

Application of Cluster Intervention Strategy in Patients with Stroke Associated Pneumonia

Hongfang Jia^{1*}, Jing Hao²

¹Department of Neurology, Changzhi People's Hospital, Changzhi 046000, Shanxi Province, China;

²Basic Medical College of Shanxi Medical University, Taiyuan 033200, Shanxi Province, China

Abstract: Objective: To study and analyze the clinical effect of cluster intervention strategy in patients with stroke associated pneumonia. **Methods:** The time span of the study was from April 2018 to March 2019. 70 stroke patients were selected and divided into the study group and the control group according to the random number table model. The control group was treated with routine nursing, and the study group was treated with cluster intervention. The indicators of the two groups were compared and analyzed. **Results:** Compared with the incidence of aspiration and stroke associated pneumonia, the study group had more advantages ($P < 0.05$). **Conclusion:** Cluster intervention can significantly reduce the incidence of associated pneumonia in stroke patients, which is worthy of comprehensive promotion.

Keywords: Cluster intervention; Stroke; Pneumonia

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***Corresponding author:** Hongfang Jia, jhf19720101@163.com

1 Introduction

Stroke associated pneumonia is a kind of pulmonary infection in the acute stage and sequelae stage of stroke, which can affect the prognosis of stroke patients and increase the mortality of stroke patients^[1]. Cough, expectoration, dyspnea and fever are the main clinical symptoms of stroke associated pneumonia, which is an independent risk factor for the continuous deterioration and death of stroke patients. Therefore, effective intervention measures should be taken to prevent stroke associated pneumonia^[2]. Cluster nursing is a new nursing mode of stroke associated pneumonia.

All nursing measures have a clear evidence-based basis, which can significantly improve the scientificity and standardization of nursing intervention^[3]. There is a lack of targeted research and Analysis on the application effect of cluster intervention strategy in patients with stroke associated pneumonia. This study summarized and evaluated the baseline clinical data of patients in our department, and evaluated and analyzed the related problems of the clinical application of cluster intervention strategy.

2 Material and methods

2.1 General information

The time span of the study was from April 2018 to March 2019. 70 stroke patients were selected and divided into study group and control group according to the random number table model. The basic clinical data of the two groups were summarized and analyzed. There were 19 males and 16 females in the study group. The age range was 48-71 years old, with an average of (60.24 ± 2.73) years. The duration range was 2-19 months, with an average of (10.55 ± 1.67) months. In the control group, there were 18 males and 17 females, with an average age of (60.38 ± 2.79) years (range 46-72 years) and an average duration of (10.75 ± 1.83) months (range 4-19 months).

Inclusion criteria: The results of CT and MRI examination were consistent with the diagnostic criteria of stroke of the national cerebrovascular conference, and the vital signs were stable.

Exclusion criteria: Patients complicated with liver and kidney failure, infectious diseases, malignant tumor and other patients unable to cooperate with the study.

2.2 Method

Patients in the control group were given routine nursing care. Nurses routinely monitored a number of physiological indicators of patients, carried out basic treatment of stroke according to the doctor's advice, and guided patients' daily diet and exercise.

The nursing plan of the study group was cluster intervention. The nursing staff inquired the relevant literature, analyzed the factors inducing stroke associated pneumonia, and formulated targeted nursing intervention measures. (1) Environmental Management. During the nursing operation, nurses should strictly follow the basic principle of seven steps to wash hands to avoid hospital infection. Adjust the temperature of ward to 20 °C -22 °C , and control the humidity properly. Wet cleaning mode was used to clean patients' beds to ensure that each bed had a towel, a single bedside table had a cloth, so as to avoid cross infection. The general ward should be ventilated at least twice a day, and the ICU should be disinfected by air disinfectant at least twice a day. The disinfection time should be 2 hours each time to keep the air fresh. The floor of the ward was disinfected with 500-1000 mg / L chlorine containing disinfectant. Strictly limit the number and time of daily visits to prevent bacterial infection. (2) Posture nursing. The nursing staff evaluated the patient's condition. The bedridden patient kept his head high, and the head of the bed was raised at least 30 degrees to keep the patient in a semi reclining position. Turn over once every 2 hours at least, protect the protuberance with soft pillow or dressing, keep the bed dry, flat and free of debris, and prevent the occurrence of pressure injury. (3) Oral care. Nurses check the gingival and oral mucosa tissue of patients, evaluate their oral health status, and formulate oral care frequency according to the situation. Generally speaking, oral care should be implemented after three meals a day. In case of coma, tracheal intubation or tracheotomy, and patients who can not eat indwelling gastric tube, oral care should be carried out at least four times a day to keep their mouth clean, tasteless and free of scale. (4) Aspiration care. Aspiration is the main cause of stroke associated pneumonia, so nurses need to take targeted nursing interventions. According to the swallowing test and drinking water test, the swallowing disorder was evaluated, and the type of diet was selected reasonably. In case of failure of paste swallowing test, nasal feeding with liquid food and water is required. Explain the daily diet

precautions for patients and their families, introduce the harm of aspiration caused by improper diet, inform the family members of patients to strictly follow the doctor's advice, and inform the family members to provide a clean environment for patients to eat, and do not disturb patients during eating, so as to prevent aspiration. Patients do not take unnecessary treatment and nursing operation before eating to ensure that patients eat in a stable state. The nursing staff adjusted the patient's position to sitting or semi lying position, with moderate flexion of the head and neck. The head of the bed should be raised at least 30 ° before nasal feeding, so that the patients can complete the nasal feeding in the semi recumbent position. After nasal feeding, the patients should maintain the semi recumbent position for 30 minutes, and wash the nasal feeding tube with warm water to prevent blockage; If there is retention in the stomach before nasal feeding, such as abdominal no bowel sounds or total gastric retention 150ml, it is necessary to stop nasal feeding. If patients need sputum suction, nursing staff should perform sputum suction before or 1 hour after nasal feeding. (5) Expectoration nursing. The nurses demonstrated the correct method of deep breathing and expectoration for patients, and guided patients to complete expectoration independently as far as possible. If the patient's condition is critical and cannot complete expectoration independently, back patting and auxiliary sputum suction should be used to promote expectoration. If the patient is treated with endotracheal intubation or tracheotomy, the appropriate sputum suction tube should be selected to assist the patient in expectoration, and hand hygiene should be strictly done before and after the operation. During the operation, it is necessary to ensure that the movement is gentle, and the expectoration time should not exceed 15s. If the patient's sputum is viscous, the nursing staff should follow the doctor's advice to dilute the sputum by atomization inhalation intervention to promote expectoration. After expectoration nursing, trachea cannula should be disinfected strictly to prevent cross infection.

2.3 Evaluation criteria

The incidences of aspiration and stroke associated pneumonia were compared between the two groups.

2.4 Statistical methods

SPSS 23.0 software was used to calculate all kinds of data. In this study, the measurement data was ($\bar{x} \pm s$),

the test method was t, the count data was (%), and the test method was χ^2 . If $P < 0.05$, there were differences between groups.

3 Results

Compared with the incidence of aspiration and stroke associated pneumonia, the study group had more advantages ($P < 0.05$).

Table 1. Compared the incidence of aspiration and stroke associated pneumonia between the two groups (n /%)

Group	Aspiration by mistake	Stroke associated pneumonia
Research group (n = 35)	2(5.7)	3(8.6)
Control group (n = 35)	11(31.4)	11(31.4)
χ^2 value	7.651	5.714
P value	0.005	0.16

4 Discussion

Statistics show that the incidence rate of pneumonia in stroke patients is about 20% (Table 1). The pathogenic factors of stroke associated pneumonia are complex, the duration of the disease is long, and the mortality rate is high, which seriously affects the treatment and prognosis of stroke. Therefore, effective intervention measures should be taken to prevent stroke associated pneumonia^[4].

Routine nursing measures for stroke, nursing staff did not take targeted preventive measures for stroke associated pneumonia, nursing quality and nursing effect need to be improved^[5-6]. Based on the theory of evidence-based medicine, cluster intervention measures can analyze the factors inducing stroke associated pneumonia, find out the relevant basis of nursing measures, optimize the routine nursing measures, and centralize and unify all nursing interventions, which can significantly improve the quality of nursing. During the specific nursing intervention, nurses give priority to environmental nursing, strictly follow the basic principles of aseptic operation, clean the ward floor every day, disinfect the air and clean the beds, which can effectively prevent pneumonia caused by infection^[7]. At the same time, nursing staff targeted to carry out posture and oral nursing intervention, which can keep patients' oral cavity clean and sanitary, and prevent pneumonia caused by posture factors. In this study, nursing staff focus on the nursing of aspiration, aspiration is the main factor leading to stroke associated pneumonia. Therefore, nursing staff refine the daily diet guidance, guide the family members of patients to strictly follow the doctor's advice to order meals, assist patients to maintain sitting or semi lying position during eating, hemiplegic patients choose healthy side to eat, and implement targeted nursing intervention for patients with nasal feeding, which can effectively reduce the incidence of aspiration. The

incidence of aspiration^[8-9]. Conclusion and analysis of the data, the incidence of aspiration and stroke associated pneumonia in the study group after nursing intervention were lower than those in the control group, it can be considered that the application effect of cluster nursing is significant.

In conclusion, cluster intervention can significantly reduce the incidence of associated pneumonia in stroke patients, which is worthy of comprehensive promotion.

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