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Observation on the Effect of Integrated Medical and Nursing Care in Patients with Pulmonary Tuberculosis Combined with Lung Cancer

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Abstract: *Objective:* To explore the effect of integrated medical and nursing care in patients with pulmonary tuberculosis combined with lung cancer. *Methods:* From August 2021 to August 2022, 60 patients with pulmonary tuberculosis combined with lung cancer were admitted. All patients were diagnosed with pulmonary tuberculosis according to the Guidelines for the Diagnosis and Treatment of Pulmonary Tuberculosis and with lung cancer by pathology. The patients were randomly divided into two groups, with 30 cases in each group. The control group received daily nursing care, whereas the study group received integrated medical and nursing care. The sputum conversion rate, tumor remission rate, and quality of life of patients were observed and analyzed. *Results:* The item function score and symptom function score of the observation group were higher than those of the control group ($P < 0.05$); the total effective rate of the observation group was significantly higher than that of the control group ($P < 0.05$); the sputum conversion rate of the observation group was significantly higher than that of the control group ($P < 0.05$). *Conclusion:* For patients with pulmonary tuberculosis combined with lung cancer, the application of integrated medical and nursing care can help consolidate the treatment effect and improve the quality of life of patients; thus, it is worthy of promotion and application.

Keywords: Medical care integration; Pulmonary tuberculosis; Lung cancer

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1. Introduction

Lung cancer is the most common malignant tumor in medical oncology, and chemotherapy is one of the fundamental treatment methods [1]. Tuberculosis is a chronic infectious disease caused by *Mycobacterium tuberculosis*. Its main clinical manifestations are cough, sputum, chest tightness, shortness of breath, fever, hot flashes in the afternoon, night sweats, and weight loss [2]. The incidence of lung cancer combined with pulmonary tuberculosis is not high, but its treatment poses a challenge. Regarding the relationship between tuberculosis and lung cancer, some think that they are related, some think that they are not, and some think that they are antagonistic. As early as the 19th century, there were records of lung cancer combined with pulmonary tuberculosis. According to autopsy statistics, the coexistence rate of tuberculosis and lung cancer is 0.44%–0.75%. General clinical data have shown that the incidence of tuberculosis combined with

lung cancer is 2%–8%, of which 89.8% are men and 84.6% are over 50 years old; the coexistence of the two diseases is more common in the same lung lobe on the same side; carcinoma is more common, followed by undifferentiated carcinoma; 78% of cases suffer from pulmonary tuberculosis for more than 5–20 years, and most lung cancers are detected in the late stage. In short, with the aging of tuberculosis patients and the rising incidence of lung cancer, the coexistence of lung cancer and tuberculosis has shown an increasing trend. The current epidemic of tuberculosis combined with lung cancer in China is relatively severe and lacks a standardized nursing intervention model. The resulting nursing-related problems are particularly prominent. The integrated medical and nursing care model allows physicians and nurses to actively participate in medical and nursing care, nursing staff to actively participate in medical activities, and medical staff to actively participate in nursing activities, so as to help patients and their families to understand the conditions and actively cooperate with treatment [3]. The aim of the present study was to explore the effect of integrated medical and nursing care in patients with lung cancer combined with pulmonary tuberculosis.

2. Materials and methods

2.1. General information

Sixty patients with pulmonary tuberculosis and lung cancer admitted from August 2021 to August 2022 were included in the study. All 60 patients were diagnosed with pulmonary tuberculosis with reference to the Guidelines for the Diagnosis and Treatment of Tuberculosis and also pathologically confirmed with lung cancer. They were randomly divided into two groups, with 30 patients in each group. The observation group consisted of 18 males and 12 females, age ranging from 23 to 71 years, with an average age of 49.1 ± 4.2 years; there were 9 cases of adenocarcinoma, 8 cases of squamous cell carcinoma, and 13 cases of adenosquamous carcinoma. The control group included 20 males and 10 females, age ranging from 25 to 65 years, with an average age of 48.6 ± 4.1 years; there were 10 cases of adenocarcinoma, 9 cases of squamous cell carcinoma, and 11 cases of adenosquamous carcinoma. There was no statistically significant difference in general information between the two groups of patients ($P > 0.05$).

2.2. Methods

The patients in the control group received daily nursing care. The patients were given environmental introduction, chemotherapy drugs, dietary and activity advice, rest, related examinations, medications, and rehabilitation guidance before leaving the hospital.

The experimental group received the integrated medical and nursing care intervention. (1) Establishment of a comprehensive medical and health responsibility group: After dividing the medical staff of each medical institution into several groups, each of which has an attending physician and a nurse-in-charge, and forming a stable team, appropriate arrangements are made for each squad, while implementing an 8-hour and 24-hour shift system. (2) Comprehensive check-up: All medical staff participate in the check-up, all medical workers communicate with the patients and their family members, physicians check for changes in patients' condition and ask about their physical conditions; nurses ask about patients' care needs and record the changes in their conditions; the nursing staff discusses the treatment and care plan with the patients and their families and designs a personalized treatment and care plan. (3) Integration education of medical personnel: Physicians educate patients and their family members about the pathogenesis and prognosis of tuberculosis combined with lung cancer, as well as inform them of the treatment plan, so as to enhance patients' understanding of these conditions and thus improve their compliance and initiative in the treatment of tuberculosis combined with lung cancer, while nurses provide detailed nursing care to patients; in this process, given the requirement for physical examinations and treatments, patients are informed of the relevant examinations and treatments, and nurses actively accompany patients during the examinations

and treatments, while providing corresponding guidance to ensure a smooth examination. (4) Comprehensive spiritual counseling in healthcare: Medical workers communicate the concerns of patients about the subject matter and skillfully communicate the thoughts of patients based on the patients' personality, education level, and other factors, and they detect patients' negative emotions in a timely manner; physicians take the initiative to help patients understand the disease, counsel patients, and treat the condition appropriately; nurses actively seek to support patients spiritually, create a good medical environment, relieve the mental pressure of the external environment on patients, guide family members to provide care and support to the patients, and improve patients' self-confidence; with significant negative emotions, a psychiatrist is consulted, and appropriate treatment measures are developed. (5) Life counseling with integrated medical care: Medical practitioners assess the nutritional status of patients and develop corresponding meal plans; physicians inform the patient of the importance of following the medically prescribed diet; nurses devise a detailed meal plan, such as the way of eating, the amount of food eaten, and the type of food to be consumed, so as to ensure nutritional balance. (6) Comprehensive hospitalization guidance and follow-up treatment: Medical work and patients are followed-up before hospitalization. During hospitalization, medical staff seeks to understand the changing status of patients' condition and gives patients targeted medication and review guidance, while nursing staff gains insights into patients' psychological and living status and provides guidance on physical exercise, psychology, diet, and so on.

2.3. Observation indicators

The observation indicators in this study included sputum conversion rate, tumor remission rate, and quality of life of patients. The sputum bacteriology conversion rate was recorded as negative sputum test results for 3 consecutive months; after treatment and nursing, ≥ 3 specimens were selected every month, and sputum smear examination was performed ≥ 1 time per month. The tumor remission rate was divided into four according to the new standard of solid tumor efficacy evaluation: complete remission, partial remission, stable disease, and progressive disease; total curative rate = complete remission rate + partial remission rate. The quality of life of patients was evaluated by the cancer patient quality of life score (QOL), in which the full score is 60 points, followed by 51–60 points indicating well, 41–50 points indicating good, 31–40 points indicating fair, 21–30 points indicating poor, and < 20 points indicating extremely poor.

2.4. Statistical analysis

SPSS 24.0 was used for data analysis; measurement data were expressed as mean ± standard deviation, and t-test was performed; count data were expressed as percentages, and chi-squared test (χ^2) test was performed. $P < 0.05$ was considered statistically significant.

3. Results

3.1. Comparison of the quality of life between the two groups of patients

Before the intervention, the QOL item function score and symptom function score of patients in the observation group were 56.19 ± 10.58 points and 62.58 ± 10.95 points, respectively, whereas those in the control group were 55.73 ± 11.03 points and 62.15 ± 11.12 points, respectively; there were no statistically significant differences in comparison (t = 0.165, $P = 0.870$; t = 0.151, $P = 0.881$). After the intervention, the item function score and symptom function score of the observation group were 69.01 ± 11.26 points and 76.17 ± 11.92 points, respectively, both of which were higher than those of the control group (62.87 ± 10.59 points and 69.27 ± 12.01 points), and the difference was statistically significant (t = 2.176, $P = 0.034$; t = 2.233, $P = 0.029$).

3.2. Comparison of short-term curative effect between the two groups of patients

In the control group, 1 case (3.33%) had complete remission, 16 cases (53.33%) had partial remission, 8 cases (26.67%) had stable disease, and 5 cases (13.33%) had progressive disease; the total curative rate was 56.67%. In the observation group, 3 cases (10.00%) had complete remission, 23 cases (76.67%) had partial remission, 2 cases (6.67%) had stable disease, and 2 cases (6.67%) had disease progression; the total curative rate was 86.67%. The total curative rate of the observation group was significantly higher than that of the control group ($\chi^2 = 6.648$, $P = 0.010$).

3.3. Comparison of sputum conversion rate between the two groups of patients

After treatment, the sputum examination turned negative in 26 cases (86.7%) in the observation group and 19 cases (63.3%) in the control group; the difference was statistically significant ($P < 0.05$).

4. Discussion

With the development of society, the level of medical care and living standards continue to improve, and the demands for nursing care are increasing. The traditional nursing model can no longer meet the demands of patients due to untimely communication of medical and nursing information and the fact that communication with patients is not open and timely [5]. Integrated medical and nursing care is a new type of nursing mode that is patient centered. Physicians and nursing staff communicate with each other in a timely manner to objectively assess patients' condition in detail and maximize patient's care through a collaborative and cooperative approach [6,7]. Tuberculosis and lung cancer are both difficult to treat and have a long treatment course, thereby requiring high clinical care [8,9]. Most of these patients have low self-immunity and have a certain fear of the disease. In the integrated medical and nursing care, the medical staff will explain the disease-related knowledge to patients from a professional perspective, improve their awareness of the disease, and eliminate their fear. Patients are also given appropriate psychological counseling, so that they can maintain a good mental state while receiving anti-tuberculosis treatment and chemotherapy and build confidence in overcoming the disease [10-15]. Medical care integration is an advanced nursing concept at present. It focuses on the combination of clinical and nursing operations and comprehensively considers the needs of patients to improve the quality of care, so as to facilitate rapid recovery. Improvements in nursing practice are accompanied by advances in nursing research. However, due to business in the work schedule of nurses and the lack of understanding of the integration of medical care, many scientific research results have not been applied or even understood. Practicing medical care integration allows for more efficient use of medical and nursing resources, improves nursing practice by introducing evidence from nursing research, updates nursing knowledge, changes traditional nursing concepts and methods, and promotes nursing research.

With the continuous adjustment of the nursing model, the integrated medical and nursing care model has been applied in clinical nursing, especially in certain diseases that require higher nursing care. The treatment of pulmonary tuberculosis combined with lung cancer is difficult and harmful to the patients themselves, thereby requiring high clinical care. The nursing staff can carry out a series of nursing work, such as psychological care, basic care, life care, and health education. Effective communication between doctors and nursing staff enables both parties to be aware of the patients' current situation at the same time, which would not only benefit in the effort of rescuing and treating patients in a timely manner when problems occur, but also improve the relevance of the nursing staff's work. The establishment of clinical diagnosis and treatment pathways can help patients achieve continuous and targeted nursing care, which is important for improving treatment outcomes and patients' quality of life.

In conclusion, for patients with pulmonary tuberculosis and lung cancer, the application of integrated medical and nursing care can help consolidate the treatment effect and improve the quality of life of patients;

thus, its application is worth promoting.

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Disclosure statement

The authors declare no conflict of interest.

References

[1] Du H, 2022, Application of Integrated Medical Care Model Combined with Systematic Respiratory Rehabilitation Training in Patients with Moderate to Severe Chronic Obstructive Pulmonary Disease. Contemporary Nurses, 29(08): 73–76.

[2] Gong S, 2022, The Effect of Integrated Medical Care Combined with Nutritional Nursing Intervention on the Nutritional Status and Quality of Life of Hospitalized Patients with Hematological Malignancies. China Medical Herald, 19(13): 185–189.

[3] Li W, Zheng L, Cai C, et al., 2021, Research on Risk Factors of Pulmonary Tuberculosis Combined with Lung Cancer and Analysis of Clinical Characteristics. The 33rd National Academic Conference of the Chinese Anti-Tuberculosis Association and the China Anti-Tuberculosis Science and Technology Awards Conference Papers Collection, 514–515.

[4] Wang L, Li Q, Ren L, et al., 2021, Analysis of Curative Effect and Prognosis of Surgical Treatment for Patients with Pulmonary Tuberculosis and Lung Cancer. Modern Oncology, 29(13): 2282–2287.

[5] Xin M, Yang H, 2020, Etiological Analysis and Nursing Strategies of Nosocomial Infection in Patients with Pulmonary Tuberculosis and Lung Cancer. Chinese Cancer Clinic and Rehabilitation, 27(10): 1265–1267.

[6] Tang R, 2020, A Retrospective Study on the Effect of Radiotherapy and Prognosis Analysis on Patients with Pulmonary Tuberculosis and Lung Cancer, thesis, Capital University of Economics and Business.

[7] Wang L, Wang Y, 2020, Effects of Psychological Intervention on Negative Emotions and Quality of Life in Patients with Tuberculosis and Lung Cancer. Cancer Basics and Clinics, 33(02): 129–131.

[8] Xu B, Li Y, Liu G, et al., 2020, Comparison of CT Diagnosis and Imaging Features in Patients with Pulmonary Tuberculosis and Pulmonary Tuberculosis Complicated with Lung Cancer. Chinese Journal of Clinicians, 48(02): 184–186.

[9] Han W, Li H, 2019, Discussion on the Characteristics of Immune Inflammatory Response and Coagulation Indicators in Patients with Pulmonary Tuberculosis and Lung Cancer. Chinese Journal of Cancer Prevention and Treatment, 26(S1): 50 + 52.

[10] Wei L, 2019, Research on the Diagnosis of Pulmonary Tuberculosis Complicated with Lung Cancer and the Factors Affecting the Prognosis of Surgical Treatment. Chinese Medicine Guide, 17(21): 110–111.

[11] Li X, 2019, Clinical Analysis of Pulmonary Tuberculosis Combined with Lung Cancer. Chinese Medical Association Tuberculosis Branch 2019 National Tuberculosis Academic Conference Papers Collection, 512.

[12] Yuan C, Jiao W, Li Y, 2019, Clinical Features of Pulmonary Tuberculosis Complicated with Lung Cancer and the Application Value of Imaging Examination in Its Diagnosis. Electronic Journal of Clinical Medicine Literature, 6(07): 118.

[13] Hai J, 2018, Risk Factors and Prognosis of Pulmonary Tuberculosis Combined with Lung Cancer. Wisdom Health, 4(07): 57–59.

[14] Wang C, Cai Z, Zhu L, et al., 2018, Analysis of Immune Inflammatory Response and Coagulation Indicators in Patients with Pulmonary Tuberculosis and Lung Cancer. Hebei Medicine, 40(03): 380–383 + 388.

[15] Su G, Chen Z, Cai Q, 2017, CT Manifestations and Clinical Analysis of Pulmonary Tuberculosis Combined with Lung Cancer. Chinese Journal of Integrated Traditional Chinese and Western Medicine Imaging, 15(05): 585–587.