Science Development
2023; 4(4): 71-73
http://www.sciencepublishinggroup.com/j/scidev
doi: 10.11648/j.scidev.20230404.12
ISSN: 2994-7154 (Online)

A Preliminary Study of Clinical Pharmacists' Participation in Drug Therapy Management of COPD Patients

Li Huan[1], Huang KunYu[2, *]

[1]Department of Pharmacy, The First Affiliated Hospital of Jinan University, Guangzhou, China

[2]Department of Pharmacy, Shenshan Central Hospital, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Shantou, China

Email address:
fancyxl@163.com (Li Huan), 544631944@qq.com (Huang KunYu)

[*]Corresponding author

To cite this article:
Li Huan, Huang KunYu. (2023). A Preliminary Study of Clinical Pharmacists' Participation in Drug Therapy Management of COPD Patients. *Science Development*, *4*(4), 71-73. https://doi.org/10.11648/j.scidev.20230404.12

Received: November 23, 2023; **Accepted**: December 7, 2023; **Published**: December 18, 2023

Abstract: Objective: To explore the management model of clinical pharmacists' participation in chronic obstructive pulmonary disease (COPD) patients' drug treatment, so as to provide reference for pharmacists' participation in chronic disease management. Methods: 30 patients with COPD admitted to the department of respiratory medicine of the first affiliated hospital of jinan university who met the inclusion criteria were selected. The patients were followed up after safe medication intervention management and stable discharge with the participation of clinical pharmacists and cooperation with doctors. mMRC, CAT, MNA and SGRQ scores before and after the intervention were compared. Results: After the intervention in this model, the results before intervention and after the first and second follow-up showed that the mMRC score, CAT score and SGRQ score were all decreased, while the MNA score was increased, the difference was statistically significant ($p<0.01$). Conclusion: the participation of clinical pharmacists in COPD management can improve the respiratory symptoms of patients, reduce the risk of acute exacerbation, and improve the quality of life of the patients under management to some extent.

Keywords: COPD, Clinical Pharmacist, Management

1. Introduction

Chronic obstructive pulmonary disease, referred to as COPD, is a common respiratory chronic disease characterized by chronic and repeated attacks. With the intensification of social and environmental pollution and the deepening of aging, its incidence and harm are gradually increasing [1-3]. In foreign countries, chronic disease management of COPD has been basically perfect, and chronic disease management has been summarized into four aspects: hospital management, community management, self-management, primary health care and nursing [4]. At present, domestic COPD management models mainly include chronic disease management clinical pathway model, community chronic disease health management model, chronic disease self-management model, etc., but the above models are still immature [5-7]. Therefore, it is necessary to explore and establish the management mode of COPD in line with the current situation of our country.

2. Data Source

2.1. Clinical Data

Thirty patients with COPD in the respiratory department of our hospital from July to September 2018 were selected as study subjects, including 28 males and 2 females, aged 49~85 years, with an average age of (71.2±9.1) years, and a disease course of 1~15 years, with an average age of (3.7±3.6) years. 25 people with a history of smoking accounted for 83.3%, and 8 people who had not quit smoking accounted for 32.0%. All patients were admitted in the acute stage and discharged after treatment improved.

2.2. Research Object

Inclusion criteria: (1) All patients were diagnosed in accordance with the 2021 revised guidelines for the diagnosis and treatment of chronic obstructive pulmonary disease of the Chinese Society of Respiratory Medicine; (2) After

treatment, the symptoms are effectively controlled; (3) Have certain communication and memory ability; (4) Family members live with the patient and know the progress of the patient's disease; (5) Agree to cooperate and accept guidance. Exclusion criteria: (1) People who are unconscious or have communication difficulties; (2) Patients with cancer; (3) Unwillingness to cooperate and accept mentors.

2.3. Comprehensive Evaluation of Indicators

Comprehensive evaluation of all indicators included patients' basic information, smoking history, dust exposure history, time of first onset of symptoms, average number of acute exacerbations per year, mMRC score, CAT score, GOLD score, MNA score, and SGRQ score, pulmonary function indicators and groups before and after admission, history of antibiotic use and inhalation preparations, and results. The use of inhalants and the adverse reactions of inhalants were evaluated.

3. Intervention Management

3.1. Management Guidance Before Discharge

Management Guidance before discharge After completing the comprehensive assessment before intervention management, management guidance should be given according to the individual differences of patients, including (1) personal daily management (2) guidance on the use of inhaled preparations (3) testing and guiding the drug use of patients together with their families.

3.2. Follow-up Management After Discharge

Follow-up management after discharge (1) Personnel determination: clinical pharmacists with rich experience, solid specialized knowledge, skilled communication skills and strong language expression ability are selected for follow-up;(2) Formulate the contents of follow-up visits: According to the characteristics of COPD diseases, relevant follow-up visits were formulated, and medication compliance was evaluated according to the Morisky compliance Scale, and patients were asked whether there were adverse reactions after medication.

3.3. Follow-up Implementation

Follow-up Visit The patient will have a telephone follow-up visit within one month after discharge. Clinical pharmacists will not only record and score the patient's condition, but also answer and explain the questions raised by the patient.

4. Statistical Methods

SPSS 22.0 was used for statistical analysis of the study data, and paired design T-test was used to analyze the relationship between the indicators before and after the intervention. The measurement data were expressed as x±s, and P<0.01 was considered statistically significant.

5. Results

The results of two follow-up visits before and after intervention showed that mMRC, CAT and SGRQ scores were decreased, while MNA was increased, with high statistical significance (P<0.01). The specific values are shown in Table 1 and Table 2.

Table 1. *Comparison of indicators before intervention and at the first follow-up.*

	mMRC	CAT	MNA	SGRQ		
				Respiratory symptom	capacity for action	Disease effect
pre-intervention	2.2±1.0	14.4±5.5	23.2±3.4	53.21±3.2	50.56±3.3	42.75±3.1
first follow-up	1.9±1.0	11.4±3.9	23.8±3.3	29.64±2.3	43.19±2.8	36.23±2.2
t	2.763	4.781	-2.641	9.462	4.414	4.015
P	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table 2. *Comparison of indicators before intervention and the second follow-up.*

	mMRC	CAT	MNA	SGRQ		
				Respiratory symptom	capacity for action	Disease effect
pre-intervention	2.2±1.0	14.4±5.5	23.2±3.4	53.21±3.2	50.56±3.3	42.75±3.1
second follow-up	2.0±1.0	11.3±3.4	24.0±2.9	31.19±2.6	42.63±2.9	37.25±2.4
t	1.366	3.699	-3.302	6.953	4.017	2.867
P	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

6. Discussion

The clinical manifestations of COPD are progressive dyspnea, cough and sputum, in which dyspnea is one of the main symptoms. mMRC is divided into five grades, the higher the score, the higher the degree of dyspnea. After intervention and management, the score decreased and the degree of dyspnea was reduced [8-10].

The CAT scale contains 8 items in total, and the score is significantly correlated with the severity of the disease, and the score change of more than 2 points has clinical significance [11]. Before and after the intervention in this study, the CAT score decreased by more than 2 points, and the quality of life improved.

MNA is used by most international medical institutions to investigate the nutritional status of the elderly. The contents of the MNA questionnaire are divided into two items:

nutrition and general status. The scoring criteria are: MNA≥24 is normal nutrition, 17≤MNA≤23.5 is potential malnutrition, and MNA<17 is malnutrition. The results of this study showed that the proportion of malnutrition and potential malnutrition decreased after intervention, and the proportion of good nutritional status increased. The nutritional status of patients improved after intervention.

SGRQ assesses patients' quality of life through the three functional areas of symptoms, daily activity ability and disease impact, so as to comprehensively assess the impact of disease on patients' physical, psychological and social activities [12, 13]. The patient score was 100 times the ratio of the positive score of each functional area to the preset score, and higher scores predicted worse respiratory status. The statistical results before and after the intervention showed that the scores of the three functional areas had decreased, and the respiratory status of the patients had improved.

The lack of patient management awareness is also a major obstacle to effective management. Most patients diagnosed with COPD for the first time are classified as severe or extremely severe, and the spatial threshold that can be raised is small, coupled with the general poor compliance, which further increases the difficulty of effective management [14, 15]. The results of this study indicate that clinical pharmacists' participation in management is beneficial to improving respiratory symptoms and quality of life in COPD patients. However, since the subjects included in this study were mostly GOLD3 and 4 patients, the improvement space was narrow, the sample size was reduced and the management time was short, so the management effect was affected.

7. Conclusion

At present, COPD is not included in the category of chronic disease management in China, and its management model is still in the stage of exploration. Based on the recent literature on the exploration of COPD management mode, it can be found that evaluating the long-term medication safety of chronic patients is an important entry point to exert the professional role of pharmacists, and it is very important to combine hospital management, community management and patient self-management.

ORCID

Li Huan: https://orcid.org/0009-0000-2826-1817

Conflicts of Interest

The authors declare no conflict of interest.

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