

The Application Effect of Comprehensive Pulmonary Rehabilitation Intervention in Respiratory Diseases

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Abstract: Objective: To analyze the application effect of comprehensive lung rehabilitation intervention in respiratory diseases. Method: 82 lung infection patients admitted to the respiratory department of our hospital from February 2019 to February 2020 were selected as the study subjects. The above patients were randomly divided into a control group of 41 cases and an observation group of 41 cases. The control group received routine rehabilitation care, while the observation group received comprehensive nursing intervention on the basis of the control group. Compare the overall nursing efficacy, improvement of fever, cough, expectoration, and wet rale among patients between groups, and nursing satisfaction. After nursing care, the observation group had a significantly higher nursing effectiveness rate, with a statistically significant difference ($P < 0.05$). After nursing, the observation group took a shorter time to improve fever, cough, expectoration, and wet rale, and the difference was statistically significant ($P < 0.05$). After nursing, the observation group showed higher nursing satisfaction, and the difference was statistically significant ($P < 0.05$). Conclusion: Comprehensive intervention in lung rehabilitation is beneficial for improving symptoms related to lung infection in nursing care, with high patient satisfaction.

Keywords: Pulmonary Infection; Comprehensive Intervention; Rehabilitation Nursing

1. Materials and Methods

1.1 Clinical data

82 lung infection patients admitted to the respiratory department of our hospital from February 2022 to February 2023 were selected as the study subjects. The above patients were randomly divided into a control group of 41 cases and an observation group of 41 cases. In the control group, there were 21 males and 20 females; Age range from 43 to 75 years, with an average age of (58.00 ± 1.10) years; Weight 54.50-76.00 kg, average (62.60 ± 2.00) kg; The course of the disease is 0.80-3.00 years, with an average course of (1.60 ± 0.70) years. In the observation group, there were 22 males and 19 females; Age range from 44 to 75 years, with an average age of (58.20 ± 1.20) years; Weight 55.00-76.00 kg, average (62.80 ± 2.10) kg; The course of the disease is 0.90-3.10 years, with an average course of (1.70 ± 0.70) years. There was no significant difference in the basic data between groups and it was comparable ($P > 0.05$).

1.2 Inclusion and Exclusion Criteria

Inclusion criteria: (1) Clinical diagnosis of patients with pulmonary infection; (2) Informed consent patients for the content of this study; (3) Patients with varying degrees of fever, cough, and phlegm in clinical settings; (4) Patients with phlegm or wet rale during lung auscultation; (5) Clear inflammatory lesions can be seen on imaging examination.

Exclusion criteria: (1) Patients with impaired functions of important organs such as the heart, liver, and kidneys; (2) Patients with abnormal cognitive and expression abilities; (3) Patients with coagulation abnormalities; (4) Patients with coronary metal stent implantation or pacemaker implantation; (5) Cancer patients.

1.3 Method

The control group patients were given routine rehabilitation nursing intervention. (1) Medication treatment and

intervention with anti infective drugs. (2) Scientific exercise, such as rolling exercises, sitting exercises, etc., gradually perform standing exercises after the patient's condition stabilizes, 20 minutes per session, once a day. (3) Breathing exercises. Teach the patients the breathing methods such as lip retraction and exhalation, Diaphragmatic breathing, etc., 30 min/time, once a day. (4) Extracorporeal drainage and sputum drainage guidance.

The observation group patients received comprehensive nursing intervention combined with ultra short wave therapy on the basis of the control group. (1) The comprehensive nursing intervention was roughly the same as the control group. (2) Ultrashort wave therapy: The patient is placed in a supine position with both lungs as the treatment target area, 20 minutes per session, once a day. Both groups of patients were evaluated for rehabilitation nursing effectiveness one month later.

Instrument used: Ultrashort wave therapeutic instrument (manufacturer: Shijiazhuang Sanao Medical Equipment Co., Ltd.; model: DL-C-C)

Ultrashort wave therapy process: (1) Remove all metal objects from the patient's body, take a comfortable position, and the treatment area does not need to be exposed. The thickness of the clothes worn can be calculated within the gap. Check if the machine buttons are in the "0" position, turn on the power, and preheat. (2) Follow the doctor's advice to select appropriate electrodes, align them with the treatment site, and determine the thickness of the pad (gap) based on the depth of the lesion and the needs of the condition. Adjust the distance between the instrument electrode and the surface of the treated area, and then fix the electrode. Turn the output knob to the treatment position and adjust the tuning machine knob to achieve resonance. (3) Strengthen observation of patients during the nursing process, pay attention to their reactions, and adjust the dosage at any time. If there are any abnormal sensations (such as burning pain), overheating, palpitations, dizziness, etc., the nursing process should be stopped and promptly addressed. (4) Dose is divided into three types: no heat, slight heat, and warm heat. Generally, it is controlled by the operator based on the patient's sensation. When the patient's sensation weakens, it is controlled by adjusting the air gap, nursing time, and output operating range. (5) After the care is completed, turn off the machine in reverse order, cut off the power, and remove the electrodes.

Attention: (1) When the nursing area is damp, it should be wiped dry before nursing. (2) When caring for sensory disorders and scars, attention should be paid to preventing burns. (3) The machine must work in a safe condition, with a grounding wire, and wooden beds and chairs should be used for care. (4) When nursing, instruct the patient not to move their body position casually and not to touch surrounding metal objects. (5) The machine must not operate in a detuned state. (6) The distance between two wires should not be less than the distance between the machine output socket to avoid overheating and accidents near the wires. The wires should not be rolled, crossed, or in contact with each other to avoid damage to the wires or short circuits that may damage the machine. (7) It is contraindicated for patients with bleeding tendency, Hypotension, heart failure, metal nursing site, pacemaker and heart valve replacement.

1.4 Observation indicators

1.4.1 Overall nursing efficacy

Compare the pulmonary infections (fever, cough, expectoration, and moist rales) and inflammatory lesions displayed on X-ray chest films between two groups of patients. The overall nursing efficacy is divided into three levels: good, fair, and poor: good indicates no clinical symptoms, and inflammatory reactions disappear on chest X-ray. It can still alleviate clinical symptoms, and partial disappearance of inflammatory lesions can be seen on X-ray chest film. Poor is characterized by no improvement or aggravation of clinical symptoms, and no improvement or aggravation of inflammatory lesions can be seen on X-ray chest films.

Nursing effectiveness rate=(good+fair)/total number of cases × 100.00%.

1.4.2 Improvement of fever, cough, expectoration, and wet rale

Statistical analysis was conducted on the time taken for the improvement of fever, cough, phlegm, and wet rale in two groups of patients.

1.4.3 Nursing Satisfaction

Nursing satisfaction is divided into four levels: very satisfied, relatively satisfied, not very satisfied, and not satisfied. Nursing satisfaction=(very satisfied+relatively satisfied)/total number of cases × 100.00%.

1.5 Statistical Methods

SPSS 20.0 software was used for data analysis, with measurement data represented by () and counting data represented by (%). Data comparison was conducted using t-tests, and a P<0.05 was considered statistically significant.

2. Result

2.1 Overall nursing efficacy of two groups

After nursing, the observation group had a significantly higher nursing effectiveness rate (P<0.05). See Table 1.

Table 1 Overall nursing efficacy between groups (n), (%)

group	Good (n)	Acceptable (n)	Poor (n)	Nursing effectiveness rate (%)
Control group (41)	16	14	11	20 (48.78)
Observation group (41)	28	10	3	38 (92.68)
χ^2 value	-	-	-	19.086
<i>P-value</i>	-	-	-	<0.001

2.2 Time taken for improvement of fever, cough, phlegm, and wet rale in two groups

After nursing, the observation group took shorter time to improve fever, cough, phlegm, and wet rale (P<0.05). See Table 2.

Table 2 Time taken for symptom improvement between groups (d), ($\bar{x} \pm s$)

group	Heating (d)	Cough (d)	Expectoration (d)	Wet rale (d)
Control group (41)	2.63±1.42	12.24±4.85	17.17±5.06	9.70±2.85
Observation group (41)	2.43±1.25	8.68±2.62	12.21±4.59	6.77±2.37
<i>t-values</i>	0.677	4.135	4.649	5.061
<i>P-value</i>	0.500	<0.001	<0.001	<0.001

2.3 Two groups of nursing satisfaction

After nursing, the observation group showed higher nursing satisfaction (P<0.05). See Table 3.

Table 3 Intergroup Nursing Satisfaction (n), (%)

group	Very satisfied (n)	Relatively satisfied (n)	Not very satisfied (n)	Dissatisfied (n)	Nursing satisfaction (%)
Control group (41)	17	11	9	4	28 (68.29)
Observation group (41)	28	8	1	4	36 (87.80)
χ^2 value	-	-	-	-	4.556
<i>P-value</i>	-	-	-	-	0.033

3. Discussion

The intervention of pulmonary infection is relatively important, among which comprehensive nursing intervention is essential. In the process of comprehensive nursing intervention, it can improve cardiopulmonary function and promote benign circulation. Comprehensive nursing intervention can enable patients to continuously master basic movements such as standing and walking, as well as stimulate nerves and promote the recovery of neurological function. Respiratory exercise can improve patients' cardiopulmonary function, accelerate intracranial blood circulation, and alleviate the condition [4]. Ultrashort wave therapy is increasingly widely used in the intervention of pulmonary infections, utilizing the temperature effect to accelerate blood circulation in the lungs and surrounding areas, thereby improving local poor blood circulation and achieving the goal of dissipating inflammation. Therefore, ultra short wave physical therapy has an improvement effect on patients' lung infections, thereby reducing the severity of lung infections.

References

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