

The Effect and Effectiveness Evaluation of Sit-up Training on Elderly Bedridden Patients with Severe Pneumonia

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Abstract: The objective of the study was to access the effect and the effectiveness of sit-up training on elderly bedridden patients with severe pneumonia. A total of 150 elderly bedridden patients diagnosed with severe pneumonia were recruited for this study. They were divided equally into the observation group and control group, that is, 75 cases in each group. All patients were selected from January 2016 to April 2018. On this basis, both groups were treated with the same routine nursing care except with the addition of 30–60 min sit-up trainings twice daily for the control group under supervision. The clinical hospitalization outcomes, length of hospital stay, and patient care satisfaction of the two groups were compared. The clinical hospitalization outcomes, length of hospital stay, and patient satisfaction of the observation group were found to be superior to the control group, and the difference was significant. In bedridden elderly patients with severe pneumonia, sit-up training had positive effects and beneficial in improving the clinical outcomes and recovery rate.

Keywords: *sit-up training; elderly; bedridden; severe pneumonia*

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0 Introduction

Elderly patients with severe pneumonia who suffer from difficulties in sputum expectoration require quality and intensive cares from the caregiver, especially in assisting sputum clearing and other disease interventions, such as back patting and sputum aspiration^[1]. Elderly patients

have poorer physical fitness and lower immune system. Therefore, when they suffer from severe pneumonia, the mortality rate is relatively high, which seriously threatens their life safety and affects the improvement of the quality of life^[2]. Besides, severe pneumonia also demonstrates a feature of rapid disease development, which will lead to the development of pathogenic bacteria in the body into hemolytic *streptococcus* and *Streptococcus pneumoniae*. In addition, due to the weaken physical and related organ functions, as well as comorbidity of chronic diseases and other minor diseases among the elderly, the incidence a of severe pneumonia tends to be higher, the degree of development will be more serious, and the rate of development will also be faster^[3]. Therefore, to enhance the clinical treatment and nursing care outcomes, it is necessary to give highly effective and reasonable nursing intervention to the bedridden elderly patients. At present, with a high level of attention and intervention being raised among the researchers in relevant fields on efforts to improve the overall quality of life of elderly patients with severe pneumonia, it has become the focus of clinical research^[4]. This study implemented further interventions on bedridden patients with severe pneumonia, which could be served as a reference for future researches^[5]. Through clinical implementation, the authors found that sit-up training for elderly bedridden patients with severe pneumonia is beneficial for disease rehabilitation. Report as follows.

1 Materials and methods

1.1 General information

From January 2016 to April 2018, a total of 150 (83 males and 67 females) elderly bedridden patients

with severe pneumonia treated in our department, with age ranged between 81 and 93 years old, and the median age of 85.9 years old was enrolled. The diagnosis of severe pneumonia was in accordance with the 2006 diagnostic criteria by the Chinese Thoracic Society^[6]. All patients were divided into an observation group and control group, with 75 patients in each group. There were 41 males and 34 females in the observation group with an age of 85–93 years old, and mean age of 79.13 ± 6.46 years old. Of the patients in the observation group, 3 had right middle lobe infection, 2 had right upper lobe infection, 15 had left lower lobe infection, and 15 had right lower lobe infection while 26 had infections at both sides of lungs; 12 had obstructive pulmonary disease, 1 had lung abscess, and 1 had bronchiectasis. There were 42 males and 33 females in the control group, aged 81–92 years and mean 78.25 ± 7.38 years old; 4 had right middle lobe infection, 5 had right upper lobe infection, 18 had left lower lobe infection, and 15 had right lower lobe infection, while 15 had infection at both sides of lungs; 13 had chronic obstructive pulmonary disease, 2 had of lung abscess, and 3 had bronchiectasis. With the approval of the hospital ethics committee and informed consent from the patients, all patients were included for the study except for the patients who could not move due to hemodynamic instability. The sit-up training in this article referred to a position away from the bed-wheelchair or chair, and all cases were diagnosed by hospitals above second-grade.

1.2 Method

First, routine nursing care was applied to the control group. Patients from the control group were given routine nursing care by nursing staffs on admission. Routine basic care was also performed according to the regulations. As the beginning point of human feeding and digestion, the oral cavity plays an important role in the digestive process. It protects the human body from bacterial infection as well as effectively prevents pathogenic microorganisms' invasion mainly through saliva secreted by the oral cavity and oral salivary glands. At present, in the treatment of elderly patients with severe pneumonia, oral therapy is also a growing concern. On the basis described above, the observation group practiced sit-up twice a day for 30–60 min each time. For the convenience of the patients, daily necessities such as water, cup, and paper towels were placed on the table in front of the patients' seats. By retrieving those items on their own, it served as a purpose to train their brain and

exercise their hands. Besides, book and magazines could be supplied for reading, or some small balls be provided for gripping in hands, in any ways to achieve the aim of allowing the patients to sit up as much as possible.

1.3 Control group

The nursing care satisfaction and quality of life of the two groups of patients were compared. The quality of life of the two groups of patients was mainly accessed by the Health Status Questionnaire (SF-36), which included physical function, emotional function, role function, and social function. The quality of life is proportional to the score. In addition, the nursing care satisfaction of the two groups of patients was investigated mainly according to the nursing care satisfaction questionnaire designed by our hospital. When the score is >85 , means the patients are super satisfied with the nursing care; when the score is between 65 and 84, means the patients are satisfied with the nursing care; when the score is <60 , means the patients are not satisfied with the nursing care.

1.4 Statistical analysis

The SPSS17.0 software was used for data analysis. The tool used to measure the data was ($\bar{x} \pm s$), and the t-test was performed. The application of percentage referred as count, χ^2 test was performed, and $P < 0.05$ indicates statistical differences.

3 Results

3.1 Comparison of clinical effectiveness between the two groups

The clinical effectiveness of the two groups of patients was compared. The result of observation group was found to be much higher than the control group, and the difference was significant, Table 1.

3.2 Comparison of quality of life scores between the two groups

The physical function, emotional function, role function, and social function of the two groups were compared. The score of the observation group was found to be better than the control group, Table 2.

3.3 Comparison of nursing care satisfaction between the two groups

The nursing care satisfaction of the observation group was found to be higher than the control group, Table 3.

Table 1. Comparison of clinical effectiveness between the two groups

Group	<i>n</i>	Significantly effective	Effective	Ineffective	Effectiveness
Observation	75	31 (41.33)	37 (49.33)	7 (9.33)	90.67*
Control	75	23 (30.67)	33 (44.00)	19 (25.33)	74.67

Table 2. Comparison of quality of life scores between the two groups

Group	<i>n</i>	Physical function	Emotional function	Role function	Social function
Observation	75	1.99±0.73*	1.87±0.62*	1.78±0.59*	1.16±0.43*
Control	75	1.42±0.65	1.34±0.57	1.22±0.43	0.70±0.23

Table 3. Comparison of nursing care satisfaction between the two groups

Group	<i>n</i>	Very satisfactory	Satisfactory	Unsatisfactory	Satisfaction
Observation	725	51 (68.00)	21 (28.00)	3 (4.00)	96.00*
Control	75	40 (53.33)	22 (29.33)	13 (17.33)	82.67

Table 4. Comparison of the length of hospital stay between the two groups

Group	<i>n</i>	Average days of hospital stay
Observation	75	15
Control	75	28

3.4 Comparison of the length of hospital stay between the two groups

The length of hospital stay was compared, and the observation group was found to be staying less days than the control group, Table 4.

4 Discussion

Severe pulmonary infection in the elderly is the most common and often diagnosed disease in elderly patients^[7]. Statistics showed that 70% of the patients died of pneumonia were the elderly. In elderly bedridden patients suffered from severe pneumonia, symptoms and problems related to the respiratory system usually occur. The symptoms presented not only restricted to those basically and commonly found among pneumonia sufferers but also the symptoms including systemic poisoning. At the same time, due to the low physical quality of elderly patients, many other systemic complications can occur. In addition to the rapid onset of severe pneumonia diseases which makes the medical condition critical and serious, and susceptible to a high mortality rate, it, therefore, poses a great challenge for clinical treatment. According to the relevant clinical research results, during the duration of treatment, patients with severe pneumonia usually need effective and active treatment^[8]. On this basis,

comprehensive nursing interventions are needed to improve clinical treatment effectiveness and nursing care satisfaction. The results of this study showed that during the comprehensive nursing intervention, effective sit-up training could improve the recovery of the disease, intensified physical development, raised patients' treatment confidence, enhanced the patients' negative mental condition, improved patient compliance, reduced the incidence of complications, and improved the quality of life of patients.

Comprehensive nursing care is currently applied mostly in clinical treatment, and it also has good nursing care effect^[9]. It can combine different personal characteristics of patients and propose personalized nursing solutions to provide further nursing services according to the social, physical, and cultural needs of patients^[10]. All in all, sit-up training has a significant effect on the effects and effectiveness of elderly patients with severe pneumonia, and it is worthy of further application and promotion.

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