International Journal of Biology and Life Sciences
ISSN: 2957-9511 | Vol. 17, No. 1, 2026

Research Progress of Suzi Jiangqi Decoction in the Treatment of Chronic Obstructive Pulmonary Disease

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Abstract: Chronic obstructive pulmonary disease (COPD) is a prevalent and heterogeneous pulmonary disorder. Affected individuals develop inflammatory responses within the airways and pulmonary tissues, which result in airflow limitation and give rise to persistent respiratory manifestations such as cough, expectoration, wheezing, and shortness of breath. In recent years, COPD has been primarily attributed to abnormalities resulting from chronic bronchitis, emphysema, and related disorders. Through systematic literature retrieval, collation, and analysis, the author has comprehensively reviewed the research progress of Suzi Jiangqi Decoction in the management of COPD among pulmonary diseases. The biological activities, mechanisms of action, clinical applications, and synergistic effects with Western medications of Suzi Jiangqi Decoction are summarized as follows.

Keywords: Chronic Obstructive Pulmonary Disease; Suzi Jiangqi Decoction; Bioactivity; Clinical Research; Review.

1. Introduction

In recent years, the global burden of COPD has risen substantially, driven by population aging, increasing tobacco use, and deteriorating air quality. Meanwhile, World Health Organization statistics reveal that COPD has ascended to become the third most common cause of mortality worldwide, endangering public health and placing substantial strain on both patients' well-being and healthcare systems [1]. At present, Western medicine mainly employs bronchodilators and inhaled corticosteroids for the treatment of COPD. Although these approaches can alleviate the condition to a certain extent, long-term use is associated with numerous adverse reactions, difficulty in delaying disease progression, and an inability to fundamentally improve patient prognosis [1]. Consequently, there is growing clinical interest in identifying safer, more tolerable therapeutic options that exert multi-target regulatory effects. Amid the resurgence of the traditional Chinese medicine sector, Suzi Jiangqi Decoction—rooted in the holistic framework and syndrome-based therapeutic principles of TCM—has shown distinctive benefits in both preventing and managing COPD, thereby garnering widespread interest [2].

Suzi Jiangqi Decoction was first documented in the Tang Dynasty text Bei Ji Qian Jin Yao Fang under the original name Zisu Zi Tang. During the Baoqing period of the Song Dynasty, Perilla Leaf (Zi Su Ye) was added to the formula, and it was subsequently renamed and included in the Tai Ping Hui Min He Ji Ju Fang of the Song Dynasty. It is a classical formula in traditional Chinese medicine for the treatment of cough and wheezing. The decoction has the effects of descending qi to relieve wheezing, removing phlegm, and stopping cough, and is indicated for cough and wheezing syndromes of upper excess and lower deficiency, demonstrating notable therapeutic efficacy in modern pulmonary diseases [3]. The present paper offers a systematic overview of the investigative advancements concerning Suzi Jiangqi Decoction in COPD therapy. In terms of bioactive components, it summarizes the pharmacological actions of its main active substances, such as quercetin, kaempferol, naringenin, and luteolin. At the molecular level, the formula's mechanisms are examined, encompassing modulation of the MAPK [4], IL-17, and NF-κB [5] signaling cascades, alongside regulation of pro-inflammatory mediators including IL-6, TNF-α, and MMP-9 [1], through which anti-inflammatory, antioxidant, and immunoregulatory activities are achieved. Finally, it summarizes the current clinical application status of this formula in COPD and its synergistic therapeutic models and effects when combined with Western medications.

By performing an exhaustive synthesis and critical evaluation of the extant literature, this review systematically addresses four dimensions—active constituents, mechanisms of action, clinical practice, and integrative Chinese-Western medicine approaches—with the objective of furnishing a reference framework for the modern scientific investigation and clinically precise deployment of classical TCM formulas.

2. Formula Analysis of Suzi Jiangqi Decoction

2.1. Compatibility Analysis Based on Monarch-Minister-Assistant-Envoy Theory

The formulation comprises the following medicinal materials: Perilla Fructus (Zi Su Zi), Pinelliae Rhizoma (Ban Xia), Peucedani Radix (Qian Hu), Magnoliae Officinalis Cortex (Hou Po), Citri Reticulatae Pericarpium (Chen Pi), Angelicae Sinensis Radix (Dang Gui), Cinnamomi Cortex (Rou Gui), Glycyrrhizae Radix et Rhizoma Praeparata cum Melle (Zhi Gan Cao), Zingiberis Rhizoma Recens (Sheng Jiang), Jujubae Fructus (Da Zao), and Perillae Folium (Zi Su Ye). It has the therapeutic effects of descending qi to relieve wheezing, removing phlegm, and stopping cough [3]. Monarch drug: Perilla Fructus (Zi Su Zi) acts as the principal component in this prescription. This agent possesses a pungent and warm property and targets the Lung and Large Intestine channels. It can descend qi, resolve phlegm, relieve cough, and calm wheezing [6]. Perillae Fructus can directly descend counterflow qi and transform turbid phlegm. In accordance with the therapeutic principle of "treating the manifestation when the condition is acute," it can address the

pathological state of excessive phlegm accumulation and upward counterflow of lung qi in COPD patients. Minister drug: Pinelliae Rhizoma (Ban Xia) [3]. Pinelliae Rhizoma dries dampness, resolves phlegm, and descends counterflow qi, thereby enhancing the phlegm-resolving and qi-descending effects of the monarch drug. Modern pharmacological studies have shown that the alkaloids from Pinelliae Rhizoma possess anti-inflammatory effects [7]. Assistant drugs: Magnolia Officinalis Cortex (Hou Po), Peucedanum Radix (Qian Hu), Cinnamomum Cortex (Rou Gui), and Angelica Sinensis Radix (Dang Gui)[3]. Magnoliae Officinalis Cortex descends qi, relieves chest fullness, and eliminates distension; Peucedani Radix descends qi, resolves phlegm, stops cough, and also has the effect of dispersing; Cinnamomi Cortex warms and supplements the lower origin, restores the kidney's qi-receiving function, and relieves wheezing, targeting the "lower deficiency" manifested as kidney yang insufficiency in COPD; Angelicae Sinensis Radix not only treats cough with counterflow qi but also nourishes blood, tonifies the liver, and moistens dryness, thereby counteracting the potential yin-depleting effects of the other warm and drying agents. Assistant and envoy drugs: Fresh Ginger Rhizome (Sheng Jiang), Honey-fried Licorice Root and Rhizome (Zhi Gan Cao), Jujube Fruit (Da Zao), and Perilla Leaf (Zi Su Ye). They assist the monarch and minister drugs in dispersing exterior pathogens, harmonizing the stomach, and descending counterflow qi, as well as harmonizing all the ingredients and regulating the spleen and stomach [6]. Additionally, glycyrrhizic acid contained in Glycyrrhizae Radix et Rhizoma has clear anti-inflammatory and immunomodulatory effects.

2.2. Pathogenesis Interpretation of COPD

Suzi Jiangqi Decoction is clinically indicated for cough and wheezing disorders conforming to the "upper excess with lower deficiency" pattern. The term "upper excess" denotes the pooling of phlegm and fluid within the lung accompanied by impairment of pulmonary dispersing and descending activities, clinically presenting as thoracic fullness and tightness, asthmatic coughing with copious expectoration, a white or greasy-white tongue coating, and a taut-slippery pulse. The "lower deficiency" refers to the decline of kidney yang in the lower aspect: firstly, the kidney fails to grasp qi, resulting in prolonged expiration with shortened inspiration and shortness of breath; secondly, the kidney fails to govern the bones, manifesting as lumbago and weak lower limbs; and thirdly, the kidney fails to regulate water metabolism, leading to water retention transforming into phlegm and external edema [6]. This pathogenic feature is highly consistent with the clinical manifestations of COPD. In patients with COPD, the acute exacerbation phase is often characterized by "upper excess" symptoms such as cough, sputum production, wheezing, and chest tightness [7], while the stable phase is more commonly associated with "lower deficiency" manifestations including shortness of breath, fatigue, and decreased exercise capacity [8]. In contemporary TCM clinical practice, COPD is frequently categorized as "lung distension" (Fei Zhang) or "wheezing disorder" (Chuan Zheng), with its underlying pathogenesis conceptualized as root deficiency accompanied by superficial excess. The acute stage is chiefly dominated by excess-type patterns, including phlegm turbidity blocking the lung and phlegm turbidity congesting the lung, while the stable stage is fundamentally rooted in deficiencies of the lung, spleen, and kidney [9].

3. Active Components and Mechanisms of Action of Suzi Jiangqi Decoction in the Treatment of COPD

3.1. Screening and Identification of Major Active Components

According to network pharmacology studies, a total of 163 active components were screened from Suzi Jiangqi Decoction, and 283 potential targets were predicted, among which 159 targets were identified as related to the treatment of COPD. Topological analysis of the "TCM–component–target" interaction network revealed that quercetin, kaempferol, naringenin, and luteolin constitute the principal active ingredients responsible for anti-COPD activity [1]. Molecular docking studies have further confirmed that these core components exhibit favorable binding affinity with COPD-related targets such as MAPK14, RELA, TNF, and IL-6 [10]. In a recent modern study, ultra-high performance liquid chromatography coupled with quadrupole-orbitrap mass spectrometry (UHPLC-Q-Orbitrap MS/MS) was employed for component identification of Modified Suzi Jiangqi Decoction, and a total of 864 chemical components were detected. Based on scoring criteria, 326 compounds were matched, among which the top 30 active components were identified as the primary material basis of this formula for the treatment of COPD [5].

3.2. Anti-Inflammatory Mechanism of Action

Inflammatory response is a core pathological link in the onset and progression of COPD, involving multiple inflammatory cells and inflammatory cytokines. The flavonoid components in Suzi Jiangqi Decoction (such as quercetin, kaempferol, and luteolin), are capable of suppressing pro-inflammatory cytokine release via modulation of multiple inflammation-associated signal transduction cascades.

3.2.1. Regulation of the MAPK Signaling Pathway

The mitogen-activated protein kinase (MAPK) cascade constitutes a significant intracellular signaling route involved in inflammatory responses. In a clinical investigation, Ye Xuxing and colleagues examined whether Suzi Jiangqi Decoction ameliorates inflammatory status in COPD patients through MAPK pathway modulation. The results indicated that this formula could significantly reduce the serum levels of inflammatory cytokines in patients, which is an effect mechanistically attributable to MAPK signaling regulation [4]. Network pharmacology analysis showed that active components in Suzi Jiangqi Decoction, such as quercetin and kaempferol, can act on multiple MAPK pathway-related targets including MAPK1, MAPK3, and MAPK14. Molecular docking studies by Chen Guofang et al. further confirmed that luteolin exhibits strong binding affinity with MAPK14 (binding energy < -6 kcal/mol), implying that its anti-inflammatory actions may be mediated via MAPK pathway regulation [9].

3.2.2. Regulation of the NF-κB Signaling Pathway

Nuclear factor kappa-B (NF-κB) serves as a pivotal transcriptional regulator in inflammatory cascades. By integrating UHPLC-Q-Orbitrap MS/MS with network pharmacology, Lu and colleagues discovered that Modified Suzi Jiangqi Decoction elicits anti-inflammatory activity via NF-κB pathway modulation. Using in vitro cellular experiments, they confirmed that this formula can modulate

the expression of I-κBα and p65, and inhibit IL-17-induced MUC5AC secretion. Clinical observations further demonstrated that AECOPD patients presenting with the phlegm turbidity congesting the lung pattern exhibited marked reductions in serum IL-17 and MUC5AC levels following administration of Modified Suzi Jiangqi Decoction [5].

3.3. Anti-Oxidative Stress Effect

Oxidative stress is another important link in the pathogenesis of COPD, which can lead to lung tissue damage and exacerbated inflammatory responses. The flavonoid components in Suzi Jiangqi Decoction possess definite anti-oxidative stress activity.

Network pharmacology studies by Kang Yan et al. indicated that the biological processes involved in the treatment of COPD with Suzi Jiangqi Decoction include "response to oxidative stress" and "response to lipopolysaccharide" [1]. Li Niuniu and associates performed a randomized controlled trial enrolling 60 patients diagnosed with stable COPD of the phlegm turbidity congesting the lung pattern. The control arm received Western pharmacotherapy alone, whereas the observation arm received Western treatment supplemented with Suzi Jiangqi Decoction. Following 30 consecutive days of intervention, the observation group demonstrated a significantly greater reduction in fractional exhaled nitric oxide (FeNO) relative to the control group ($P<0.05$), indicating that Suzi Jiangqi Decoction can significantly improve pulmonary ventilation in COPD patients, potentially through a mechanism involving decreased FeNO levels [8].

3.4. Immunomodulatory Effect

Immune dysfunction is one of the major pathological states in COPD, manifesting as imbalance of T lymphocyte subsets and dysregulation of cytokines. Suzi Jiangqi Decoction can exert therapeutic effects on regulating immune cell function through three pathways.

3.4.1. Regulation of Th1/Th2 Balance

Xu Guoting et al. employed the method of ovalbumin (OVA) injection combined with aerosolized inhalation for sensitization and challenge to establish an asthma rat model. Serum and bronchoalveolar lavage fluid specimens were analyzed for IFN-γ and IL-4 concentrations using radioimmunoassay and enzyme-linked immunosorbent assay techniques. The results revealed that Suzi Jiangqi Decoction could decrease the content of IL-4 and increase the content of IFN-γ, thereby regulating the balance of Th1/Th2 cytokines [10]. Nevertheless, this study was conducted based on an asthma model, and its relevance to COPD requires further verification in future investigations.

3.4.2. Regulation of T Lymphocyte Subsets

Lu Jiayan performed a randomized controlled investigation enrolling 74 COPD patients with the phlegm-heat obstructing the lung pattern, who were allocated into two groups. The results showed that in the study group treated with Suzi Jiangqi Decoction combined with Reduning Injection, the post-treatment levels of $CD3^+$, $CD4^+$, and the $CD4^+/CD8^+$ ratio were significantly higher than those in the control group treated with Reduning Injection alone, while the $CD8^+$ level was significantly lower, suggesting that Suzi Jiangqi Decoction can improve blood gas analysis and significantly enhance the immune function of the patients [11].

3.4.3. Regulation of the IL-21/CXCL13 Axis

Zheng Xin et al. selected 108 patients with AECOPD and randomly divided them into two groups for a controlled study. The observation group received oral administration of Suzi Jiangqi Decoction on the basis of Western medicine treatment, with serum IL-21 and CXCL13 concentrations measured via enzyme-linked immunosorbent assay. Post-intervention findings indicated that the observation group experienced significantly greater reductions in IL-21 and CXCL13 levels relative to the control group ($P<0.05$), and the improvement in pulmonary function and quality of life of the patients was more pronounced, suggesting that this formula may exert immunomodulatory effects through regulating the function of T follicular helper (Tfh) cells [7].

3.5. Inhibition of Airway Mucus Hypersecretion

Airway mucus hypersecretion is also one of the important pathological features of COPD. Overexpression of mucin MUC5AC can lead to increased sputum production, airway obstruction, and airflow limitation. Suzi Jiangqi Decoction inhibits and ameliorates the state of mucus hypersecretion through the regulation of multiple molecules.

3.5.1. Regulation of MUC5AC and AQP5 Expression

Fu Haijing et al. established a rat model of airway mucus hypersecretion in COPD by cigarette smoke exposure combined with intratracheal instillation of lipopolysaccharide. A total of 32 male Wistar rats were randomized into blank control, model control, Fluimucil, and Suzi Jiangqi Decoction groups. Pulmonary MUC5AC and AQP5 protein expression were evaluated using immunohistochemical staining. The findings demonstrated that Suzi Jiangqi Decoction significantly downregulated MUC5AC protein while upregulating AQP5 protein expression ($P<0.05$), thereby reducing airway mucus secretion and alleviating airway obstruction [12].

3.5.2. Regulation of the NF-κB/IL-17/MUC5AC Axis

Lu et al., through in vitro cellular experiments, investigated the mechanism of Modified Suzi Jiangqi Decoction on airway mucus hypersecretion. An IL-17 cytokine-induced model of mucus hypersecretion was established, and MUC5AC expression was detected by immunofluorescence, Western blotting, and qPCR. The results showed that Modified Suzi Jiangqi Decoction could inhibit IL-17-induced MUC5AC mRNA and protein expression, an effect linked to modulation of I-κBα and p65 within the NF-κB signaling axis. Clinical evidence further corroborated that AECOPD patients receiving Modified Suzi Jiangqi Decoction exhibited marked decreases in circulating IL-17 and MUC5AC concentrations [5].

3.5.3. Regulation of Apoptosis

Abnormal apoptosis is involved in the formation of pulmonary emphysema and the process of airway remodeling in COPD. Suzi Jiangqi Decoction may exert its effects through the regulation of apoptosis-related gene expression. Li Yinghua and associates randomized 80 AECOPD patients into two arms: the control group received ipratropium bromide monotherapy, while the study group received modified Suzi Jiangqi Decoction in addition to the control regimen. Airflow limitation severity and the expression profiles of T lymphocyte apoptosis-associated genes—including Fas/Apo-1, IL-1β, and TNF-α—were assessed and contrasted between groups. The study group demonstrated

superior airflow limitation indices relative to the control group, along with significantly reduced T lymphocyte apoptosis marker levels ($P<0.05$), suggesting that this formula can improve airflow limitation and regulate apoptosis-related gene expression in patients [13].

4. Modern Clinical Application of Suzi Jiangqi Decoction in the Treatment of COPD and Its Synergistic Therapy with Western Medications

In recent years, the integration of Suzi Jiangqi Decoction with Western pharmacotherapy for COPD has become increasingly extensive, and numerous clinical studies have confirmed its advantages of synergistic efficacy. According to different disease stages, the combined application of this formula with Western medications can be mainly divided into the following aspects.

4.1. Synergistic Therapy in the Stable Phase

In stable COPD patients, co-administration of Suzi Jiangqi Decoction with bronchodilators yields substantial enhancements in both pulmonary functional parameters and quality of life. Wang Beibei et al.conducted a randomized trial involving 110 stable COPD patients assigned to two groups: the observation group received tiotropium bromide inhalation alone, while the control group received Suzi Jiangqi Decoction in combination with tiotropium bromide. This study confirmed that Suzi Jiangqi Decoction combined with tiotropium bromide could significantly improve blood gas parameters in patients, while reducing the St. George's Respiratory Questionnaire (SGRQ) score and serum amyloid A (SAA) level, and increasing the oxygenation index [14].

4.2. Synergistic Therapy in the Acute Exacerbation Phase

Table 1. Summary of Clinical Studies on Suzi Jiangqi Decoction in the Treatment of COPD

Investigator(s) (Year)	Study Subjects/Models	Intervention (Treatment vs Control)	Conclusion
Ye Xuxing et al.(2024)	COPD	Suzi Jiangqi Decoction + conventional Western medicine vs conventional Western medicine	Significantly reduces serum inflammatory cytokine levels; mechanism associated with MAPK signaling pathway regulation.
Lu et al.(2025)	AECOPD (pattern of phlegm turbidity congesting the lung)	Modified Suzi Jiangqi Decoction + conventional treatment vs conventional treatment	Significantly reduces IL-17 and MUC5AC levels.
Zheng Xin et al.(2018)	AECOPD (pattern of phlegm turbidity congesting the lung)	Suzi Jiangqi Decoction + conventional Western medicine vs conventional Western medicine	More significant improvements in pulmonary function and quality of life; mechanism may involve regulation of Tfh cell function.
Li Niuniu et al.(2018)	Stable COPD (pattern of phlegm turbidity congesting the lung)	Suzi Jiangqi Decoction + conventional Western medicine vs conventional Western medicine	FeNO level decreased more significantly ($P<0.05$); mechanism may be associated with reduction of FeNO concentration.
Lu Jiayan et al.(2019)	COPD (pattern of phlegm-heat obstructing the lung)	Suzi Jiangqi Decoction + Reduning Injection vs Reduning Injection	$CD3^+$, $CD4^+$, and $CD4^+/CD8^+$ significantly elevated, while $CD8^+$ significantly reduced, indicating enhanced immune function.
Fu Haijing Qu nini (2018)	Rat model of COPD airway mucus hypersecretion	Suzi Jiangqi Decoction group vs model group vs Fluimucil group vs blank group	MUC5AC significantly decreased and AQP5 expression enhanced ($P<0.05$), resulting in reduced airway mucus secretion.
Li yinghua et al.(2023)	AECOPD	Modified Suzi Jiangqi Decoction + compound ipratropium bromide vs compound ipratropium bromide	Airflow limitation parameters improved, and T lymphocyte apoptosis markers significantly decreased ($P<0.05$).
Wang beibei Cui Najuan (2022)	Stable COPD	Suzi Jiangqi Decoction + tiotropium bromide vs tiotropium bromide	Blood gas parameters improved, SGRQ scores and SAA levels reduced, and oxygenation index increased.
Wang Jingbo (2021)	AECOPD (pattern of phlegm turbidity obstructing the lung)	Suzi Jiangqi Decoction + budesonide suspension vs budesonide suspension	Pulmonary infection control window (5.26±1.21 d) and antibiotic course (8.65±1.85 d) both shortened, with significantly reduced PCT and CRP levels.
Chen Dongmei Wang Jiyuan (2020)	AECOPD	Suzi Jiangqi Decoction + conventional Western medicine vs conventional Western medicine	All indicators showed significantly greater improvements vs control group ($P<0.05$), with rapid relief of infection and reduction of inflammatory levels.

Table 2. Summary of Active Components and Targets of Suzi Jiangqi Decoction

Active Components	Source Herbs	Targets/Pathways	Pharmacological Effects
Quercetin	Perilla Fructus (Zi Su Zi), Perillae Folium (Zi Su Ye)	MAPK1, MAPK3, MAPK14, TNF, IL-6	Anti-Inflammatory Mechanism, Anti-Oxidative Stress
Kaempferol	Perilla Fructus (Zi Su Zi), Perillae Folium (Zi Su Ye)	MAPK1, MAPK3, MAPK14, RELA	Anti-Inflammatory Mechanism, Immunomodulatory
Naringenin	Magnoliae Officinalis Cortex (Hou Po), Citri Reticulatae Pericarpium (Chen Pi)	TNF, IL-6, MAPK Pathway	Anti-Inflammatory Mechanism, *Anti-Oxidative Stress*
Luteolin	Perilla Fructus (Zi Su Zi), Peucedani Radix (Qian Hu)	MAPK14 (binding energy<-6 kcal/mol), RELA	Anti-Inflammatory Mechanism
Components Related to IL-17 Regulation	Perilla Fructus (Zi Su Zi), Pinelliae Rhizoma (Ban Xia), Peucedani Radix (Qian Hu), Magnoliae Officinalis Cortex (Hou Po), Citri Reticulatae Pericarpium (Chen Pi), Angelicae Sinensis Radix (Dang Gui), Cinnamomi Cortex (Rou Gui), Glycyrrhizae Radix et Rhizoma Praeparata cum Melle (Zhi Gan Cao), Zingiberis Rhizoma Recens (Sheng Jiang), Jujubae Fructus (Da Zao), and Perillae Folium (Zi Su Ye)	NF-κB Pathway (I-κBα, p65), MUC5AC	Inhibition of Airway Mucus Hypersecretion

For AECOPD management, adjunctive Suzi Jiangqi Decoction with standard Western therapies expedites symptomatic alleviation and reduces illness duration. Wang Jingbo, in a study of 91 patients with AECOPD of the pattern of phlegm turbidity obstructing the lung, found that after the combination of budesonide suspension with Suzi Jiangqi Decoction, the time to pulmonary infection control window (5.26±1.21) days and the duration of antibiotic therapy (8.65±1.85) days were both shorter than those in the Western medicine alone group, and the scores of cough, wheezing, and sputum production as well as the levels of PCT and CRP were significantly reduced [15]. Chen Dongmei and Wang Jiyuan randomized 138 AECOPD patients into a trial arm and a control arm. The trial arm was administered Suzi Jiangqi Decoction alongside conventional Western treatment, whereas the control arm received conventional Western treatment exclusively. The trial arm exhibited significantly superior improvements across multiple outcome measures compared with the control arm: greater reductions in cough, anorexia, sputum production, and chest tightness scores; more pronounced elevations in FEV_1, FVC, and FEV_1/FVC; enhanced PaO_2 elevation and $PaCO_2$ reduction; and more substantial decreases in IL-38 and hs-CRP levels (all $P<0.05$) [16]. These findings from clinical studies have confirmed that the combination of Suzi Jiangqi Decoction with Western medications can rapidly alleviate pulmonary infection and reduce inflammatory levels in patients.

5. Conclusion

In conclusion, this article summarizes that certain progress has been achieved in the research on Suzi Jiangqi Decoction in the treatment of COPD. The advantages of Suzi Jiangqi Decoction in treating COPD lie in its multi-target regulation, synergistic efficacy, and significant symptom improvement. The combined use with Western medications has yielded more efficient clinical outcomes in the treatment of COPD. However, there still exist issues such as insufficient depth in mechanistic studies, uneven quality of clinical research, and a lack of standardized quality control criteria. In the future, we hope to adopt more advanced and modern scientific technologies to further advance the in-depth investigation of Suzi Jiangqi Decoction in the treatment of COPD. Specifically, multicenter, large-sample, double-blind randomized controlled trials (RCTs) should be conducted to comprehensively evaluate the clinical efficacy and safety of this formula. Concurrently, the holistic mechanism of action of the formula should be thoroughly explored, and more robust quality control standards should be established to ensure its safety and stability. On this basis, individualized dosing regimens can be explored according to the diverse symptoms and individual differences of COPD patients, thereby achieving precision therapy. In this way, we aim to promote this classical formula in a safer, more tolerable, and more effective manner for the treatment of COPD patients, and to contribute to the modernization and internationalization of traditional Chinese medicine.

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