DOI: 10.53469/jcmp.2025.07(04).21

# Research Progress of TCM Treatment for Acute Exacerbation of COPD

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**Abstract:** ***Acute exacerbation of COPD is the acute pathogenesis of COPD, and it is also an important factor leading to the deterioration of pulmonary function, the increase in hospitalization rate, and mortality in COPD patients. By reviewing relevant literature and reviewing the research progress of TCM treatment of COPD acute exacerbation, this paper provides new ideas and diagnosis and treatment methods for clinical treatment of COPD acute exacerbation.***

**Keywords:** COPD acute exacerbation stage, TCM (traditional Chinese medicine) therapy, Research progress, Summarize**.**

## 1. Introduction

Chronic obstructive pulmonary disease (COPD) is a common respiratory disease with persistent airflow limitation as its main characteristic, The main clinical symptoms were chronic respiratory distress, chest pain, wheezing episodes, phlegm, and increased airway secretions [1, 2]. Patients with COPD may experience acute worsening of respiratory symptoms, including dyspnea, wheezing, chest tightness, productive cough, and increased sputum production. This clinical deterioration, medically termed Acute Exacerbation of COPD (AECOPD), is characterized by progressive decline in pulmonary function and represents a distinct pathophysiological state. If left untreated, the condition may progress to hypoxemia, respiratory failure, or other life-threatening complications. To optimize patient outcomes, clinicians should implement evidence-based multidisciplinary interventions to alleviate symptoms and accelerate recovery. The primary therapeutic objective involves dual approaches: symptomatic relief of respiratory obstruction, combined with pathogen-targeted anti-infective therapy and effective modulation of the inflammatory response. Implementation of this comprehensive treatment regimen demonstrates significant improvement in patients' pathological conditions, with subsequent normalization of pulmonary function parameters [3, 4]. At present, Western medicine generally adopts controlled oxygen therapy, inhaled glucocorticoid anti-inflammatory, β2 receptor agonist bronchial dilation, expectorant, respiratory muscle rehabilitation, and other treatment methods, but the overall efficacy is not very ideal, long-term application will produce drug side effects and drug resistance, some patients are prone to acute attacks under external inductions, which affect patients' health and quality of life over and over again [5, 6]. Relevant data show that [7], In the adult population aged 20 years and above, the incidence of chronic obstructive pulmonary disease is 8.6%. Of particular note is the significant increase in the proportion of people over the age of 40, reaching 13.7 percent. According to this calculation, the total number of patients in the country is about 100 million. These data fully reflect that the epidemic situation of COPD in China is still serious, and disease prevention and control face major challenges. According to the burden of disease statistics released by the World Health Organization (WHO), the prevalence trend of chronic obstructive pulmonary disease (COPD) continues to increase due to the continuous decline in ecological environment quality, high consumption of tobacco products, and the acceleration of the aging process of the global population structure. Epidemiological prediction models show that by 2060, the prevalence of chronic obstructive pulmonary disease (COPD) will continue to increase. The prediction that the number of deaths from the disease and its complications will exceed 5.4 million highlights the challenges facing the prevention and control of COPD [7]. In the clinical management of chronic obstructive pulmonary disease (COPD), early preventive measures, timely diagnosis, and the implementation of standardized treatment plans are of critical importance. These strategies play a key role in improving patient prognosis and reducing mortality rates.

## 2. Understanding of AECOPD in Traditional Chinese Medicine

### 2.1 Pathogeny and Pathogenesis of Disease

In Traditional Chinese Medicine (TCM), there is no precisely corresponding disease nomenclature for chronic obstructive pulmonary disease (COPD). However, based on its clinical manifestations, COPD can be classified under the TCM disease categories of "pulmonary distension", "asthmatic disorder", "cough", "fluid retention", and "phlegm-fluid syndrome". among which the characteristics of "lung distension" are particularly consistent with it. Through reading relevant ancient books, "Huangdi Neijing" first recorded the name of lung distension, pointing out that the disease is mainly due to the lung, the lung, spleen, kidney three viscera are most closely related, such as "Lingshu · Distension" recorded: "lung distension, empty and full, panting and coughing", revealing the basic characteristics of the disease. The lungs are the ceiling and occupy the upper jiao, with the function of spreading and suppressing, and if they fail to do so, there will be symptoms such as cough, panting, phlegm, and drinking, while the kidney is the congenital root. "The lung is the master of Qi, and the kidney is the root of Qi", and the kidney participates in regulating breathing and maintaining the balance and circulation of qi through absorbing Qigong. In addition, "kidney water viscera, the main body fluid", so kidney qi deficiency, and kidney Yang deficiency will lead to warm kidneys, gasified water,

and liquid function imbalance, causing water metabolism disorders in the body, disease, and heart and lung are easy to cause asthma syndrome, lung distension [8]. Lung distension disease because of external feelings of six evil qi, abnormal fluctuation of mood, diet, overwork, old age, and so on; This multi-factor pathogenic feature reflects the overall understanding of the cause of the disease in traditional Chinese medicine, the pathogenesis is the syndrome of the deficiency of the lungs, spleen and kidney, the deficiency of the standard refers to the phlegm and blood stasis interlocking, some ancient medical literature recorded about the etiology and pathogenesis of lung distention. Taking "On the Source of All Diseases · Cough against short Qi Hou" as an example, it points out: "The lung is deficient, qi is not enough, and it is complicated by external evil..... Therefore, the cough reverses the short breath." This discussion reveals the mechanism of lung qi deficiency and the invasion of external evil jointly leading to the occurrence of diseases. In addition, the Qing Dynasty physician Chen Xiuyuan found in clinical observation: "There is external evil internal drink, filling the lung and distention..... It is known that the wind and fire with water and drink in the lung ", further elucidated the pathological process of external evil and internal drink interlocking, obstructing the lung and causing lung distension. These classical arguments all show that the invasion of external evil plays an important role in the pathogenesis of lung distension. It can be seen that the main cause of the disease is lung qi deficiency, Xuanfa Su down dysfunction, water, and liquid metabolism disorders, and it is involved for a long time, and eventually, sputum turbidity, blood stasis, and water and drink are mixed. Often because of the invasion of external evil, the lung qi is obstructed, so the symptoms are aggravated, or because of the disease for a long time, the course of the disease is prolonged, resulting in the body Yin and Yang deficiency, positive and evil, resulting in aggravated illness. To sum up, the core pathogenesis of acute aggravation of this disease lies in the lack of healthy qi in the body, and the exogenous evil qi is an important inducing factor.

### 2.2 Differentiation and Classification of AECOPD

Combined with individual differences of AECOPD patients, dialectical analysis was made according to different etiology and pathogenesis, and the acute exacerbation of COPD was also divided into different TCM syndrome types. Shi Lili et al. took 80 cases of AECOPD patients as research objects and statistically analyzed relevant TCM syndrome characteristics, finding that the TCM syndrome distribution of AECOPD patients had certain regularity, among which the syndrome of phlegm-heat obstructing lung, the syndrome of phlegm-dampness accumulating lung and the syndrome of phlegm-stasis interformation were more frequent. The distribution characteristics of this syndrome type suggest that phlegm turbidity, blood stasis, and heat are the main causes of the acute onset of the disease [9], Relevant literature reports also support the above findings, which are consistent with the conclusions of this study. Xu Dan et al. [10] conducted a study on the distribution of syndrome types in 1127 TCM patients in the acute exacerbation stage of COPD in Urumqi. According to the statistical results, among various syndrome types, the composition ratio of phlegm turpitude obstructing lung, phlegm stasis interjunction, and phlegm-heat accumulation of the lung reached more than 85%. Specifically, the syndrome of phlegm turbidity obstructing the lung accounted for the highest proportion, reaching 44.54%; The second was the syndrome of phlegm and blood stasis interlocking, accounting for 31.14%; The syndrome of phlegm-heat accumulation of the lung was the third with 9.58% [10].

## 3. TCM Therapy

### 3.1 Traditional Chinese Medicine Decoction

Under the guidance of the holistic concept and dialectical management concept, TCM decoction regulates the dynamic balance of Yin and Yang, promotes the smooth circulation of Qi and blood, and improves the physiological function of zang-fu organs through the compatibility and decoctions of drugs, to achieve the effect of preventing and treating diseases. In recent years, traditional Chinese medicine decoction has been widely used in the treatment of a variety of diseases due to its flexible formulation and wide indications. When Wan Tao used Sangbaipi Decoction to treat patients with phlegm heat obstructing lung during acute exacerbation of COPD (AECOPD), he found that the combined application of Sangbaipi Decoction based on conventional Western medicine to remove phlegm, relieve asthma and anti-infection could improve the respiratory function of patients. Optimize the parameters of arterial blood oxygen analysis and reduce bronchial inflammation [11]. Zhang Na used Pingchuan Zhike decoction based on conventional Western medicine treatment and found that after treatment, FEV1, FVC, FEV1/FVC, and PEF in the observation group were higher than those in the control group (conventional Western medicine treatment), which could effectively reduce respiratory resistance, enhance lung ventilation function and improve lung function [12]. Liu Jialiang used Zhenwu Decoction combined with Wuling SAN (plus or less) to treat patients with yang-deficiency hydro genericity in acute COPD exacerbation (AECOPD) and found that TCM decoction can promote respiratory secretion discharge, effectively reduce cough, shortness of breath and other clinical manifestations, and optimize lung ventilation parameters and increase blood oxygen saturation [13], It is proved that this treatment scheme is of practical significance in a clinic.

### 3.2 Chinese Patent Medicine

PCM is a kind of medicine made based on traditional Chinese medicine. It regulates human function mainly through the synergistic action of multiple components and is often used for overall conditioning and disease prevention. It has relatively small side effects and is suitable for chronic diseases and sub-health conditions. Liu Jiachang et al. used the random number table method to divide the patients discharged after improvement in this hospitalization into the control group and the experimental group. The patients in both groups regularly inhaled LABA+ICS after discharge. The experimental group, based on the control group, was combined with the compound anti-influenza Chinese medicine preparation before hospitalization when symptoms such as sore throat nasal congestion, and runny nose first appeared. To a certain extent, the number of acute exacerbations, the degree of inflammation, and the number of readmissions in COPD patients were reduced [14]. The

research results of Ren Junqing and other scholars showed that the combined application of the Suhuang Zhike capsule and conventional Western medicine therapy could significantly reduce the concentration of inflammatory factors in the serum of patients, and effectively improve lung ventilation function and blood gas indexes. Compared with the control group treated only with Western medicine, this combination treatment regimen showed great advantages [15].

### 3.3 Chinese Medicine Injection

Liu Xinyan et al. found that Tanreqing injection could improve patients' clinical symptoms and improve their quality of life based on symptomatic Western medicine treatment [16]. Zheng Shenghua et al. intervened with conventional Western medicine treatment combined with Danhong injection in a clinical study. The results of the study showed that compared with the Western medicine control group alone, the combination group showed significant advantages on several measures, including increased alveolar ventilation capacity, improved lung function parameters, and significant relief of inflammatory response and coagulation status [17]. Su Xiujian et al. also confirmed through clinical trials that Chuankezhi injection can better improve the inflammatory response and blood gas analysis indicators of patients compared with conventional Western medicine treatment alone, and shorten the treatment and hospital stay of patients [18].

### 3.4 Acupuncture Therapy

As one of the important treatment methods of traditional Chinese medicine, acupuncture is famous for its safety and green side effects. By dredging meridians, regulating the movement of qi and blood, balancing the relationship between Yin and Yang, and coordinating the functions of zang-fu organs, the therapy finally achieves the clinical effect of preventing and treating diseases [19]. Zhang Qiang randomly divided the patients into two groups to receive Western medicine treatment, the observation group plus acupuncture and moxibustion combined with Sanzi Yangqin Tang added flavor treatment, the study showed that the observation group with soil cultivation gold acupuncture and moxibustion can effectively improve lung function indicators [20]. Through clinical studies, Wu Yiyuan et al. found that the combination of hyper asthmatic-regulating acupuncture therapy with acupoint embedding could improve the clinical efficacy of patients with acute exacerbation of chronic obstructive pulmonary disease treated with non-invasive ventilation, improve their symptoms and lung function, promote their recovery of health, and reduce complications [21].

## 4. Other TCM Characteristic Therapies

In addition to the above conventional Chinese medicine therapy, Chinese medicine also has several characteristic treatment techniques, such as ear point pressure bean, point application, point injection therapy, Baduanjin, etc., to improve the main clinical symptoms of patients have significant effects. At the same time, these interventions can also effectively regulate laboratory detection parameters and promote the recovery of lung ventilation function in patients. Yang Yan et al. found that the use of auricular acupoint compression of beans combined with positive vibration expiratory pressure treatment can significantly improve the symptoms of sputum, cough, chest tightness, and other symptoms of patients, improve blood gas levels, and promote the recovery of lung function [22]. The results showed that the combination of acupoint application therapy with conventional Western medicine treatment can directly affect the focal area, significantly reduce the clinical discomfort of patients, and promote the recovery of the overall function of the body [23]. Xu Xingxing et al. found through clinical studies that the application of acupoint injection combined with sit-down Baduanjin based on conventional Western medicine treatment and nursing can effectively reduce the CAT score of AECOPD patients, improve blood gas indexes, lung function, etc., and thus promote the physical and mental health of patients [24].

## 5. Conclusion

AECOPD is one of the chronic respiratory diseases that seriously endanger public health and is an important cause of death in patients with COPD. In addition, the overall health status of patients may be adversely affected, including increased risk of disease exacerbation, increased frequency of hospitalization, and increased probability of re-admission [25]. From the point of view of traditional Chinese medicine theory, the acute attack of the disease is mainly due to the external six evil qi, evil qi internal transmission into heat evil, and then stimulate the phlegm in the body caused. The pathogenesis of the disease is characterized by deficiency and deficiency, and the lesion mainly involves the three viscera of the lung, spleen, and kidney.

With the development of the economy and society and the progress of medicine, although Western medicine is effective in the treatment of COPD acute exacerbation, it also has several limitations, including high treatment costs, which may cause adverse drug reactions and other toxic side effects. In the treatment of cough, phlegm, asthma, and other clinical symptoms, traditional Chinese medicine shows its unique advantages through the method of overall conditioning and syndrome differentiation [26], With advances in the understanding of COPD, TCM has demonstrated efficacy through diverse therapeutic approaches, including both internal and external treatments. The integration of TCM with Western medicine not only enhances therapeutic outcomes but also reduces the required dosage of Western drugs, mitigates adverse drug reactions, and improves patients' quality of life. In conclusion, TCM exhibits significant clinical potential in managing acute-stage COPD. Its unique therapeutic advantages offer novel insights for modern respiratory disease interventions, warranting further clinical exploration and broader application.

## References

[1] Chen Wenjuan. Curative effect of Erchen Decoction combined with Sanzi Yangqin Decoction on acute exacerbation of COPD [J]. Modern Diagnosis and Therapy, 2019, 35(15):2250-2252.

[2] Han Genpeng, Pang Cailing. Clinical observation of Maxing Qingfei Decoction in the treatment of

phlegm-heat obstructing lung syndrome during acute exacerbation of COPD [J]. Guangming Chinese Medicine, 2019, 39(24): 4968-4971.
[3] Shu Cheng, He Wenwen. Clinical effect of glucocorticoids combined with salbutamol and ipratropium bromide in the treatment of acute exacerbation of COPD [J]. World Latest Medical Information Abstracts, 2017, 17(96):110.
[4] Zhang Xiuzhu, Wang Shulu. Efficacy of budesonide, salbutamol and ipratropium bromide in the treatment of acute exacerbation of COPD and their effects on ventilation function and coagulation indexes [J]. Journal of Thrombosis and Hemostasis, 2012, 28(3):721-723.
[5] Zhang Yiting, Guo Tingting, Gu Hongxia. Clinical observation of Bufei Yiqi Jianpi Decoction in the treatment of chronic obstructive pulmonary disease in the elderly [J]. Chinese Journal of Chinese Medicine Science and Technology, 2019, 32(2):301-303.
[6] Li Daqing. Effect of Suzi Jiangqi Decoction on patients with acute exacerbation of COPD [J]. Chinese Journal of Modern Pharmacology, 2019, 18(21): 140-143.
[7] Chronic obstructive Pulmonary Disease Group, Respiratory Medicine Branch, Chinese Medical Association, Working Committee of Chronic obstructive Pulmonary Disease, Respiratory Medicine Branch, Chinese Medical Doctor Association. Guidelines for Diagnosis and Treatment of chronic obstructive pulmonary disease (Revised 2021 edition) [J]. Chinese Journal of Tuberculosis and Respiratory, 2019, 44(3): 170-205.
[8] Dong Guoliang, Wang Genfa, Hu Feixue. Review on diagnosis and treatment of chronic obstructive pulmonary disease [J]. Journal of Jiangxi University of Traditional Chinese Medicine, 2019, 36(5): 112-116, 124.
[9] Shi Lili, Wang Yitian. Investigation of TCM syndromes in patients with acute exacerbation of COPD and Influence of Banxia Houpu Decoction on levels of inflammatory factors in patients with COPD [J]. Inner Mongolia Traditional Chinese Medicine, 2019, 42(9): 52-53.
[10] Xu Dan, GAO Zhen, Li Fengsen, et al. Study on TCM syndrome type distribution and drug use in 2241 patients with COPD [J]. Journal of Chinese Medicine, 2010, 22(4): 300-301.
[11] Wan Tao. Observation on the clinical effect of Sangbaipi Decoction in treating patients with phlegm-heat obstructing lung during acute exacerbation of COPD [J]. Chinese Journal of Modern Pharmaceutical Application, 2018, 18(23): 127-130.
[12] Zhang Na. Effect of Pingchuan Zhike Decoction on elderly patients with acute chronic obstructive pulmonary disease and its influence on lung function and blood gas indexes [J]. China Health Care, 2019, 42(13): 35-37, 41.
[13] Liu Jialiang. Effect evaluation of Zhenwu Decoction combined with Wuling SAN in the treatment of acute exacerbation of chronic obstructive pulmonary syndrome of Yang-deficiency syndrome [J]. Inner Mongolia Traditional Chinese Medicine, 2019, 43(6): 25-27.
[14] Fang Ming, Liu Jiachang. Clinical observation of compound anti-influenza Chinese patent medicine preparation in pre-hospital intervention of acute exacerbation of chronic obstructive pulmonary disease [J]. Chinese Journal of Traditional Chinese Medicine, 201, 36(2): 1168-1170.
[15] Ren Junqing. Effects of Suhuang Zhike Capsule on pulmonary function, blood gas analysis, serum PCT and CRP in patients with acute exacerbation of chronic obstructive pulmonary disease [J]. Journal of Modern Integrated Chinese and Western Medicine, 2019, 28(13): 1442-1445.
[16] Liu Xinyan, Yu Wenning, Zhang Yujing, et al. Clinical observation of Tanreqing Injection in the treatment of patients with acute exacerbation of phlegm-heat obstructing pulmonary disease [J]. Liaoning Journal of Traditional Chinese Medicine, 2019, 51(12):57-59.
[17] Zheng Shenghua, You Qin. Clinical observation of Danhong injection combined with Western medicine in treatment of elderly patients with acute exacerbation of chronic obstructive pulmonary disease [J]. Journal of Gerontology and Health Care, 2012, 28(1):135-139.
[18] Su Xiujian, Yang Yingyi, Su Xiaoyin. Clinical observation of different administration methods of Chuankezhi injection in the treatment of acute exacerbation of COPD [J]. Yunnan Journal of Traditional Chinese Medicine, 201, 42(7): 37-40.
[19] Zhang Pu, Zhang Ning, Zhao Xian, et al. Study on regulation of intestinal flora by acupuncture and moxibustion for treatment of respiratory diseases based on the theory of “lung and large intestine” [J]. Journal of Acupuncture and Moxibustion, 2019, 39(8): 1-5.
[20] Zhang Qiang. Clinical observation of acupuncture combined with Sanzi Yangqin Decoction in the treatment of acute exacerbation of chronic obstructive pulmonary disease [J]. Journal of Practical Chinese Medicine, 202, 38(8):1392-1394.
[21] Wu Yiyuan, Yang Xiaoqiong, Xu Yarong. Effect of Pingchuan Tiaozhong acupuncture combined with acupoint embedding on non-invasive ventilation in the treatment of acute exacerbation of chronic obstructive pulmonary disease [J]. Chinese Journal of Traditional Chinese Medicine, 20, 38(7): 240-243.
[22] Yang Yan, Xie Xiaoguang, Liu Jing, et al. Effect of auricular point compression and positive vibration expiratory pressure on patients with acute exacerbation of COPD [J]. China Health Care, 2019, 41(24):18-21.
[23] Zhu Shouqin. Effect of Yifengfengfang acupoint application combined with conventional Western medicine treatment on symptom improvement and lung function in elderly patients with acute exacerbation of COPD [J]. Reflexology and Rehabilitation Medicine, 2019, 5(7):28-31.
[24] Xu Xingxing, Zhang Xiaowen, Xu Ying, et al. Effect of sitting Baduanjin combined with acupoint injection on quality of life in patients with acute exacerbation of COPD [J]. Smart Health, 2023, 9(23):200-203.
[25] Zheng Xudong, Kong Deyu, Zhao Benzhang, et al. Clinical observation of Jinwei Pingchuan Decoction in treating patients with phlegm-heat stasis lung syndrome during acute exacerbation of chronic obstructive pulmonary disease [J]. Chinese Journal of Experimental Formulae, 2019, 31(7):125-133.
[26] Willow Laurel chrysanthemum. Application of Sangbaipi Decoction combined with nasal high flow

oxygen therapy in acute exacerbation of COPD [J]. Chinese Science and Technology of Traditional Chinese Medicine, 2019, 31(4): 669-671.