Effects of TCM Nursing Based on Syndrome Differentiation on Pulmonary Function and Quality of Life in Patients with Acute Exacerbation of COPD

Xiaolan FANG, Ran MO, Yuanhui JIANG, Yaonan DU *

Nanchong Chinese Medicine Hospital, Nanchong 637000, China

Abstract 〔**Objectives**〕 To investigate the effects of TCM nursing based on syndrome differentiation on pulmonary function and quality of life in patients with acute exacerbation of chronic obstructive pulmonary disease (AECOPD). 〔**Methods**〕 A total of 92 patients with AECOPD who came to Nanchong Chinese Medicine Hospital from March 2022 to February 2023 were selected for the study, and the intervention group (TCM nursing based on syndrome differentiation, 46 cases) and the conventional group (basic nursing, 46 cases) were selected for the study, and the pulmonary function and quality of life of the two groups were compared. 〔**Results**〕 Before nursing, there was no significant difference in levels of forced vital capacity (FVC), forced expiratory volume in one second (FEV1), and percentage of forced expiratory volume in one second to forced vital capacity (FEV1/FVC) between the intervention group and conventional group ($P > 0.05$). After 3 months of nursing, the levels of FVC, FEV1 and FEV1/FVC in the intervention group were higher than those in the conventional group ($P < 0.05$). Before nursing, there was no significant difference in the scores of health, emotion and social functions between the two groups ($P > 0.05$). At three months of nursing, the scores of health, emotion, and social functions in the intervention group were higher than those in the conventional group ($P < 0.05$). 〔**Conclusions**〕 The implementation of TCM nursing based on syndrome differentiation in patients with AECOPD can effectively improve the pulmonary function and quality of life of patients, and has significant clinical implementation value.

Key words Chronic obstructive pulmonary disease (COPD), TCM nursing based on syndrome differentiation, Pulmonary function, Quality of life

1　Introduction

Chronic obstructive pulmonary disease (COPD) is a common chronic disease of the respiratory system, with persistent decline in pulmonary function as the main clinical feature, and chronic cough, sputum production, and dyspnea as the main clinical manifestations, and COPD has a serious impact on the quality of life and health of patients[1]. Nursing interventions implemented in patients with AECOPD have important implementation value in helping patients avoid relevant risk factors and improve patients' pulmonary function and quality of life. In this study, we investigated the effects of TCM nursing based on syndrome differentiation on improving pulmonary function and quality of life of patients with AECOPD.

2　Data and methods

2.1　Clinical data We selected 92 patients who attended Nanchong Chinese Medicine Hospital from March 2022 to February 2023 to treat the acute exacerbation of COPD (AECOPD).

2.1.1　Inclusion criteria: (ⅰ) Patients with a clear diagnosis of AECOPD based on the patient's medical history, signs, and clinical manifestations, combined with pulmonary function examination; (ⅱ) patients have been informed of the study and intervention methods, obtain patient consent, and voluntarily cooperate with this study and intervention.

2.1.2　Exclusion criteria: (ⅰ) Patients with language communication disorders, cognitive dysfunctions, *etc.* who cannot cooperate with this study and intervention; (ⅱ) patients who cannot be independently surveyed on the scales required for this study.

　　The patients were divided into intervention group (46 cases) and conventional group (46 cases) by random group table method, and there was no significant difference in the male/female, age, course of disease and education level between the intervention group and the conventional group ($P > 0.05$), as shown in Table 1.

2.2　Methods The patients in the conventional group received basic care: (ⅰ) Health explanation: we explained disease-related knowledge to patients, informed patients of the mechanism of disease occurrence, active control and possible effects, to improve their mastery of health knowledge. (ⅱ) Psychological intervention: Under the torment of long-term disease, patients are prone to anxiety, depression and other bad emotions, so we actively communicated with patients, evaluated their psychological state, and counseled patients who may have bad emotions by encouragement and comfort.

Table 1 Clinical data ($n = 46$)

Group	Male/female // cases	Age // years old	Course of disease // years	Educational level // cases		
				Junior middle school and below	Senior middle school or vocational high school	College and above
Intervention	29/17	63.5 ± 5.6	7.2 ± 1.6	37	7	2
Conventional	26/20	62.9 ± 6.8	7.3 ± 1.9	35	8	3
χ^2/t	0.406 9	0.462 0	0.273 0	0.322 2		
P	0.523 6	0.645 2	0.785 4	0.851 2		

The patients in the intervention group received nursing based on TCM dialectical theory: (i) Patients with spleen and lung qi deficiency type were encouraged to take Chinese medicines such as Lilii Bulbus (Baihe), Dioscoreae Rhizoma (Shanyao), and Coicis Semen, and chicken that nourish the spleen and benefit the lungs. Patients were suggested to avoid fatigue, pay attention to rest, and exercise moderately to strengthen their immune function. (ii) We instructed patients with lung and kidney qi and yin deficiency to eat walnuts, wolfberries, black sesame, fungus, laurel balls, pears and other foods that nourish qi and yin. Besides, we instructed patients to strengthen warmth, pay attention to rest, and guided then to perform lip contraction exercises and balloon blowing exercises to exercise their pulmonary function. For patients with liver and lung depression, we instructed them to eat carrot porridge to obtain the effect of dispersing qi and removing depressing. Furthermore, we strengthened the psychological intervention of patients to maintain a positive and optimistic attitude.

2.3 Observation indicators

2.3.1 Pulmonary function. Before the nursing intervention and at 3 months of the nursing intervention, the pulmonary function detector was used to detect and compare the forced vital capacity (FVC), forced expiratory volume in one second (FEV1), and percentage of forced expiratory volume in one second to forced vital capacity (FEV1/FVC) in the two groups.

2.3.2 Quality of life. Before the nursing intervention and at 3 months of the nursing intervention, we used the medical outcomes study 36-item short from health survey (SF-36) to evaluate the three dimensional contents of health, emotion and social functions of the two groups, each item had 0 – 30 points, and the higher the score, the higher the quality of life[2].

2.4 Statistical methods

In this study, we used the SPSS 24.0 statistical software package (SPSS, USA) to obtain data analysis. Age, course of disease, pulmonary function, quality of life score were expressed in ($\bar{x} \pm s$), and verified by t test; Gender and education level were tested by χ^2. The test level $\alpha = 0.05$.

3 Results and analysis

3.1 Comparison of pulmonary function

Before nursing, the levels of FVC, FEV1 and FEV1/FVC in the intervention group and the conventional group were not significantly different ($P > 0.05$). After three months of nursing, the levels of FVC, FEV1 and FEV1/FVC in the intervention group were higher than those in the conventional group ($P < 0.05$), as shown in Table 2.

Table 2 Comparison of pulmonary function ($\bar{x} \pm s$, $n = 46$)

Group	FVC // L		FEV1 // L		FEV1/FVC // %	
	Before nursing	After 3 months of nursing	Before nursing	After 3 months of nursing	Before nursing	After 3 months of nursing
Intervention	2.22 ± 0.44	2.45 ± 0.36	1.50 ± 0.25	1.70 ± 0.32	70.2 ± 4.9	77.1 ± 5.3
Conventional	2.23 ± 0.37	2.21 ± 0.32	1.49 ± 0.33	1.51 ± 0.38	70.5 ± 5.6	71.1 ± 7.2
t	0.118 0	3.379 5	0.163 8	2.593 9	0.273 4	4.551 7
P	0.906 3	0.001 1	0.870 2	0.011 1	0.785 1	0.000 0

3.2 Comparison of quality of life

Before nursing, there was no significant difference in health, emotion and social function scores between the two groups ($P > 0.05$). After 3 months of nursing, the scores of health condition, emotional and social functions in the intervention group were higher than those in the conventional group ($P < 0.05$), as shown in Table 3.

Table 3 Comparison of score of quality of life (points, $\bar{x} \pm s$, $n = 46$)

Group	Health condition		Emotion		Social function	
	Before nursing	After 3 months of nursing	Before nursing	After 3 months of nursing	Before nursing	After 3 months of nursing
Intervention	16.3 ± 2.3	18.9 ± 2.5	15.9 ± 3.5	20.4 ± 2.8	18.4 ± 3.5	20.1 ± 2.7
Conventional	16.0 ± 2.5	16.3 ± 2.8	15.7 ± 3.8	15.9 ± 3.6	18.6 ± 3.8	18.4 ± 3.1
t	0.599 0	4.697 8	0.262 6	6.692 1	0.262 6	2.804 7
P	0.550 7	0.000 0	0.793 5	0.000 0	0.793 5	0.006 2

4 Discussion

COPD primarily affects the respiratory system, causing chronic and progressive decreased pulmonary function, often accompanied by fatigue and decreased activity tolerance, which seriously affects daily life[4]. COPD is a chronic lung disease with incomplete pulmonary function, mainly due to continuous decline of pulmonary

function, pulmonary ventilation and pulmonary exchange dysfunction. COPD patients are mainly manifested by long-term chronic cough and sputum production, often with acute exacerbations after cold and lung infection, it is a common respiratory disease affecting the health and quality of life of middle-aged and elderly people. Studies have pointed out that COPD patients need to be nursed for a long time and effectively to avoid affecting the risk factors of pulmonary function, and to strengthen pulmonary function exercise to improve their pulmonary function and quality of life[3]. Patients lack health expertise and are difficult to obtain significant self-care effects, and clinical nursing guidance is particularly important to help improve patients' pulmonary function and improve patients' quality of life.

The syndrome differentiation of TCM theory believes that COPD occurs due to the deficiency of the three organs of the lungs, spleen and kidneys, mainly lung and kidney qi deficiency, lung and spleen qi deficiency, lung and kidney qi yin, and TCM syndrome differentiation takes qi replenishment and yin as the main intervention method. This study implemented nursing intervention based on the syndrome differentiation of TCM, which significantly improved the pulmonary function and quality of life of patients compared with basic nursing intervention ($P < 0.05$). TCM nursing based on syndrome differentiation dialectically implements dietary guidance, life intervention and emotions according to the type of patient's disease, has strong nursing pertinence, and can strengthen the improvement of patients' pulmonary function. The improvement of pulmonary function can effectively alleviate the clinical symptoms of patients, reduce the acute attack rate of patients, and then help improve the quality of life of patients. Based on syndrome differentiation of TCM, some scholars have implemen-

ted nursing interventions for patients with AECOPD, which is also effective in improving patients' pulmonary function and improving patients' quality of life[5-6].

In summary, TCM nursing based on syndrome differentiation in AECOPD patients can effectively improve the pulmonary function and quality of life of patients, and has significant clinical implementation value.

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