

# Clinical Analysis of Qinglongdingchuan Decoction on Acute Exacerbation of Chronic Obstructive Pulmonary Disease

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**Objective** To explore the clinical effect of QinglongDingchuan Decoction on patients with acute exacerbation of chronic obstructive pulmonary disease (AECOPD) and analyze its mechanism. **Methods** From June 2017 to June 2019, patients with AECOPD were randomly divided into the observation group and the control group according to the time sequence of treatment, 40 cases in each group were observed. **Control group:** conventional western medicine treatment (controlled oxygen therapy, antibiotics, expectorants, bronchodilators, etc.), **observation group:** QinglongDingchuan decoction. 6 days is a course of observation. The routine pulmonary function, blood gas analysis, serum inflammatory factors, clinical symptoms and signs were observed. **Results** The observation group was superior to the control group in clinical control rate and effective rate ( $P < 0.05$ ), suggesting that the treatment group was superior to the control group in overall effective rate. There were differences in symptoms, physical signs and total symptom scores between the two groups before and after treatment. The improvement of serum inflammatory factors in the treatment group was better than that in the control group. The improvement of PaCO<sub>2</sub> and PaO<sub>2</sub> in the treatment group was better than that in the control group. **Conclusion** QinglongDingchuan decoction can better improve the clinical symptoms, physical signs, blood gas analysis indicators, improve the overall efficiency, and has a better effect on patients with fever AECOPD.

**Keywords:** QinglongDingchuan Decoction; acute exacerbation of chronic obstructive pulmonary cell disease

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Chronic Obstructive Pulmonary Disease (COPD) becomes a severe public health issue due to its high morbidity rate and death rate. WHO thinks it as the main reason to cause the death and disease burden. Acute Exacerbation of Chronic Obstructive Pulmonary Disease (AECOPD) has the direct impact on the disease death rate and prognosis<sup>1</sup>. Early monitoring of the patient's conditions is of great significance for the treatment and protection of lung functions. With the rapid development of modern medicine, many clinical diagnosis and treatment standards have been formulated to rapidly alleviate symptoms and delay the progress of diseases. However, in the therapeutic process, patients cannot continue for

treatment and have larger risks due to the extensive use of broad-spectrum antibiotics, hormones and other chemicals. Hence, it is an urgent task for the current diagnosis to find a safe and effective therapeutic method. According to the features of cough, excessive phlegm and asthma, the chronic obstructive pulmonary disease belongs to "lung distension", "cough" and "asthma"<sup>2</sup>. In the clinical remission, the main symptoms are deficiency of lung, spleen and kidney. During the attack, phlegm, heat and fatigue are the most important symptoms and the acute exacerbation plays an important catalytic action in the COPD process. With the development of COPD, the severe complications often occur, such as lung, heart failure, respiratory

failure and pulmonary encephalopathy. Due to the limitation of virus isolation technology, it has not fully recognized the role of virus infection in the acute exacerbation and it lacks the effective drugs to prevent and treat the virus infection<sup>3</sup>. Chronic obstructive pulmonary disease is commonly seen in the acute exacerbation and the key pathogenesis of the disease is the syndrome of external cold and internal fluid. The therapy is to warm lung and resolve fluid and eliminate pathogens by phlegm elimination and purgation, respectively. With the QinglongDingchuan Decoction based on Xiaoqinglong decoction for the clinical treatment of AECOPD patients. This research provides new approaches and new ideas.

## MATERIALS AND METHODS

### General data

From June 2017 to June 2019, patients with AECOPD syndrome of external cold and internal fluid were randomly divided into the observation group and the control group according to the time sequence of treatment, 40 cases in each group were observed. Control group: conventional western medicine treatment (controlled oxygen therapy, antibiotics, expectorants, bronchodilators, etc.), observation group: QinglongDingchuan Decoction Scheme

**Inclusion criteria:** According to the AECOPD diagnostic criteria, the patient's TCM syndrome was the syndrome of external cold and internal fluid and he/she had the acute attack in three days and could finish the measurement of the experimental observation index, with the age ranging from 35 to 80 years old; Besides, he/she did not participate in the clinical research of other drugs and is willing to receive the treatment and has the informed consent.

**Exclusion criteria:** The patient was allergic to the therapeutic drugs; The patient had the infection of other parts; he/she once used the immunosuppressor; the patient took the glucocorticoid orally within one month before the admission; the patient had the severe primary cardiovascular, liver and kidney and hemopoietic system diseases and had the mental disease; the patient who had the low compliance and language communication barriers once participated in other clinical tests.

### Clinical diagnosis

#### Western medicine diagnosis:

According to the comprehensive analysis of the clinical manifestation and contact history, the diagnosis, interstitial standards, risk factors, physical sign, laboratory examination and other data of revised Diagnosis and Treatment Guidelines of Chronic Obstructive Pulmonary Disease were released by the chronic obstructive pulmonary disease group of Chinese Medical Association. The lung function test index is the golden standards for diagnosis. After using the bronchodilator, if the incompletely reversible airflow restriction could be confirmed other than other diseases, it could be diagnosed as COPD. Change drug treatment plan in the disease process, the patient usually has the cough, special symptom, shortness of breath, adding saliva amount, purulent or punctate sputum and obvious inflammation deterioration (such as fever) in a short time.

#### TCM diagnosis:

##### Diagnosis standards of "lung distension":

There are many incurable lung diseases for many years, most of which are caused by exogenous pathogenic qi. It is common in the elderly. The symptoms include the asthma, cough, chest pain, fatigue and melancholy and it would be worse when you exercise. When it is severe, the lip and nail cyanosis, swelling and fullness of limbs may occur and the patient may have the hemorrhage and asthma when it is severe.

TCM syndrome differentiation and classification standards.

The lung distension's period is the acute exacerbation period and the key pathogenesis of the disease is the syndrome of external cold and internal fluid.

**Primary symptoms:** Cough with dyspnea without lying down, shortness of breath and expectoration with watery white sputum, large amount and frothy feature, chest swelling; Dry mouth with no desire for drinking, dark complexion or edema face and limbs; fat tongue, dim tongue texture, white and smooth coated tongue, floating pulse.

### Therapeutic methods

#### Control group:

Treatment by western medicine: Therapeutic method of COPD acute exacerbation in the

Revised Edition of COPD Diagnosis and Treatment Guidelines should be paid attention to. Oxygen inhalation: inhale oxygen with the low flow. Antibiotics: Ceftriaxone. Levofloxacin was usually given intravenously once a day. Moxifloxacin was used for patients who are allergic to the cephalosporin and penicillin and it was usually given intravenously once a day; For pseudomonas aeruginosa patients with high risks, sodium Tazobactam sodium was given intravenously every hour. After reporting the saliva culture and drug susceptibility, the corresponding sensitive antibiotics were selected; Bronchodilator: ultrasonic atomization was used to inhale the terbutaline hydrochloride's Ipratropium Bromide Aerosol; The patients who cannot tolerate the aerosol inhalation shall take the aminophylline every day. Index: The patients with thick phlegm shall orally take the standard Myrtol oil enteric coated capsule, added with the intravenous drip of Ambroxol Hydrochloride Injection.

### Observation group:

QinglongDingchuan Decoction was used to treat the lung distension in the acute exacerbation period and the key pathogenesis of the disease was the syndrome of external cold and internal fluid. The therapy was to warm lung and resolve fluid and eliminate pathogens by phlegm elimination and purgation, respectively. The prescription was 6g of honey-fried HERBA EPHEDRAE, 15g cassia twig, 15g rhizomazingiberis, 3g asarum, 10g ginger processed pinellia, 10g honey-fried licorice root, 15g white peony, 10g schisandra chinensis, 6g root of fangji, 10g Chinese prickly ash, 15g semen lepidii (wrap-boiling), 6g rheum officinale (decocted later), 10g almond, 6g cicada slough and 30g amethyst (decocted earlier). Nongbenfang granule was used to prepare 300ml decoction and it was taken separately in the morning and evening.

Acute exacerbation period, syndrome of external

cold and internal fluid, primary symptoms: Cough with dyspnea without lying down, shortness of breath and expectoration with watery white sputum, large amount and frothy feature, chest swelling; Dry mouth with no desire for drinking, dark complexion or edema face and limbs; fat tongue, dim tongue texture, white and smooth coated tongue, floating pulse. Therapy: warm lung and resolve fluid and eliminate pathogens by phlegm elimination and purgation. Prescription: QinglongDingchuan Decoction.

### Evaluation tool and index

A course of observation is 6 days. Observed the routine pulmonary function, blood gas analysis PaCO<sub>2</sub> and PaO<sub>2</sub>, serum inflammatory factors, clinical symptom and physical sign.

Routine pulmonary function: The main measurement indicators were FEV<sub>1</sub>/FVC and FEV<sub>1</sub>%Pred.

Clinical symptom and physical sign: Recorded the shortness of breath, cough, expectoration, asthma, fever, pharyngalgia, turbid nasal discharge, coated tongue and pulse condition before and after the therapy.

### Statistical analysis

SPSS22. 0 statistical software was used for statistics and analysis. The measurement data were expressed in  $\bar{x} \pm s$ , the comparison between multiple groups was analyzed by one-way variance, and the comparison between two groups was tested by t.

## RESULTS

### Comparison of clinical curative effects between two groups

The treatment group was superior to the control group on the clinical control rate and efficiency ( $P < 0.05$ ), suggesting that the treatment group is superior to the control group on the overall efficiency. Refer to Table 1.

Table 1  
Comparison of Clinical Efficacy Rate between Two Groups [n (%)]

Group	n	Clinical control	Conspicuous effect	Effective	Ineffective	Total effective rate
Observation group	40	5(12.5) *	30(75.0) *	3(7.5) *	2(5.0)	38(95.00)
Control group	40	3(7.5)	15(37.5)	10(25.0)	12(32.5)	34(87.5)

Notes: \* $P < 0.05$  compared with the normal group

### Symptom comparison between two groups

The comparison of the symptom, physical sign and total symptom scores of symptoms between two groups of patients showed the difference ( $P <$

0.05) before and after treatment, as shown in Table 2.

**Table 2**  
**Comparison of Main Clinical Symptom and Sign score before and after the Treatment between Two Groups**

Primary symptoms	Observation group		Control group	
	Before treatment	After treatment	Before treatment	After treatment
Cough	2.35±0.75	0.54±0.76	3.31±0.83	0.75±0.73
Expectoration	2.34±0.29	0.62±0.63	2.42±0.32	0.85±0.66
Asthma	2.00±0.81	0.30±0.29	2.03±0.60	0.60±0.51
Chest distress	1.93±0.74	0.47±0.26	1.88±0.69	0.88±0.53
Wheezing rale	1.62±0.45	0.34±0.43	1.54±0.73	0.36±0.45
Total score	13.45±2.29	3.32±2.02*	12.88±1.98	5.44±2.25

Notes: Compared with the control group, \* \*P>0.05

### Comparison of Hematological Indexes between Two Groups

group on the improvement of serum inflammatory indexes (P<0.05), as shown in the table 3.

The treatment group was better than the control

**Table 3**

Group	Number of cases	Time	SAA (mg/L)	PCT (ug/L)	IL-8(ng/L)	TNF-a(ng/L)
Observation group	40	Before treatment	145.23±42.60	0.59±0.18	47.12±7.30	51.86±11.03
		After treatment	28.89±6.23*	0.18±0.04*	12.48±2.05*	15.14±1.29*
Control group	40	Before treatment	144.98±44.89	0.58±0.05	45.24±8.16	50.39±10.46
		After treatment	46.23±8.48	0.43±0.14	19.58±3.89	24.25±5.38

Notes: Compared with the control group, \* \*P>0.05

### Comparison of blood gas analysis indexes between two groups

group on the improvement of PaCO<sub>2</sub> and PaO<sub>2</sub> (P<0.05), as shown in the table 4.

The treatment group was better than the control

**Table 4**

### Comparison of the Serum Analysis before and after Treatment between Two Groups

Item	Group	Before treatment	After treatment
PaCO <sub>2</sub>	Observation group	55.96±15.63	41.23±7.54*
	Control group	56.56±14.54	48.08±9.99
PaO <sub>2</sub>	Observation group	67.34±14.22	73.78±12.45*
	Control group	67.89±13.08	72.59±13.12

Notes: Compared with the control group, \* \*P>0.05

## DISCUSSION

Chronic Obstructive Pulmonary Disease (COPD) is the common disease of the respiratory system, is the main reason to cause the sudden cardiac arrest and lead to the deterioration of lung function and the respiratory failure and direct lung infection. The death rate and prognosis of the chronic obstructive pulmonary disease are more important. According to the clinical symptom, it belongs to the type of "lung distension", "cough" and "asthma" in TCM. This disease belongs to the mixture of deficiency syndrome and deficiency and excess, and the deficiency and excess and falsehood<sup>3</sup>. The deficiency of lung, spleen and kidney are main reasons. In the disease process, it may form the mucosa, phlegm and retained fluid, fever, fatigue and other pathological products. The respiratory tract infection is the most common reason to cause the acute attack of pulmonary distention. The clinical symptom is fever, breath,

cough, yellow sputum and yellow tongue coating. Hence, the syndrome of external cold and internal fluid is most common. The pathogenesis key is "syndrome of external cold and internal fluid" and the method to warm and resolve phlegm and fluid retention and moisten lung for removing phlegm has the significant impact on the clinical works<sup>4</sup>. The western medicine is mainly based on the bronchodilator, antibiotics and hormone, and the long-term therapy would inevitably cause many side effects, so it has become the hot topic in the medical field to explore effective and safe treatment plans and drugs. The long-term clinical practice and extensive experimental research show that the traditional classical prescription could improve the curative effect and shorten the course of treatment. It is the essence accumulated from the much experience. Acute exacerbation promotes deterioration in COPD. With the development of COPD, it may cause the severe complications, such

as lung, heart failure, respiratory failure and pulmonary encephalopathy. Generally, COPD's symptoms in the acute exacerbation include the polypnea or exacerbation, cough, increasing saliva and fever <sup>5</sup>. With the work of acute exacerbation and lack of effective drugs for preventing and treating the virus infection in the clinic, the virus infection would damage the epithelial cells of bronchial mucosa and cause the low immune function. Compared with the patients caused by bacterial infection, the patients with acute aggravation caused by upper respiratory virus infection have more severe symptoms, long-term disease and they are easy to relapse. The early stage of diseases corresponds to the respiratory tract infection caused by common bacteria and is easy to lead to clinical abuse of antibiotics. The pathogen usually causes many respiratory diseases. In contrast, the same respiratory infectious disease may be caused by many reasons. Simultaneous and frequent mixed infection of pathogens <sup>6</sup>. The clinicians shall choose the reasonable treatment method and reduce the unreasonable use of the antibacterial agent. Whether it is antigen or antibody positive, it is of great significance to control the use of clinical experience drugs. The recent research showed that the virus could release various inflammatory agents. Inflammatory factor after infecting the respiratory tract. These inflammatory mediums can chemically aggregate inflammatory cells, mediate the occurrence of inflammatory reactions and the following immune response, so as to induce AECOPD and participate in the breath healing process. Compared with the acute exacerbation patients caused by the bacterial infection, after the virus infection, the neutrophil granulocyte and eosinophilic granulocyte increase in the saliva muscle of acute exacerbation patients. This virus infects the body and damage the non-specific immune system and specific immune system <sup>7</sup>. At the same time, due to the bacteria's adhesion and reinforcement on cells, the above mechanism may have severe results.

TCM thinks that COPD belongs to the scope of "lung distension". The syndrome of external cold and internal fluid in this research is its pathological basis. However, the cold pathogen is more severe in winter and the patient's body function is poor, and the exogenous pathogenic qi lasts long. Due to cough for a long time, the patients' lung, spleen and kidney function are improper and the water

distribution is abnormal. QinglongDingchuan Decoction was based on the Xiaoqinglong decoction and was used to treat the lung distension in the acute exacerbation period and the key pathogenesis of the disease was the syndrome of external cold and internal fluid. The therapy was to warm lung and resolve fluid and eliminate pathogens by phlegm elimination and purgation, respectively. The prescription was 6g of honey-fried HERBA EPHEDRAE, 15g cassia twig, 15g rhizomazingiberis, 3g asarum, 10g ginger processed pinellia, 10g honey-fried licorice root, 15g white peony, 10g schisandra chinensis, 6g root of fangji, 10g Chinese prickly ash, 15g semen lepidii (wrap-boiling), 6g rheum officinale (decocted later), 10g almond, 6g cicada slough and 30g amethyst (decocted earlier). Nongbenfang granule was used to prepare 300ml decoction and it was taken separately in the morning and evening. The syndrome of external cold and internal fluid in the acute exacerbation period: Cough with dyspnea without lying down, shortness of breath and expectoration with watery white sputum, large amount and frothy feature, chest swelling; Dry mouth with no desire for drinking, dark complexion or edema face and limbs; fat tongue, dim tongue texture, white and smooth coated tongue, floating pulse. Therapy: warm lung and resolve fluid and eliminate pathogens by phlegm elimination and purgation. Prescription: QinglongDingchuan Decoction.

Xiaoqinglong decoction is the main prescription of typhoid fever, as shown in the ancient medical book: "For the typhoid fever, the surface has unknown sign, but there is pathogenic water stagnating in the epigastrium, with the retch and fever for cough. There is thirstiness or dysentery or choke or difficult urination. There is less abdominal fullness or asthma. The Xiaoqinglong decoction is the main prescription"; "For the typhoid fever, there is pathogenic water stagnating in the epigastrium. It has the cough and mild asthma, with fever and no thirstiness. If the patient is thirsty after taking the decoction, to treat the typhoid fever, the Xiaoqinglong decoction is the main prescription". Used to treat the cold and syndrome of cold fluid retained in lung. Its etiology and pathogenesis are patient's body is weak and unable to distribute water. At the beginning, the patient's cold drink stagnates and has the wind pathogen. It could be seen that the patient's lung qi

is stagnant and cold drink invades. Combined with the rigor, the patient has no perspiration and pain. The cold easily damages Yin and Yang. If the cold-pathogen is heavy, it would attack the surface. If the cold-pathogen cannot reach the outside, the skin feels cold. If the cold drink is stagnant, the pathogen is prevented but not eliminated and they compete with each other, it may lack the body yang qi<sup>8</sup>.

Plain Question · Another Matters of Meridians said: "After the water enters the stomach, it will flow and disperse its essence and Qi, which will be transported up to the spleen for subtle distribution and transfer. Then, it would be transferred to the lungs and they are mainly used adjusting the water ways. It will be transported down to the bladder. In this way, the water essence is distributed in the skin and hair, and infused in the meridians of the five internal organs. It can also be combined with the changes of the four seasons of cold and heat and the changes of the five internal organs' Yin and Yang. Making appropriate adjustment, this is the normal physiological phenomenon of meridians". In the distribution of body fluid, the organs, including the liver, spleen, lung, kidney and triple energizer play an important role. With the rise and fall of Yang qi, it could be seen everywhere, or it may be blocked in the lung, stopped in the stomach, covered in the heart, or pressed in the liver, or moved in the kidney or it may pass the meridian so as to lead to the occurrence of diseases. Symptoms The external cold may induce the internal drinking and it severely affects the lung. The lung loses the dispersion and elimination and the lung qi returns with asthma and cough. The mucosa has much clear and thin white color. The cold drinking disturbs the stomach and the stomach is stagnated. The human body's fluid distribution is abnormal, so the patient is thirsty and does not want to drink water. There is a lot of water in the intestines. Turbidity could not be identified and the leakage is seen. Then, there's the cold air that's going to suffocate, then the hot air, then the next cold breath. If the patient stops to feel the drinking pathogen and has poor gasification, he/she would urinate not to be smooth, diarrhea frequency is less; If the patient drinks much water and it is full in the skin surface, the exudation under the body skin will become thicker and thicker, so the method to warm and resolve phlegm and fluid retention is adopted to release the lung distension. The oral

administration shall follow the classical prescription of Zhang Zhongjing. In the prescription, the ephedra and cassia twig shall be the main components. The ephedra is used to diffuse the lung and release the asthma and swelling; the cassia twig is used to resolve fluid and make the water smooth; pinelliaternata was used to moisten the lung by drinking the liquor and help the ephedra and cassia twig to release the exogenous pathogens. It could not only protect Yang qi and Yin qi, but prevent the drug drying. Hence, it could nourish human body and blood and match the liquorice and Yin flavor to cover Qi. Pinelliaternata is characterized by dryness, dampness and sparse mucus, and reduces the pressure on the stomach. The jujube is beneficial for qi deficiency and stroke and mix all herbs into one.

In addition to fever, the lung distension can combine the chest fullness, no sweat, body pain, chest pain. The cold easily damage Yin and Yang. When the wind is much colder, it would attack the surface. If the pathogen cannot reach the outside, the body feels cold. If the pathogen is heavy, it will stagnate. If the battle is conducted between the right and evil, it will be very hot. If the patient has the cold, it would be pretty cold and erode the outside. If the lung is blocked, there would be no sweat. According to Zhang Zhongjing, if the water stays in the stomach, spleen will lose the function to adjust and transport the body fluid. The spread is attributed to the essence of lung and spleen to adjust the water channel and transport the water to the urinary bladder. This is why the deficiency of Yin and Yang would lead to the lack of water liquid in the body. In the metabolic process, the lung, spleen, kidney, triple energizer and liver play an important role. If there is any problem, the water metabolism would be abnormal and stopped. If the sputum is retained in the body or the rise and fall of gas are abnormal, or the water is blocked in the lung, filled in the stomach or covered by openings, or suppressed in the kidney and moved in the liver or it causes the many diseases by meridians and collaterals, the symptoms are different. The external cold may induce the internal drinking stop, the bad drinking would impact the lung. The lung loses the dispersion and elimination and the lung qi returns with asthma and cough. The mucosa has much clear and thin white sputum. The cold drinking disturbs the stomach and the human body's fluid distribution is abnormal, so the patient is thirsty

and does not want to drink water. There is a lot of water in the intestines. Turbidity is not scattered. If the diet stops, it would be severe and the gasification would be poor, so urination is not smooth, and even rarely abdominal flushing is seen. If the patient drinks water and it floats on your skin, he/she will breathe and feel the weight<sup>14</sup>.

In the research, the observation group was better than the control group on the clinical control rate and efficiency, suggesting that the treatment group was superior to the control group on the overall efficiency. The comparison of the symptom, physical sign and total symptom scores of symptoms between two groups of patients showed the difference before and after treatment. The treatment group was better than the control group on the improvement of the serum inflammatory factor. The treatment group was better than the control group on the improvement of blood gas analysis PaCO<sub>2</sub> and PaO<sub>2</sub>. The above difference had the statistical significance ( $P < 0.05$ ). It indicates that the QinglongDingchuan Decoction can restrain the histamine and other substances that participate in the inflammatory reaction of organism, correct the situation of electrolyte imbalance, so as to optimize the control of disease inflammatory reaction. The QinglongDingchuan Decoction can effectively release the inflammatory reaction symptom of the patient's lung, control the infiltration of the COPD patient's lung and fine and terminal bronchitis cells, the inflammatory secretions from blocking the bronchus. It could alleviate the symptoms of ventilatory and expiratory disorders. The TCM mechanism of COPD is affected by the wind-cold and exogenous pathogen, and the vital qi cannot prevent the attack of pathogen qi. Abnormality of sthenia and asthenias leads to the phlegm turbidity and blood stasis, and blocks the lung breath. According to the opinions of TCM classical theories and syndrome differentiation and treatment, the treatment thoughts of COPD mainly include warming and resolving phlegm and fluid retention, dispelling cold and eliminating pathogenic factors, dispersing and warming lungs, resolving phlegm and make ventilation. The conventional western medicine treatment mainly focuses on the fixed anti-inflammatory and antiviral method<sup>7</sup>. From the point of TCM theories, the author observed that the QinglongDingchuan Decoction based on Xiaoqinglong decoction was given for treatment for

the observation group after the conventional western medicine was given for controlling the symptom. On the basis of improving the patient's clinical symptom, TCM fundamentally blocked the main cause of COPD with the effect of warming the lung and resolving fluid<sup>9</sup>. The comparison result of this research showed: The observation group patients with the syndrome of cold fluid retained in lung were treated by warming lung and resolving fluid. The observation group was better than the control group on the clinical control rate and efficiency, suggesting that the treatment group was superior to the control group on the overall efficiency ( $P < 0.05$ ) and the QinglongDingchuan Decoction can accelerate the recovery of clinical symptoms and improve the living quality effectively; At the same time, the total effective rate of clinical treatment in the observation group was as high as 96%, which was significantly higher than 78% of the control group ( $P < 0.05$ ), suggesting that the addition and subtraction prescription of Xiaoqinglong decoction had a better and reliable overall comprehensive curative effect. This result not only confirmed the clinical comparative advantage of QinglongDingchuan Decoction for COPD patients in acute exacerbation stage, but also was consistent with the similar reports at home and abroad<sup>10</sup>. The comparison result of this research showed: The disappearance time of cough, expectoration, weakness and the breath of the observation group patients, who were given with the addition and subtraction treatment of Xiaoqinglong decoction, was significantly earlier than the control group treated by the traditional western medicine ( $P < 0.05$ ), suggesting that the QinglongDingchuan Decoction can accelerate the recovery of clinical symptoms and improve the living quality effectively; At the same time, the total effective rate of clinical treatment in the observation group was as high as 97%, which was significantly higher than 80% of the control group ( $P < 0.05$ ), suggesting that the addition and subtraction treatment of Xiaoqinglong decoction had a better and reliable overall comprehensive curative effect<sup>11</sup>. By analyzing the advantages of this prescription, honey-fried HERBA EPHEDRAE could make lung qi clear; the cassia twig could relieve exterior syndrome and dispel the wind cold; rhizomaPinellinaePraeparata may eliminate dampness and resolve phlegm; peony root has a better effect on weak constitution;



rhizomazingiberis and Chinese prickly ash play the role of warming spleen and stomach for dispelling cold; asarum could dispel the wind and cold; schisandra chinensis has a good effect of astringing the lung to stop cough; honey-fried licorice root could tonify qi and activate Yang and the combination of various TCMs has the effect of relieving exterior syndrome and dispelling the wind cold, warming lung and resolving fluid and astringing the lung to stop cough; addition of semen lepidii could purge the lung and depress qi, make expectoration easy and relieve asthma, alleviate water retention and detumescence, clear away heat and detoxification, disperse and eliminate inflammation; rheum officinale could clear away heat and purge pathogenic fire, prevent oneself, replenish qi and firm the surface, and remove moisture; cicada slough could remove the wind pathogen and amethyst can dispel the pathogen qi in the lung and replenish the deficiency. The conventional western medicine treatment mainly focuses on the fixed anti-inflammatory and antiviral method<sup>12</sup>. From the point of TCM theories, the author observed that the Xiaoqinglong decoction was given to observation group patients after the conventional western medicine was given to controlling the symptom. On the basis of improving the patient's clinical symptom, TCM fundamentally blocked the main cause of COPD through a variety of combinations of TCMs to maximize the effect of dispelling cold and removing pathogenic factors<sup>13</sup>. This result not only confirmed the clinical comparative advantage of Xiaoqinglong decoction for COPD patients in acute exacerbation stage, but also was consistent with the similar reports at home and abroad.

## CONCLUSION

The QinglongDingchuan Decoction by addition and subtraction of Xiaoqinglong decoction could better improve the clinical symptom, physical sign and blood gas analysis indexes to improve the overall efficiency. It is better for the acute exacerbation of chronic obstructive pulmonary disease (AECOPD) in treatment.

## REFERENCES

1. Rycroft CE, Heyes A, Lanza L, Becker K. Epidemiology of chronic obstructive pulmonary disease: a literature review. *International journal of chronic obstructive pulmonary disease*. 2012;7:457-494.

2. Cazzola M, Cavalli F, Usmani OS, Rogliani P. Advances in pulmonary drug delivery devices for the treatment of chronic obstructive pulmonary disease. *Expert opinion on drug delivery*. 2020;17(5):635-646.
3. Albertson TE, Louie S, Chan AL. The diagnosis and treatment of elderly patients with acute exacerbation of chronic obstructive pulmonary disease and chronic bronchitis. *Journal of the American Geriatrics Society*. 2010;58(3):570-579.
4. Cai B-q, Cai S-x, Chen R-c, et al. Expert consensus on acute exacerbation of chronic obstructive pulmonary disease in the People's Republic of China. *International journal of chronic obstructive pulmonary disease*. 2014;9:381.
5. ZHANG H, HU Y-p. Acupuncture Clinical Application Overview in Chronic Obstructive Pulmonary Disease. *Journal of Jiangxi University of Traditional Chinese Medicine*. 2013:04.
6. ZHU Y, ZHANG W. Exploration of Treating Chronic Obstructive Pulmonary Diseases from Lung, Spleen and Kidney. *Shanxi Journal of Traditional Chinese Medicine*. 2015:07.
7. Gao Z, Jing J, Liu Y. Xiaoqinglong decoction (a traditional Chinese medicine) combined conventional treatment for acute exacerbation of chronic obstructive pulmonary disease: a systematic review and meta-analysis. *Medicine*. 2020;99(14).
8. Zheng J-P, Kang J, Huang S-G, et al. Effect of carbocisteine on acute exacerbation of chronic obstructive pulmonary disease (PEACE Study): a randomised placebo-controlled study. *The Lancet*. 2008;371(9629):2013-2018.
9. Xie S, Yan P, Yao C, et al. Efficacy and safety of Xuebijing injection and its influence on immunomodulation in acute exacerbations of chronic obstructive pulmonary disease: study protocol for a randomized controlled trial. *Trials*. 2019;20(1):1-11.
10. Aboulwafa MM, Youssef FS, Gad HA, Altyar AE, Al-Azizi MM, Ashour ML. A Comprehensive insight on the health benefits and phytoconstituents of camellia sinensis and recent approaches for its quality control. *Antioxidants*. 2019;8(10):455.
11. Chen H-P, Xuan G, Zeng Q-L. Progress in The Treatment of Chronic Obstructive Pulmonary Diseases with Traditional Chinese Medicine. *Global Journal of Medicine*. 2020;2(1):5-13.
12. Li J-S. International clinical practice guideline of chinese medicine: Chronic obstructive pulmonary disease. *World Journal of Traditional Chinese Medicine*. 2020;6(1):39.
13. Lin T-H, Chen S-I, Su Y-C, Lin M-C, Lin H-J, Huang S-T. Conventional western treatment combined with Chinese herbal medicine alleviates the progressive risk of lung cancer in patients with chronic obstructive pulmonary disease: A nationwide retrospective cohort study. *Frontiers in pharmacology*. 2019; 10:987.
14. Farahaninia M, Hoseinabadi TS, Raznahan R, Haghani S. The teach-back effect on self-efficacy in patients with type 2 diabetes. *Rev Diabet Stud*. 2020;16(1):46-50. doi:10.1900/RDS.2020.16.46