

## **Clinical research of early systematic nursing intervention for ICU patients with pulmonary infection.**

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### **Abstract**

**Objective:** To observe and analyse the positive effect of systematic nursing intervention on lung infection of ICU patients.

**Method:** 68 cases of lung infection from patients who were accepted into ICU were selected randomly between April 2016 and November 2016. These 68 patients were divided into two groups including observation group and control group. Treat the observation group with systematic nursing intervention, and the control group were dealt with conventional care. To observe and compare the incident rate of lung infection, infection incidence date, ICU stay, adverse reaction rate, and life quality between the two groups.

**Results:** The average incident rate of lung infection for patients in observation group is 46%, which is lower than 65% of patients in the control group; the infection incident date ranges from 18 to 23 d for patients in the observation group, which is obviously less than the control group patients' 22 to 29 d; the ICU stay of patients in the observation group is  $6.36 \pm 1.95$  d, and the ICU stay of patients in the control group is  $9.23 \pm 3.56$  d. There were significant difference between the two groups ( $p < 0.05$ ), the adverse reaction rate of the observation group was 6.59%, which is clearly lower than that of the control group (24.16%); the life quality of the observation group is obviously higher than that of the control group, differences between the two groups has statistical significance ( $p < 0.05$ ).

**Conclusion:** Conducting systematic nursing intervention to ICU patients of lung infection can reduce the incident rate of lung infection, shorten both the time of infection incidence and the average ICU stay, and improve the life quality of ICU patients.

**Keywords:** Early systematic nursing intervention, ICU, Pulmonary infection.

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### **Introduction**

ICU patients often need invasive treatment. To some degree, it adds the incident rate of lung infection, which not only has a serious effect on therapeutic activity but also restricts physical and mental health of the patients [1]. Based on holistic nursing care, systematic nursing intervention aims at providing more humanistic nursing service for patients [2]. This study selects and explains 68 cases of lung infection from those who were accepted into ICU of our hospital between May 2014-November 2015, discussing the practical application of the systematic nursing intervention. It is concluded as follows.

### **Data and Methods**

#### **General data**

Select randomly 68 cases of lung infection from those patients who were accepted into ICU of our Hospital between April 2016 and November 2016. Randomly divide these selected patients into two groups by means of nursing intervention, i.e. observation group (34 cases) and control group (34 cases). In the observation group, there are 16 male patients and 18 female patients with ages ranging from 28 to 75 years old. The average age is  $55.21 \pm 4.16$  years old, and the average disease course is  $6.12 \pm 1.03$  d. In the control group, there are 19 male patients and 15 female patients with ages ranging from 27 to 76 years old. The average age is  $54.35 \pm 1.78$  years old, and

the average disease course is  $5.37 \pm 1.31$  d. There is no statistical significance in aspects of general data of the two groups clinically ( $p > 0.05$ ).

### ***Nursing measures***

Patients of the control group are treated with conventional nursing invention. Nurses are expected to conduct clinical nursing according to the patients' condition and the doctors' advice. Patients of the observation group are treated with systematic nursing intervention, and the detailed measures are as follows [3].

### ***Psychological care***

Apart from keeping informed of patients' mental status, when psychological problems are observed, such as nervousness, terror, anxiety, and doubts, the nurses should communicate with the patients' families timely to relieve the patients' harmful feelings, encourage patients, help them build confidence, and finally have them cooperate actively with relevant diagnosis and treatment [4].

### ***Oral care***

After combining symptoms of lung infection, the body tends to secrete some undesirable substances which are easy to breed bacteria in the mouth cavity. Therefore, nurses need to help patients keep the mouth clean and inform their families of the importance of keeping the mouth cavity clean. For example, after each meal, normal saline should be used timely to help patients rinse the mouth to avoid the incidence of respiratory tract infection [5].

### ***Sputum suctioning care***

As for those who cannot eliminate sputum by themselves, nurses should clear the excretion inside the respiratory tract and use a sputum aspirator to clear the sputum for them. During the process, nurses must choose the proper suction catheter according to the patient's condition, avoiding bringing the stimulant function to the patient. Before healing with medicine, the patient's medicine allergy history should be asked, the sputum secretion should be collected when necessary, sensitivity test should be conducted on the sputum

**Table 2.** Comparison of the complications in the two groups.

Group	Cases number	Complications			Adverse effect rate (%)
		Wound infection	Detachment	Ecchymoma	
Observation group	1	1	1	0	5.88
Control group	3	3	2	3	23.5
$\chi^2$					5.4673
p					0.0011

sample, and then medicine treatment will be allowed and carried out strictly according to the results of the sensitivity test [6].

### ***Observation indicators***

Compare the two groups in aspects of ICU stay and adverse effect rate. Meanwhile, use WHOQOL-BREF to assess the life quality of patients from the two groups after nursing intervention, including four aspects of physical condition, mental status, cognitive ability, and body pain, the highest score of each item is 100. Higher scores, better life quality.

### ***Statistical method***

Data in this writing is processed with SPSS 20.0, enumeration data is presented as n (%) and examined with  $\chi^2$ , measurement data is presented as ( $\bar{x} \pm s$ ), and the material is examined with t. The differences were statistical significant ( $p < 0.05$ ) [7].

## **Results**

### ***Comparison of postoperative complications incidence***

In the observation group, there is one case of wound infection and one case of detachment, the adverse effect rate is 5.88%. In the control group, there are three cases of wound infection, two cases of detachment, and three cases of ecchymoma, the adverse effect rate is 23.5%, and the difference between the two groups is of statistical significance ( $P < 0.01$ ); the ICU stay of patients from the observation group is ( $6.36 \pm 1.95$ ) d, while the ICU stay of patients from the control group is ( $9.23 \pm 3.56$ ) d, and the difference between the two groups is of statistical significance ( $p < 0.01$ , Tables 1 and 2).

**Table 1.** Comparison of ICU stays in the two groups.

Group	ICU length of stay
observation group	$6.36 \pm 1.95$
control group	$9.23 \pm 3.56$
t	6.3625
p	0.0034

### Life quality of assessment

Assessment of life quality, which refers to physical condition, mental status, cognitive ability, and body pain, is obviously

higher in observation group than in the control group, and the difference between the two groups is of statistical significance ( $p < 0.05$ , Table 3).

**Table 3.** Assessment of life quality for the two groups.

Group	Physical condition	Mental status	Cognitive ability	Body pain
Observation group	84.52 ± 14.26*	81.38 ± 14.96*	88.62 ± 16.57*	82.36 ± 15.08*
Control group	46.71 ± 11.05	42.43 ± 12.55	44.65 ± 9.64	41.83 ± 14.22

### Discussion

Patients in ICU are mostly middle-aged and old, they have rather poor resistibility due to function-decreased immune-tissue and organs apart from underlying disease, which may increase risks of lung infection incidence to some extent [8,9]. Those who have poor pulmonary ventilation and lower vital capacity are prone to experience lung infection [10]. Systematic nursing invention centers on patients with consideration of the patient’s physical and mental needs, carries out more targeted nursing intervention for patients, and makes patients fully experience the care from the hospital [11]. When patients of each group receive good physical and mental nursing service, nurses will provide them with more comprehensive oral care, sputum suctioning care and medicine care.

Based on an adequate conduction of nursing intervention mentioned above, complication nursing should be also carried out for patients, because patients tend to have a high fever after lung infection [12]. Therefore, nurses must provide them with some physical cooling measures [13]. For those who have a prolonged high fever, nurses should observe various indicators of vital signs of the patient closely, and should start oxygen inhalation therapy in a timely manner to relieve hypoxia-ischemia symptoms if the patient with lung infection is subjected to serious breathing difficulty [14].

In this study, the patients of the observation group receive systematic nursing intervention, and the control group receive conventional mode of nursing. The comparison between the two groups shows: patients of the observation group have shorter stay in ICU than patients of the control group, and meanwhile the life quality assessment of the observation group patients is obviously higher than that of the control group patients, it’s a great difference; it’s concluded that conducting systematic nursing intervention on ICU patients with lung infection can shorten their stay in hospital and improve their life quality; the major reason for such a difference lies in the fewer cases the study selected, and it’s supposed to add more cases to the study. However, the results can still show that conducting systematic nursing intervention can reduce the adverse effect efficiently and have an active impact on prognosis of patients.

In a word, systematic nursing intervention could fully consider the clinical characteristics of the ICU patients with lung infection. Under the condition of effective identification of the

lung infection factors, emphasis on monitoring vital signs and enhancement of respiratory care is significant to the relief of clinical symptoms and improvement of the patients’ life quality.

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