Guidelines for Chinese Medicine Rehabilitation of Chronic Obstructive Pulmonary Disease

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Abstract

Chronic obstructive pulmonary disease (COPD) is a common, chronic, frequently occurring, and difficult disease of the respiratory system and is a huge disease burden. Pulmonary rehabilitation is an important part of clinical treatment. Chinese medicine lung rehabilitation (CMLR), which is based on Chinese medicine theory and practice, is a comprehensive rehabilitation measure that can prevent and treat pulmonary diseases and preserve physical and mental functions. Its aim is to promote the return of patients to society as soon as possible. To better guide the clinical practice of COPD rehabilitation, the Specialty Committee of Pulmonary Rehabilitation of World Federation of Chinese Medicine Societies established a panel for formulating guidelines, systematically retrieved domestic and foreign literature, performed systematic evaluation after expert consultation and on-site discussion, and finally, formed the guidelines in accordance with the development standard of international evidence-based guidelines. The guideline has seven parts, which are the preface, introduction, scope, normative references, terms and definitions, types of disease syndromes, diseases assessment, CMLR techniques, and annex. The techniques of CMLR include 11 techniques in seven species, such as Simplified Taijiquan, Baduanjin, and Liuzijue. The guideline defines the technical points (time, frequency, course, etc.), optimal applicable population, use of drugs, common acupoints, operation methods, and so on for each technique. The release of the guidelines is helpful to improve the rehabilitation technique standardization and to improve the curative effect and level of rehabilitation.

Keywords: Chronic obstructive pulmonary disease, Chinese medicine rehabilitation, guidelines, technique

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a common, chronic, frequently occurring, and difficult disease of the respiratory system and is a huge disease burden. Hence, it has been given more attention in the recent years. The number of COPD patients in the world is about 384 million, and the disease is ranked as the fourth leading cause of death in the world, and it will rise to the third place in 2020 according to the WHO estimation. Every year, 3 million people die of COPD worldwide,[1-3] and an estimated 4.5 million people will die from COPD-related diseases by 2030.[4,5] The harm of death and disability of COPD is becoming more and more serious all over the world. In China, COPD is the third leading cause of death, and there is a total of about 100 million patients.[6,7] In 2016, the number of COPD deaths in China (876,300) accounted for 29.86% of the total number of COPD deaths in the world, making it the third leading cause of death in China, according to the global disease burden data.[8] A survey of mortality, morbidity, and risk factors in China and its provinces published in the Lancet in 2019 shows that according to the ranking of disability-adjusted life years, COPD has ranked third in diseases with the heaviest health burden among Chinese residents. It was the third leading cause of death and loss of life in 2017.[9] The preventive and treatment measures include prevention, early diagnosis, and standardized treatment (drug therapy, exercise therapy, psychological intervention, pulmonary rehabilitation [PR], etc.). PR is an important part of the process. Chinese medicine lung rehabilitation (CMLR), which is based on Chinese medicine theory and practice, is a comprehensive rehabilitation measure that can prevent and treat pulmonary diseases and preserve physical and mental functions. Therefore, it is of great significance to study COPD rehabilitation techniques and guidelines in China.

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functions. Its aim is to promote the return of patients to society as soon as possible. Rehabilitation has been widely used in pulmonary diseases and has achieved certain clinical effects; however, at the same time, there are also some problems, such as lack of high-quality evidence-based clinical research and lack of PR guidelines of Chinese medicine. Therefore, to better guide the clinical practice of COPD rehabilitation with Chinese medicine, the Specialty Committee of World Federation of Chinese Medicine Societies (WFCMS) made the guideline after systematically retrieving domestic and foreign literature, performing systematic evaluation, and seeking expert consultation and on-site discussion, in accordance with the development standard of international evidence-based guideline. The guideline is not a standard or norm of medical behavior, but a declarative document formulated based on the existing research evidence and specific methods. In clinical practice, practitioners can give patients’ individualized diagnosis and treatment in accordance with this guideline and their specific conditions.

Scope
The guideline specified the basic contents involving terms and definitions of COPD rehabilitation with Chinese medicine, PR with western medicines, types of disease syndromes, and the basic contents of CMLR. The guideline is applicable to the clinical practice of CMLR on COPD patients by doctors, technicians, and nurses in the respiratory, rehabilitation, and related departments.

Normative References
The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest version, including all amendments, applies to this document.

• WS 318-2010, Diagnosis Criteria for Chronic Obstructive Pulmonary Disease[11]
• Chinese terms in traditional Chinese medicine (2010 Edition), China National Committee for Terms in Sciences and Technologies[12]
• Chinese Medicine Syndrome Diagnostic Criteria of Chronic Obstructive Pulmonary Disease (2011 Edition), the Pulmonary Disease Specialized Committee in the Internal Medicine Branch of China Association of Chinese Medicine[13]
• Qigong for Health Maintenance (Yi Jin Jing, Wu Qin Xi, Liu zijue, and Baduanjin), Management Center of Qigong for Health Maintenance, the State Administration of Sports of China[14]
• ATS/ERS Task Force on Pulmonary Rehabilitation, an official American Thoracic Society/European Respiratory Society statement: key concepts and advances in PR (in 2013).[15]

Terms and Definitions
The following terms and definitions apply to the guidelines.

Chronic obstructive pulmonary disease
COPD is characterized by airflow limitation which can be prevented and treated. The airflow limitation is incompletely reversible and develops progressively, which is related to the abnormal inflammatory reactions of the lungs to harmful gases, such as cigarette smoke, or harmful particles.[11]

Note: It mainly affects the lung but can also cause systemic adverse reactions of the whole body (or outside the lung).

Lung distension disease
The recurrent attacks and delayed healing of lung diseases, such as cough, wheezing, and dyspnea, can cause lung qi distension, affecting its descent and astringency, thus leading to symptoms of lung diseases, such as cough, expectoration, shortness of breath, chest distension and stuffiness, and even difficulty breathing and panting.

Chinese medicine lung rehabilitation
CMLR refers to comprehensive rehabilitation methods guided by the Chinese medicine theory. It follows the pulmonary disease characteristics and uses the rehabilitation techniques and methods in Chinese medicine to prevent and treat pulmonary diseases and protect physical and mental functions so as to enable patients to return to society as soon as possible.

Note 1: The CMLR focuses on the basic views, such as the concept of holism, syndrome differentiation, and function rehabilitation and prevention. It combines prevention with rehabilitation, internal treatment with external treatment, and drug therapy with diet therapy.[16]

Note 2: The CMLR includes, but is not limited to, the respiratory diseases (such as COPD) in western medicine. It also covers the rehabilitation of some nasal diseases (such as chronic rhinitis). By improving the clinical symptoms, lung functions, sports endurance, and life quality, it helps patients restore work–life ability as far as possible so as to return to society.

Note 3: The methods of CMLR include not only the traditional ones, such as Chinese herb therapy, acupuncture and moxibustion, and Daoyin therapy, but also the new techniques created by the integration of the concepts and methods of western medicine lung rehabilitation technology, such as catgut embedment and injection in acupoint. The methods for lung rehabilitation can be used alone or in combination.

Pulmonary rehabilitation in western medicine
PR refers to a comprehensive intervention method. Based on the overall assessment of patients, it makes individualized regimens, which include, but are not limited to, exercise training, education, and behavioral changes. The aim is to improve the physiological and psychological status of patients with chronic respiratory diseases and to encourage patients to adhere to the long-term regimen to promote health.[15]
Note 1: The PR, in a broad sense, includes sports and respiratory muscle training, long-term oxygen therapy, nutritional therapy, thoracic physical exercise therapy, and relaxation therapy. However, in a narrow sense, it contains exercise training, respiratory muscle training, health education, psychological and behavioral interventions, and evaluation of their effects. Exercise training is the cornerstone of the PR program, and lower limb exercise training is the key and core.

Note 2: The PR multidisciplinary team should include doctors, nurses, respiratory therapists, physiotherapists, occupational therapists, psychologists, sports specialists, and other professionals.

Note 3: The development of exercise prescription of PR should consider the exercise intensity, frequency, and duration.

Note 4: The PR can achieve obvious effects after 6–12 weeks, but the clinical benefit will gradually decrease after the rehabilitation training stops. Long-term lung rehabilitation can yield longer and sustained benefits.[17]

Note 5: The rehabilitation effect evaluation is mostly performed by adopting various evaluation methods and indicators, such as cardiopulmonary exercise test and 6-min walking test for exercise performance evaluation, Saint George’s Respiratory Questionnaire and general health status questionnaire for life quality evaluation, and tests for improving lung functions and clinical symptoms.

Types of Diseases Syndromes

“Healthy qi deficiency and impairment accumulation” is the main pathogenesis of COPD (lung distension disease). There are three common classifications and ten total syndromes encountered in the clinics. The types include deficiency syndromes, excess syndromes, and another syndrome. The types of deficiency syndromes include lung qi deficiency, lung–spleen qi deficiency, lung–kidney qi deficiency, and both qi and yin deficiency of the lung and kidney; the types of excess syndromes include wind–cold attacking lung, exterior cold with interior fluid retention, phlegm–heat obstructing lung, phlegm–dampness obstructing lung, and heart spirit confused by phlegm; while another type of syndrome is blood stasis. Among the common clinical syndromes, they can occur alone or in combination, such as lung–kidney qi deficiency combined with a syndrome of phlegm–heat obstructing lung, or lung–spleen qi deficiency combined with phlegm–dampness obstructing lung.[13,18]

Diseases Assessment

Before the implementation of CMLR, patients should be comprehensively assessed by taking their medical history, the incidence of this time, daily lifestyle, and mode of exercise, as well as 6-min walking distance, respiratory muscle function, cardiopulmonary exercise load, quality of life, exercise-related functions, nutritional status, and cognitive psychology. Then, suitable methods that patients can tolerate are selected for formulating an exercise prescription.

Meanwhile, through four examinations, namely, inspection, listening and smelling, inquiry, and pulse taking and palpation, the nature of the disease, i.e., deficiency or excess, cold or heat, is made clear. Afterward, the rehabilitation is assessed. The method that is easy to accept and learn, is convenient to implement, and has the least risk is selected so as to determine the methods of CMLR.

Guidelines Development Method

This guideline followed the WHO specification and principle for guideline development[19] and is based on the report item (RIGHT) of the Health Care Practice Guide.[20] The development steps are briefly described below.

Registration

This guideline has been registered in both Chinese and English on the International Practice Guide Registration Platform (IPGRP-2018CN033), which is available in http://www.guidelines.registry.cn.

Guideline users and target groups

The guideline is applicable to the clinical practice of CMLR on COPD patients in stable condition by doctors, technicians, and nurses in the respiratory, rehabilitation, and related departments.

Working group

We set up a multidisciplinary working group, including experts in western medicine, Chinese medicine, rehabilitation, acupuncture, sports, epidemiology, and evidence-based medicine, doctors, COPD patients, technicians, and nurses specializing in PR. Patient participation in the guideline development process is reflected in two aspects – one is being involved in the selection of clinical problems, while the other is in giving recommendations. The participants were divided into five groups, namely, the guiding expert group, the methodological expert group, the clinical expert group, the technical standard validation group, and the systematic review group.

The fund and conflict of interest

The fund

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Conflict of interest

All members signed a declaration of conflict of interest and carried out the preparation of the guide completely independently, affirming that there are no commercial, professional, or other conflicts of interest relevant to the subject matter of this guideline.

Selection and determination of clinical problems

Clinical problems and outcomes were collected through a systematic search of domestic and foreign literature and...
guidelines. Then, a questionnaire survey was conducted on the Specialty Committee of Pulmonary Rehabilitation (SCPR) of the WFCMS (about 100 physicians). Meanwhile, patients also participated in the selection of clinical problems. Based on the survey results, 11 clinical problems and 14 outcomes were included.

Evidence retrieval and quality evaluation
Clinical problems were deconstructed, and retrieval strategies were determined according to the “Population, Intervention, Control, and Outcome (PICO)” Literature was retrieved through PubMed, Embase, Cochrane library, CNKI, VIP, CBM, and WANFAN DATA databases until March 1, 2017. AMSTAR tool[21] was used to evaluate the quality of the methodology in systematic reviews and meta-analyses, and risk of bias tool[22] was used to evaluate the quality of methodology in randomized controlled studies. Finally, this guideline fully evaluates the quality of 124 relevant articles.

Level of evidence and recommendation
This guideline adopted the grading of recommendations, assessment development, and evaluation (GRADE) system[23] for grading the quality of evidence. The recommendation strength was preliminarily formulated according to the comprehensive evidence formed by the literature evidence, respiratory monographs, and standardized documents.

Recommendation formation
Two rounds of surveys were conducted based on the comprehensive evidence and the strength of preliminary recommendation opinions, and the survey results were sorted out. In addition, COPD also was involved in the recommendation formation. Face-to-face consensus meeting was held, and the final recommendation opinions and recommendation strength were voted on by experts. This guideline finally formed 39 recommendations, among which six were strongly recommended, 31 were weakly recommended, and two were weakly not recommended.

Publishing and updating
The first draft of the guidelines was approved by the technical standard validation group and the board of SCPR by voting and then was sent to the international standards department for review and revision for release.

According to the requirements of the WFCMS, this guideline would be updated in 3–5 years.

Chinese Medicine Lung Rehabilitation Methods

Simplified Taijiquan
1. The Simplified Taijiquan was compiled by the Taijiquan experts of the State Administration of Sports of China in 1956. It extracts the essence of Taijiquan and is arranged into 24 movements, including Zuo You Yema Fenzong (parting a wild horse’s mane), Baihe Liangchi (white crane spreads its wings), and Zuo You Louxi Aobu (brush knee and step forward). The movements are soft and focused on using the mind to guide breathing and coordinating with the movement of the whole body. It is characterized by warding off (Peng), rolling back (Lv), pressing (Ji), and pushing (An)[24]
2. It is suitable for COPD patients in stable condition and can increase the 6-min walking distance (strong recommendation for use, level of evidence: B) and improve lung function, FEV₁, (weak recommendation for use, level of evidence: B)[25]
3. Each rehabilitation session lasts 60 minutes
4. The rehabilitation exercise should be performed 5–7 times a week
5. The rehabilitation duration should be more than 3 months. It will achieve better effects with a longer duration.

Baduanjin
1. It includes eight movements, namely, Shuangshou Tuotian Li Sanjiao (two hands supporting the sky to regulate triple energizer), Zuoyou Kaigong Si Shediao (drawing bows left and right), Tiola Piwei Xu Danju (single arm pushing up to regulate spleen and stomach), Wulao Qishang Wang Houqiao (turning head to look left and right backward to relieve various diseases), Yaotou Baiwei Qu Xinhuo (pointing tailbone left and right to clear heart-fire), Liangshou Panzu Gu Shenyaos (both hands reaching the ground to strengthen kidney and waist), Cuanquan Numu Zeng Liqi (punching with angry eyes to generate physical energy), and Beihou Qidian Baibing Xiao (bouncing on the toes to get rid of hundreds of diseases). It emphasizes on the gentle, slow, and coherent movement, as well as the combination of tightness and softness, dynamic and static status, and the harmony between spirit and body. When doing the exercise, not only the body movement but also the qi movement is acquired. When practicing, one should be fully relaxed no matter the body or the mind, and the movements should be correct and flexible. It focuses on both the movement and the thoughtless awareness during the process, which should be achieved step by step
2. It is suitable for COPD patients in stable conditions and can increase the 6-min walking distance (strong recommendation for use, level of evidence: C). It can also reduce the score of Saint George’s Respiratory Questionnaire (strong recommendation for use, level of evidence: C) and improve the quality of life. In addition, it can improve the lung function, FEV₁, FEV₁%, and FVC (weak recommendation for use, level of evidence: C)[26-45]
3. Each rehabilitation exercise lasts 30 minutes
4. The rehabilitation exercise should be performed more than 4 times a week
5. The rehabilitation duration should be more than 3 months. It will achieve better effects with a longer duration.

Liuzijue
1. It is an exercise of inhalation and exhalation that regulates qi and blood circulation of zang-fu organs and meridians and collaterals through different mouth forms with the
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The six healing sounds – “Si, He, Hu, Xu, Chui, and Xi.” The six healing sounds are related to lung, heart, spleen, liver, kidney, triple energizer, and other zang-fu organs and meridians and collaterals. When practicing, it follows the order of “Preparation Movement–Opening Posture–Xu Sound–He Sound–Hu Sound–Si Sound–Chui Sound–Xi Sound–Closing Posture.” There are a total of nine movements[14]

2. It is suitable for patients with COPD in stable condition and can increase the 6-min walking distance (weak recommendation for use, level of evidence: C). It can also reduce the score of Saint George’s Respiratory Questionnaire (strong recommendation for use, level of evidence: C) and improve the score of COPD Assessment Test (CAT) (strong recommendation for use, level of evidence: D) and the quality of life. It can reduce acute exacerbation (weak recommendation for use, level of evidence: C), improve the modified British Medical Research Council (mMRC) score (strong recommendation for use, level of evidence: D), and improve lung function, FEV₁% (weak recommendation for use, level of evidence: C)[46-54]

3. Exercise 6 times for each word, 30 minutes for each rehabilitation exercise

4. The rehabilitation exercise should be performed more than 5 times a week

5. The rehabilitation duration should be more than 3 months. It will achieve better effects with a longer duration.

**Acupoint application therapy**

**Traditional acupoint application**

1. Treatment of applying certain Chinese medicine on acupoint[55]

2. It is suitable for COPD patients in stable condition with deficiency syndrome and can increase the 6-min walking distance (weak recommendation for use, level of evidence: B), reduce the score of Saint George’s Respiratory Questionnaire (weak recommendation for use, level of evidence: C), and improve the quality of life. It can decrease acute exacerbation (weak recommendation for use, level of evidence: C) and improve the mMRC score (weak recommendation for use, level of evidence: C) and improve lung function, FEV₁%, FVC, and FEV₁ (weak recommendation for use, level of evidence: C)[56-76]

3. The medicine that can warm yang and replenish qi, dredge meridians and activate collaterals, open orifices and activate blood, and ventilate the lungs and relieve cough and dyspnea is the first choice for the paste, with the most commonly used medicine, such as *Herba Asari*, *Semen Sinapis*, *Radix Euphorbiae kansui*, and *Rhizoma Corydalis*

4. The acupoint for the application is selected according to the disease condition and syndrome differentiation, with Feishu (BL 13), Dingchuan (EX-B1), Shenshu (BL 23), Tiantu (CV 22), Dazhui (GV 14), and Tanzhong (CV 17) as the major ones. Matching points for different syndromes: for lung qi deficiency, Taiyuan (LU 9) and Zusanli (ST 36) are used; for lung–spleen qi deficiency, Taiyuan (LU 9) and Pishu (BL 20) are added; for lung–kidney qi deficiency, Taiyuan (LU 9) and Zusanli (ST 36) are added

5. The duration of application is determined by medicine stimulation, blisters, and skin reaction. Drugs with less irritation can be changed every 1–3 days, while those with strong stimulation should be changed every few minutes to few hours. The application mostly lasts for 4–6 h each time

6. The application is applied with an interval of 10 days

7. Application of three times for 1 month each is considered as one course of treatment

8. Pigmentation, flushing, mild itching and pain, mild redness and swelling, and mild blisters appearing after the application are all normal reactions, which are inconsequential to the treatment. However, if skin sensitization reactions, such as skin erythema, blisters, itching, and pain, are large and significant, the application should be stopped immediately and symptomatic treatment should be performed. When necessary, the hospital should be consulted.

**Acupoint application in summer to treat and prevent diseases easily occurred in winter based on Chinese medicine theory**

1. It refers to an external treatment that uses medicine application on specific acupoints of the human body in dog-days to treat and prevent diseases and is also known as “Sanfu Tie.”

2. It is suitable for COPD patients in stable condition with deficiency syndrome and can reduce the score of Saint George’s Respiratory Questionnaire (weak recommendation for use, level of evidence: C) and improve the quality of life. It can also decrease acute exacerbation (weak recommendation for use, level of evidence: C) and improve the mMRC score (weak recommendation for use, level of evidence: C)[77-108]

3. The basic drug prescription consists of *Semen Sinapis, Rhizoma Corydalis, Radix Euphorbiae kansui, Herba Asari, Rhizoma Zingiberis Recens*, and so on. *Artificial Moschus, Herba Ephedrae, Cortex Cinnamoni, and Fructus Foeniculi* are often added

4. Feishu (BL 13) is the basic applied acupoint, and Tanzhong (CV 17), Dazhui (GV 14), Dingchuan (EX-B1), and Gaohuang (BL 43) are often added. Xinshu (BL 15), Geshu (BL 17), Shenshu (BL 23), Pishu (BL 20), and other acupoints are used according to the syndrome differentiation

5. When performing application, the local area should first be disinfected with 75% ethanol or iodophor routinely. Then, the medicinal paste with a length of 1 cm and a height of 0.5 cm is taken. The medicine is applied at the acupoint before being fixed with a desensitized adhesive tape of 5 cm × 5 cm

6. It is applied in summer each year, the first day of the first,
middle, and last of the dog-days (Three 10-day periods of the hot season. If the middle dog-days are 20 days, then it is used with an interval of 10 days)
7. Each application lasts for 3–6 h
8. The application is performed with an interval of 7–10 days
9. Three years of continuous application is considered as a course of treatment. The efficacy can be enhanced with multiple courses.

**Shufei Tie (lung-regulating paste)**
1. On the basis of traditional acupoint application therapy technology, a new type of external application is formed by combining with the modern drug preparation technology. About 1.5 g lung-regulating medicinal paste is injected into the depression of the paste film, then it is applied on the acupoint. After that, it is pressed gently and evenly
2. It is suitable for COPD patients in stable condition with deficiency syndrome, and can improve the score of Saint George’s Respiratory Questionnaire and the quality of life (weak recommendation for use, level of evidence: B). It can also decrease acute exacerbation (weak recommendation for use, level of evidence: B), improve cough, expectoration, chest stuffiness, shortness of strength, fatigue, and other clinical symptoms (weak recommendation for use, level of evidence: B), and decrease the score of mMRC (weak recommendation for use, level of evidence: B)\(^{[109–112]}\)
3. The medicine used in the paste consists of *Semen Sinapis*, *Rhizoma Corydalis*, *Flos Genkwa*, and *Semen Zanthoxyli*, functioning for warming and inspiring lung qi, expelling phlegm and activating blood, and relieving cough and asthma
4. The acupoints used include Feishu (BL 13), Dazhui (GV 14), Gaohuang (BL 43), Tanzhong (CV 17), Dingchuan (EX-B1), and Tiantu (CV 22)
5. It is used for 6–8 h each time
6. The interval between two applications is 10 days
7. Five times is a course of treatment. It is applied on the 10\(^{th}\) day before the dog-days, the 1\(^{st}\), 10\(^{th}\), and 20\(^{th}\) day of the dog-days, and the 10\(^{th}\) day after the dog-days once
8. Mild redness, swelling, and blisters appearing after application are all normal reactions, which are inconsequential to the treatment. If serious skin erythema, blisters, and other phenomena occur, the medicine should be stopped immediately, and symptomatic treatment should be performed. For serious cases, the patients should be sent to the hospital immediately.

**Acupuncture**
1. It is a method of treating diseases by inserting needles into specific acupoints of the human body\(^{[113,114]}\)
2. It is suitable for COPD patients in stable condition and can increase the 6-min walking distance (weak recommendation for use, level of evidence: C), decrease acute exacerbation (weak recommendation for use, level of evidence: C), and improve lung function, FEV\(_1\)%, and FEV\(_1\)/FVC (weak recommendation for use, level of evidence: C)\(^{[111,115–131]}\)
3. Filiform needle or electric needle is recommended
4. The area for acupuncture is selected according to the condition of the disease. Tanzhong (CV 17), Guanyuan (CV 4), Dingchuan (EX-B1), Feishu (BL 13), Zusanli (ST 36), and Tianshu (BL 13) are often used. Matching points for different syndromes: for lung qi deficiency, Taiyuan (LU 9) is used; for lung–spleen qi deficiency, Pishu (BL 20) is added; for both qi and yin deficiency of the lung and kidney, Gaohuang (BL 43) and Taixi (KI 3) are added.
5. When manipulating needles, it is the best to obtain qi, generating soreness, numbness, and distension and heaviness in the local area of acupoint
6. The needles are retained for 20–30 min each time
7. The acupuncture is performed 2–3 times a week.
8. Two weeks of acupuncture is considered as a course of treatment. A few courses can be applied.

**Moxibustion**

**Traditional moxibustion**
1. It is an external treatment that uses the ignited moxa wool or the moxibustion material, mainly made of moxa wool, to warm the acupoint or lesion site with suspended or direct moxibustion. By means of the heat of moxibustion and the functions of medicine, it achieves the goal of treating diseases\(^{[112]}\)
2. It is suitable for COPD patients in stable condition and can increase the 6-min walking distance (weak recommendation for use, level of evidence: C), reduce the score of Saint George’s Respiratory Questionnaire (weak recommendation for use, level of evidence: D), and improve the quality of life. It can also improve the mMRC score (weak recommendation for use, level of evidence: C) and the lung function, FEV\(_1\), FEV\(_1\)%, and FVC (weak recommendation for use, level of evidence: C)\(^{[133–136]}\)
3. The medicine used in moxibustion is selected according to the syndrome and disease differentiation in Chinese medicine. Moxa stick and moxa wool are the common moxibustion materials
4. The acupoint for moxibustion is reasonably selected according to different diseases, symptoms, and syndromes. Zusanli (ST 36), Dazhui (GV 14), Tanzhong (CV 17), and Shenque (CV 8) are mainly used. Matching points for different syndromes: for lung qi deficiency, Taiyuan (LU 9) is added; for lung–spleen qi deficiency, Taiyuan (LU 9) and Pishu (BL 20) are selected; for lung–kidney qi deficiency, Taiyuan (LU 9) and Shenshu (BL 23) are added. Matching points for different symptoms: for chest stuffiness, Tanzhong (CV 17) can be added; Kongzui (LU 6) and Chize (LU 5) are used for serious asthma and serious cough, respectively; for large amounts of phlegm, Zhongwan (CV 12) is added
5. The moxibustion is performed once a week. The frequency can be adjusted according to different moxibustion materials, acupoints, and patients’ tolerance degrees
6. Each moxibustion lasts for 30 min or longer
It is performed with an interval of 1–2 weeks.

Three months of moxibustion is a course of treatment. More courses can be applied.

After moxibustion, the skin probably has a burning sensation, which can disappear by itself and is inconsequential to treatment. If blisters appear with a diameter of about 1 cm, there is no need for treatment, in general. However, if the blisters are large, with skin edema and ulceration, exudation of body fluid, and suppuration, local disinfection shall be performed for mild ones. If there are redness, swelling, and heat pain in a large area, aside from local disinfection, oral administration or external anti-infective drugs should also be used. For the suppuration in deep parts, the surgical department should get involved.

**Yifei moxibustion**

1. It is a method combining the effects of external medicinal treatment and moxibustion. Before moxibustion, Chinese herbal powder, mulberry paper, mashed ginger, and moxa wool are successively placed on the area of governor vessel (GV).

2. It is suitable for COPD patients in stable condition with deficiency syndrome. It can increase the 6-min walking distance (weak recommendation for use, level of evidence: B) and improve the score of CAT (weak recommendation for use, level of evidence: B) and quality of life. It can also decrease acute exacerbation (weak recommendation for use, level of evidence: B), improve cough, expectoration, chest stuffiness, shortness of strength, panting, chest stuffiness, fatigue, and other clinical symptoms (weak recommendation for use, level of evidence: B), and improve mMRC score (weak recommendation for use, level of evidence: B) and lung function, FVC, and FEV₁% (weak recommendation against use, level of evidence: B).

3. The medicine of moxibustion powder includes *Moschus, Radix Paeoniae Alba, Flos Caryophylli, Cortex Cinnamomi*, and *Semen Sinapis*, functioning as warming meridian and collateral, promoting qi and blood circulation, warming and ventilating lung collateral, and warming GV and strengthening yang.

4. The acupoints from Dazhui (GV 14) to Yaoshu (GV 2) along the GV are selected for moxibustion.

5. The procedure of moxibustion includes 12 steps, which include choosing body position, selecting acupoints, disinfection, smearing ginger juice, spraying moxibustion powder, applying mulberry paper, placing mashed ginger, igniting moxa cone, changing moxa cone, removing mashed ginger, gently wiping the moxibustion area, and putting blisters. Three moxa cones are changed each time.

6. Each treatment lasts for 120 min.

7. The moxibustion is performed with an interval of 14 days.

8. Three months is a course of treatment.

**Heat-sensitive moxibustion**

1. It is a kind of moxibustion therapy that involves suspended moxibustion on heat-sensitive acupoints, resulting in meridian qi conduction to the affected area through heat penetration, expansion, and transmission; thus, the therapeutic effects are improved.

2. It is suitable for patients with COPD in stable condition and can improve lung function, FEV₁/FVC, and FEV₁% (weak recommendation against use, level of evidence: B).

3. The moxibustion material is mostly cone-shaped moxa wool. Moxa sticks with different diameters are selected according to the need of the disease condition and different diameters of heat-sensitive acupoint areas.

4. As for the body position, the patient should feel comfortable, and the moxibustion site must be fully exposed. The recumbent position is preferred.

5. The acupoint is selected based on the moxibustion-sensation positioning method. With the moxa heat about 3 cm away from the body surface, centered on the traditional acupoint positioning, suspended moxibustion is carried out by combining manipulations along the meridian, circling, pecking, and applying mild moxibustion, to search the heat-sensitive acupoint. If the local area feels moderate heat without burning pain, and the patient has one or more kinds of the six heat-sensitive moxibustion sensations, it is regarded as the heat-sensitive acupoint, regardless of whether it is in the standard position of traditional acupoint.

6. The duration of each moxibustion depends on the disappearance time of the heat-sensitive moxibustion sensation, which is different for different diseases, people, and acupoints. The average time is about 40 min.

7. At the first continuous 8 days, it is performed once a day. After that, at least 15 times of treatment is carried out every month.

8. There is no regular course of treatment. As long as the disease-related heat-sensitive acupoints exist, moxibustion is needed until all the related heat-sensitive acupoints are desensitized.

**Pulmonary Daoyin**

1. It is a lung rehabilitation technique in Chinese medicine that uses limb movement and breathing to regulate breath, mind, and body position.

2. It is suitable for COPD patients in stable condition and can increase the 6-min walking distance (weak recommendation for use, level of evidence: B) and improve CAT score and quality of life (weak recommendation for use, level of evidence: B).

3. Pulmonary Daoyin includes six steps: standing and relaxing the whole body and mind, breathing using the two Dantians (the energy center), regulating lungs and kidneys, turning around and referring to the side, rubbing and circling the kidney, and nourishing the spirit and closing the practice.

4. Each rehabilitation exercise lasts for 30 min.

5. The rehabilitation exercise is performed more than 5 days a week, twice a day.

6. The rehabilitation duration should be more than 3 months. It will achieve better effects with a longer duration.
**APPENDIX 1 DESCRIPTION**

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Please bear in mind that some of the contents in the guideline may involve patents. The publisher of this document is not responsible for identifying them.[144-145] The guideline is a clinical practice guidance of chronic obstructive pulmonary disease (COPD) rehabilitation with Chinese medicine methods. It shall not replace other clinical practice such as Chinese medicinal treatment based on syndrome differentiation.

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**Conflicts of interest**

There are no conflicts of interest.

**References**

14. Management Center of Qigong for Health Maintenance of the State Administration of Sports of China. Qigong for Health
Li


129. Cao L. The Clinical Research of Acupuncture Combined with Auricular Acupuncture for Patients with Acute Exacerbation of COPD to Improve their Quality of Life and Pulmonary Function. Wulamuqi: Xinjiang Medical University; 2012.


135. Wen X, Chen CY, Liang MA. Clinical research of the moxa cone moxibustion for improving life quality of chronic obstructive pulmonary disease patients in the tranquilization period. World Chin


139. Li N. Efficacy on Chronic Obstructive Pulmonary Disease Patients at Stable Stage Treated with YiFei Moxibustion. Zhengzhou: Henan University of Chinese Medicine; 2015.


