestinal inflammation; patients suffer from long term chronic liver disease, adrenal gland disease and severe heart disease and patients have long term contraindications which is related to surgical treatment of cerebral infarction.

Methods:

Treated all patients with clopidogrel combined with oxiracetam. Clopidogrel sulfate tablets [Shenzhen Salubris Pharmaceuticals Co., Ltd.] 75 mg/time, once daily; oxiracetam [Dongying Huakang Chemical Co., Ltd.] 800 mg orally every time, 2 times a day. Both groups received routine nursing, mainly basic nursing (medicine nursing and condition observation nursing). The experimental group carried out individualized symptomatic nursing intervention. The specific individualized symptomatic care was as follows:

Intervention time and intervention nursing measures: After admission the patients would be cared for by ward nurses and evaluated by medical staff within 24 h, mainly including the ability of physical and nervous system activity. Then medical staff, patients and their families together set treatment and rehabilitation goals and conducted specific rehabilitation treatment,

TABLE 1: COMPARISON OF BOTH GROUPS GENERAL DATA ($\bar{x}\pm s$)

General Condition	Group A	Group B	χ^2/t	p
Gender			2.63	0.841
Male	37	50		
Female	33	42		
Weight	66.34±13.84	65.13±13.31	3.42	0.943
Age	62.56±8.45	61.86±8.77	1.27	0.774
Hypertension	22	31	3.84	0.953
Diabetes	15	21	2.96	0.856
Arrhythmia	11	18	1.05	0.642

then started nursing intervention. Complications needed to be prevented during hospitalization.

Therapeutic exercises: Conducted in accordance with the nursing path list. On the 1st d, evaluated the body function and assisted the patients to perform body exercise and joint motion on the bed. Meanwhile, taught these actions to the patient. Each action was performed 5 times and repeated two cycles a day. The amplitude of the action must be less than 90°. Under some specific activity condition, the patient's head needed to be tilted to the affected side to sense the affected limb. On the 2nd d, mainly taught the patient to turn over and then Bobath training and bridge exercises. During the training, told the patients to care physical experience and learning, 10 to 20 min per time. The bed also needed to be raised gradually, initially by 30° and then adjusted every 20 to 30 min, with an amplitude of 20°, but not more than 90°, training twice daily. On the 3rd d, conducted sit balance exercises and emphasizing the training of patients' self-care ability. Encouraged the patients to carry out autonomous activities according to their own situation, twice a day and repeated each action 5 times. On the 4th d, evaluated the patient's condition which mainly included muscle strength, muscle tension and limb flexibility. Then after the corresponding nursing intervention treatment was carried out, the sitting and standing training was carried out. In this training, when the patients were sitting, they needed to tilt their torso forward, moved their weight to the front soles of their feet and the weight should stay on the patient's legs. Each action five times, twice a day. From d 5 to d 7, conducted mainly standing posture training. Separated the patient's feet with the same width as the shoulder, swung the body from side to side, moved the weight to the affected side. While standing, the patient could conduct knee flexion with his hand on the bed, twice a day, 10 to 20 min per time and under the condition, took care of knee joint protecting. If the patients could stand for 5 min and stayed stable, we could encourage them to walk slowly. Stop if they felt flustered or anxious. On d 8, check their physical activity, muscle strength and muscle tension. Adjusted the treatment method appropriately and then adopted the lower limb resistance training. From d 9 to discharge, evaluated the patient's motor function and provided necessary guidance. Primary nurses needed to evaluate patients every day and used personalized rehabilitation measures. Rehabilitation trainers should consult their conditions and provided guidance every week.

Observation indicators and evaluation criteria:

Make a comparison of both Group A and Group B on Activities of Daily Living (ADL) and National Institutes of Health Stroke Scale (NIHSS) scores. Adopted ADL to evaluate the patients' daily living ability. A higher score means a better ability. Adopted NIHSS to evaluate the severity of neurological deficit. The lower the score, the better the neurological function. Contrast length of hospital stay of both groups and counted the satisfaction of both groups by questionnaire, which can be divided into very satisfied, relatively satisfied and dissatisfied. Make a comparison of Group A and Group B on clinical effective rates, evaluation criteria was as follows:

Basic rehabilitation: The dysfunction score decreased 91 % to 100 % and the degree of disability was 0.

Significantly effective: The dysfunction score decreased 46 % to 90 % and the degree of disability was 1 to 3.

Effective: The dysfunction score decreased 18 % to 45 %.

No change: The dysfunction score decreased or increased <18 %.

Worsening: Dysfunction score increased >18 %.

Death: Total effective rate = Basic rehabilitation + markedly effective + effective. At the same time, recorded the care quality compliance rate and nursing adverse events of both groups.

Statistical processing:

We adopt Statistical Package for the Social Sciences (SPSS) 20.0 to analyze the data. Use mean ± standard deviation ($\bar{x} \pm s$) to indicate quantitative data. Compare both groups by independent sample t test; analyze the enumeration data by χ^2 test. $p < 0.05$ proves that the divergence possesses statistical significance.

RESULTS AND DISCUSSION

TADL scores of Group A and Group B were (68.67 ± 11.13) and (84.24 ± 11.95) respectively and NIHSS scores of Group A and Group B were (9.6 ± 3.5) and (6.7 ± 2.2) respectively, both of which had significant difference with statistically significance ($p < 0.05$) as shown in Table 2.

After individualized symptomatic nursing intervention, the satisfaction of patients reached 97.5 % and the satisfaction of patients who did not undergo individualized symptomatic nursing intervention only reached 77.1 %. There is a significant difference, so it had statistical significance ($p < 0.05$) as shown in Table 3.

TABLE 2: COMPARISON OF ADL, NIHSS AND LENGTH OF HOSPITAL STAY IN BOTH GROUPS ($\bar{x}\pm s$)

Group	n	ADL scores	NIHSS scores	Length of hospital stay
Control group (Group A)	70	68.67 \pm 11.13	9.6 \pm 3.5	13.4 \pm 2.8
Experimental group (Group B)	92	84.24 \pm 11.95	6.7 \pm 2.2	7.7 \pm 2.3
t		7.446	6.457	12.463
p		0.004	0.009	<0.001

Note: ADL: Activities of Daily Living and NIHSS: National Institute of Health Stroke Scale

TABLE 3: COMPARISON OF BOTH GROUPS NURSING SATISFACTION

	n	Very satisfied	Relatively satisfied	Dissatisfied	Total satisfaction rate
Group A	70	42 (60 %)	12 (17.1 %)	16 (22.9 %)	54 (77.1 %)
Group B	92	58 (63 %)	32 (34.5 %)	2 (2.5 %)	90 (97.5 %)
χ^2				10.351	
p				0.001	

After personalized symptomatic nursing intervention, the total clinical effective rate of patients reached 94.57 % and the clinical effective rate of patients who did not undergo personalized symptomatic nursing intervention only reached 78.57 %. They were obviously different and this had statistical significance ($p<0.05$) as shown in Table 4.

The patients care compliance rate in Group B was 97.83 % while in Group A was 77.14 %. Both groups had remarkable difference; it had statistical significance ($p<0.05$). The adverse event rate in Group B was 2.17 % while in Group A was 22.86 %, the divergence possessed statistical significance ($p<0.05$) as shown in Table 5.

TABLE 4: COMPARISON OF BOTH GROUPS CLINICAL EFFICACY [n (%)]

	Cure	Markedly effective	Effective	Ineffective	Total effective rate
Group A	13 (18.57)	22 (31.43)	20 (28.57)	15 (21.43)	55 (78.57)
Group B	17 (18.48)	45 (48.91)	25 (27.17)	5 (4.43)	87 (94.57)
χ^2			9.964		
p			0.001		

TABLE 5: COMPARISON OF NURSING QUALITY COMPLIANCE RATES AND NURSING ADVERSE EVENTS OF BOTH GROUPS

Group	Cases	Excellent		Good		Adverse events		Care quality compliance rates	
		Cases	%	Cases	%	Cases	%	Cases	%
Group A	70	31	44.29	23	32.86	16	22.86	54	77.14
Group B	92	52	56.52	38	41.3	2	2.17	90	97.83
χ^2			3.344		2.141		8.853		10.532
p			0.031		0.041		0.001		0.001

Cerebral infarction is one type of common local brain disability disease. Brain blood circulation disorder leads to brain hypoxia-ischemia and ultimately lead to local cerebral necrosis or encephalomalacia. Damage to corresponding parts of brain tissue will cause corresponding symptoms, such as hemiplegia, aphasia and other clinical signs and symptoms of neurological deficit^[14,15].

In recent years, with medical science make great progress and develop highly in our country, in-depth research has been conducted on cerebral infarction etiology and pathology^[16]. Treatment such as drug and nursing intervention and rescue ability of critical patients have been remarkably improved, the mortality has been remarkably lowered. However, with the aging of our country's population and changes in lifestyles, there are more and more risk factors for cerebrovascular accidents such as age, smoking, obesity, alcoholism, diabetes, hyperemic skin, commercial lipids, and hyperhomocysteinemia, which remarkably made the incidence of cerebral infarction increased^[17-19]. A designed and personalized nursing plan can not only improve the patient's compliance and rehabilitation ability, but also let the nursing staff better understand the situation of the patients while working in case avoid false nursing. The recovery of patient's brain function is a very important factor for central nervous system recovery. Functional training contributes to cerebral cortex development and central nervous system recovery. Early rehabilitation intervention can increase brain mean velocity, establish collateral circulation, reorganize brain function, ease inflammation in nervous system and possibly improve patients' neurological function after surgery^[20]. In summary, individualized symptomatic rehabilitation care for patients with cerebral infarction can allow nursing staff to offer high quality services which could help patients on recovering their neurological function and daily activities as quickly as possible.

Based on the above, this paper studied the impacts of individualized symptomatic care of clopidogrel combined with oxiracetam in the treatment of patients with cerebral infarction on their daily activity ability, neurological function recovery, clinical efficacy and nursing adverse event rate. Divided 162 patients with cerebral infarction in our hospital into two groups randomly. Control group received routine nursing and experimental group did not receive routine nursing but also individualized symptomatic nursing. Then checked both groups nursing effects. The results

showed that the experimental group promoted the rehabilitation of patients' activities through Bobath's training, patients' active activities and family members' auxiliary activities, effectively increased the frequency and intensity of extremity convalescence and promoted limb movement mode recovery. After taking the above nursing measures, the total effective rate of clinical curative effect in experimental group reached 94.57%, which was remarkably higher than control group ($p < 0.05$).

The daily living activity index and neurological deficit score of experimental group were remarkably better than control group ($p < 0.05$). The nursing program of experimental group can remarkably improve the patients' neurological function and daily living ability. This proves that individualized symptomatic nursing for cerebral infarction treated with clopidogrel combined with oxiracetam can remarkably promote limb motor function recovery, improve patients' neurological function and daily living ability. Individualized symptomatic care is an effective way to improve clinical efficiency.

However, this study has some shortcomings. The clinical subjects were randomly divided into groups and double-blind enrollment was not achieved. More confounding factors would interfere with this study to some extent, such as infarct size, patient age, blood pressure, blood glucose and vascular stenosis may affect this study results, it needs further improvement.

In conclusion, for patients with cerebral infarction treated by clopidogrel combined with oxiracetam, after individualized symptomatic nursing intervention, the clinical efficacy, patient satisfaction and nursing compliance rate have been improved to a certain extent. At the same time, it can reduce the length of hospital stay; improve the post treatment ability of daily living and neurological deficit function. Individualized symptomatic care for clinical management of patients with cerebral infarction has important clinical significance and is worthy of promotion.

Acknowledgment:

Mi Gao and Juan Du have contribute same to this work.

Conflict of interests:

The authors declared no conflicts of interest.

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This article was originally published in a special issue, "New Advancements in Biomedical and Pharmaceutical Sciences" Indian J Pharm Sci 2022;84(2)Spl Issue "262-267"