

Acupuncture and Moxibustion for Treating Chronic Bronchitis

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INTRODUCTION

Bronchitis is an inflammation (or irritation) of the airways in the lungs. Chronic bronchitis is one type of COPD (chronic obstructive pulmonary disease). The inflamed bronchial tubes produce a lot of mucus. This leads to coughing and difficulty breathing. It is thought that COPD affects 64 million people worldwide, which has brought a large and growing economic and social burden to people, and World Health Organization projections estimate that it will be the third leading cause of death by 2030 [1]. COPD usually last for a long time and can easily relapse. The key of treating the COPD is optimizing the treatment plan to slow down the disease process and prevent the decline of lung function. Most important things for patient are ameliorating their shortness of breath symptom and improving the cardio fitness.

Traditional Chinese Medicine (**TCM**) theory emphasize that everything is interdependent and mutually interactive in the universe. Health reflects a harmonious balance of energies within an individual while disease results from their disharmony. When changes occur and the body fails to adapt, then disease is likely to occur, and curing the patient is based on the person instead of the disease [2]. As a kind of TCM, acupuncture and moxibustion prove less adverse reaction and long-time duration. Recently, research show that acupuncture and moxibustion may be valuable modalities in managing symptoms of COPD. Differing from Western Medicine, acupuncture and

moxibustion treat the patients' body as a whole and parts interconnect. Parts that can depend and restrict each other physiologically and pathologically. The five zang-fu make up the core units of the body and are linked through various meridians. The principle of the acupuncture and moxibustion is to promote, regulate, stimulate the body's self-regulating function and self-rehabilitation ability to achieve the recover of the disease.

KNOWLEDGE OF CHRONIC BRONCHITIS IN TCM

Chronic bronchitis are considered as “coughing syndrome”, “dyspneasyndrome” and “ phlegm syndrome” in TCM. The disease happen in “lung” and “heart”, “spleen”, “kidney” et al are closely related. The Qi in “lung” is deficiency, which makes the protection mechanism of the whole body imbalanced. The pathological environmental agents can easily entry into the body without the protection of the Qi. When “spleen” is affected, it will influence the digestive system and result in malnutrition of the body and fatigue of the respiration muscle. When “kidney” is affected, the patient gradually have the symptom of dyspnea. “Lung” govern Qi and “kidney” absorb Qi and the patient will experience asthma and shortness of breath if these two zang-fu do not work. “Lung” is connected with “heart” by the meridian and the Qi in “lung” help “heart” run the blood. The collaborative relationship will fail with the long-term effects of the disease and then, patients' activities will be limited and their life quality will decline [3]. The internal cause is deficient Qi in the lung and the external cause is the pathological environmental agents. Both of them cause the disorder of the zang-fu. In a word, as the Neijing goes, all the zang-fu make cough instead of lung alone.

The COPD patients in stable phase usually have deficient root with overdo superficiality and show deficiency syndromes in “ lung”, “spleen” and “kidney”. The treatment principle should focus on the root and superficiality, and the priority should depend on the specific condition [4]. When the overdo superficiality precede the deficient root, the focus of the treatment is mitigating the symptom by dispersing lung Qi and dissipating phlegm. In the contract, when the deficient root is more serious than the overdo superficiality, the doctor should concern more about the root and the main task should be nourishing these zang-fu.

EFFECT OF ACUPUNCTURE AND MOXIBUSTION FOR CHRONIC BRONCHITIS

Studies have showed that acupuncture can effectively improve several outcomes of the COPD patients including dyspnea, exercise capacity and health-related quality of life, although the strength of that evidence was not sufficient to support the routine use of acupuncture therapies [5-10]. A randomized study demonstrate the efficacy of acupuncture treatment for improvement of dyspnea on exertion (**DOE**) and exercise tolerance in patients with COPD. In this study, the researcher use the 6MWT for assessment of severity of DOE after 12 week for once a week and find that Borg Scale Score after 6MWT improve from 5.5 (2.8) to 1.9 (1.5) [9]. Acupuncture as an adjunct to other treatments can also be very effective. A study show that acupoint-sticking

therapy combined with bufei yishen granule can reduce the frequency and duration of acute exacerbation of the patients with COPD [11]. Another study also find that The combination of acupuncture and medicine can improve the clinical symptom of patients effectively and enhance the treatment efficiency significantly in comparison to control group. The treatment group was treated with Bufe Nashen formula acupuncture combined with Heche Chongcao capsule of TCM and the ontrol group was treated with oral Acetylcysteine Effervescent Tablets. After three months, the treatment group effective rate was 80.00% while the control group effective rate was 64.00% and group and the difference was significant ($P<0.05$) [12]. Physical therapy is useful for COPD patients and researches suggest that acupuncture combined with physical therapy can be more effective in improvement of the pulmonary function [13-14].

The mechanisms of action of acupuncture in treating COPD are unclear. COPD is considered as blood stasis and a study that acupuncture at back-Shu acupoints with cupping therapy is applied to treat obstructive diseases of lung find that acupuncture could apparently reduce the blood viscosity and resistance to blood flow, improve clinical symptoms and reduce the therapeutic course [15]. In addition, It is reported that acupuncture at Zusanli (ST 36) and Feishu (BL 13) improved lung function of rats with COPD and have an anti-inflammatory effect, which may be related to down-regulation of OXA and its receptors [16]. A rats study also suggest that acupuncture regulates inflammatory cytokines and contributes to lung protection in a rat model of smoke-induced COPD [17].

METHODS OF ACUPUNCTURE AND MOXIBUSTION FOR CHRONIC BRONCHITIS

In China, many acupuncture and moxibustion modalities are regularly used for COPD patients. Several clinical trials have shown that they might have therapeutic effect for COPD patients including improvement of symptoms and quantity of life [8,9,18]. However, The standardization of acupoints as used in the present study may be unclear. On the one hand, the studies about COPD is limited, on the other hand, various scholars may hold different views about COPD and they select different acupoints in their studies, but there are some common acupoints. Wan researches the COPD for a long time and develop a Sansanfang treatment method for COPD. She thinks that there are three types of COPD patients by evaluation of the TCM, which can be treated by three kinds of acupuncture methods. It is reported that Sansanfang can be useful in clinical practice [19].

Electro acupuncture utilize the electric current to stimulate the acupoints. It is a combination of the acupuncture and electrical stimulation, which can improve the efficacy of the acupuncture. Study show that electro acupuncture at meridian acupoints can reduce the airway resistance during the lung ventilation of the COPD patients and improve their oxygenation function [20]. Transcutaneous electrical nerve stimulation (**TENS**) is an electrotherapy method that exerts a specific low-frequency pulse current to treat diseases. Recently, TENS has been applied over

acupoints (acu-TENS). A single-blind, randomized, placebo-controlled study find that acu-TENS can improve FEV 1% predicted and reduce Dyspnea Visual Analogue Scale (**DVAS**) and COPD assessment test (**CAT**) scores on patients with stable COPD [21]. In addition, it was also found that acu-TENS on Dingchuan (EX-B-1) can improves physical function and quality of life [22]. There are studies exploring the mechanism of the action of electroacupuncture and find that electroacupuncture at Feishu (BL 13) point can enhance vagus nerve discharge and promote the release of the ACh in the lungs of the COPD rats [23] and electroacupuncture at Zusanli (ST 36) can down-regulate IL-1 β in lung tissue and IL-6 in plasma and inhibit the inflammatory response of the lung tissue [24].

Warming needle moxibustion is a combination of acupuncture and moxibustion. Studies show that warming needle moxibustion are obviously effective on the improvement in pulmonary function of elderly patients with COPD [25-27]. A study show that warming needle moxibustion have similar effect on improvement of pulmonary function index compared with drug. In this study, ST 36, BL 13 and Dingchuan (EX-B 1) were punctured as the main acupoints and Gaohuang (BL 43), Xinshu (BL 15), Dazhui (GV 14) and Fengmen (BL 12) as the matching acupoints [25]. Another study also suggest that warming needle moxibustion improve the pulmonary function of the patient with COPD in the stable phase , release clinic symptoms and improve life quality [26]. The improvement in respiratory symptom is superior in Seretide group as compared with warming needle group, but the improvement of life quality is slightly better in the warming needle group. In this study, ST 36, BL 13 and EX-B 1 are selected as the main acupoints. Apart from the clinic symptom and life quality, warming needle moxibustion can also influence the arterial oxygen. Study select Arterial Oxygen Partial Pressure (**PO2**) and Arterial Carbon Dioxide Partial Pressure (**PCO2**) as the indicators in the experiment of warming needle moxibustion and find that test group can improving arterial blood gas of patients better [27]. In this study, ST 36, BL 13, EX-B1, BL 43, BL 12 and Danzhong (CV 17) are main acupoints. In conclusion, warming needle moxibustion can make effective effect of COPD patients with limited research and the studies above select almost the same acupoints.

Winter disease treated in summer is an an important and widely applied modality of TCM. COPD can be easily attacked in the winter since the Yang-Qi is insufficient in the cold day. TCM emphasize warming method to invigorate Yang-Qi for COPD. The main reason for treating patients in summer is warming yang eradicating cold. What's more, it contains the theory of preventive treatment and it is important to supply Yang Qi to reach a balance of Yin-Yang of the body in the summer so that the body can resist pathogenic factors in the winter. Studies have showned that acupoints paste in summer can effectively release the symptom and improve the life quality of COPD and other pulmonary disease patients [28-29]. Moxibustion at the hottest days in summer effectively relieve the symptoms of respiratory disease [30]. In this study, GV 14, EX-B 1, BL 12, BL 13, Pishu (BL 20) and Shenshu (BL 23) are selected as the acupoints.

CONCLUSION

Acupuncture and moxibustion are safe, cost-effective, complementary for patients with COPD. Research have confirmed the safety and efficiency of Acupuncture and moxibustion. However, based on the theory of TCM, the treatment methods should focus on the patients instead of the disease, which makes it hard to develop a guide for COPD. There still lack of large sample, long duration trials to verify the efficiency of the TCM and make the appropriate treatment guide based on the syndrome differentiation.

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