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Contents

1. **Chinese Herbal Medicine to Treat Allergic Rhinitis: Evidence From a Meta-Analysis**
2. **Efficacy and safety of So-Cheong-Ryong-Tang in treatment of perennial allergic rhinitis: study protocol for a double-blind, randomised, parallel-group, multicentre trial**
3. **Moxibustion with Chinese herbal has good effect on allergic rhinitis**
4. **Effect of Yupingfeng Droppill in Treatment of Allergic Rhinitis**
5. **The effects of two Chinese herbal medicinal formulae vs. placebo controls for treatment of allergic rhinitis: a randomised controlled trial**
6. **Lack of efficacy of a herbal preparation (RCM-102) for seasonal allergic rhinitis: a double blind, randomised, placebo-controlled trial**
7. **Antiinflammatory effects of Bu-zhong-yi-qi-tang in patients with perennial allergic rhinitis**
8. **Dishen Qufeng Decoction for treating allergic rhinitis: a randomized controlled trial**
9. **Treatment for seasonal allergic rhinitis by Chinese herbal medicine: a randomized placebo controlled trial**
10. **Drug design methods for allergic rhinitis based on molecular networks**

1. **Chinese Herbal Medicine to Treat Allergic Rhinitis: Evidence From a Meta-Analysis**

Xu Zhang,1,2 Feng Lan,2 Yuan Zhang,1,2 and Luo Zhang1,2 *Allergy Asthma Immunol Res.* 2018 Jan; 10(1): 34–42

Keywords: Allergic rhinitis, Chinese herbal medicine, nasal symptom

Abstract

Purpose: Chinese herbal medicine (CHM) has been widely used in China to treat allergic rhinitis (AR). However, several studies have produced conflicting data with regard to the efficacy of the medicine. Our aim was to perform a meta-analysis of randomized clinical trials (RCTs) to evaluate the relative efficacy of CHM.

Methods: We systematically searched the PubMed, Medline, and Springer electronic databases up to March 2017 for RCTs comparing the efficacy of CHM versus placebo for the treatment of patients with AR. Total nasal symptoms and quality of life were assessed through pooling mean difference (MD) with its 95% confidence interval (CI). Moreover, sensitivity and subgroup analyses according to control design and quality of life assessment were performed to evaluate the source of heterogeneity.

Results: Eleven RCTs were enrolled in the meta-analysis. Assessment of overall heterogeneity indicated significant heterogeneity among the individual studies ($I^2=100\%$, $P<0.00001$), and thus ransomed effects model was used to pool data. CHM was found to significantly enhance quality of life compared with placebo (MD=-0.88, (95% CI: -1.55, -0.21); $P=0.01$). The symptom of itchy nose, sneezing or total nasal symptoms scores were not significantly improved after CHM treatment, although the improvement in itchy nose just failed to reach significance (MD=0.09, (95% CI: 0.00, 0.18); $P=0.06$)

Conclusions: This study suggests that CHM appears to improve the quality of life of AR patients. However, these findings, as well as the findings for the effect of CHM on sneezing, total nasal symptoms, and the symptom of itchy nose,

need to be substantiated in larger cohorts of AR patients by further well-designed studies.

2. Efficacy and safety of So-Cheong-Ryong-Tang in treatment of perennial allergic rhinitis: study protocol for a double-blind, randomised, parallel-group, multicentre trial

Kim MH, Ko Y, Ahn JH, Yun Y, Yun MN, Ko SG, Choi I. *BMJ open*, 2017, 7(9), e016556 | added to CENTRAL: 31 October 2017 | 2017 Issue 10

Abstract

INTRODUCTION

So-Cheong-Ryong-Tang (SCRT) is a herbal medicine widely used in traditional medicine for treating allergic rhinitis (AR). In animal studies, SCRT has suppressed the progression of AR. The main purpose of this study is to assess the efficacy and safety of the SCRT for the treatment of perennial allergic rhinitis (PAR) and discover the underlying mechanisms resulting in anti-inflammatory effects in humans. // **METHODS AND ANALYSIS:** We will conduct a double-blind, randomised, placebo-controlled, parallel-group, multicentre trial of Korean adults with PAR. For the study, 156 subjects with PAR will be recruited. The trial will consist of a 4-week oral administration of SCRT or placebo with two visits at 2-week intervals and an 8-week follow-up period with two visits at 4-week intervals. The primary outcome is a change in the total nasal symptoms score. The secondary outcomes include changes in the Rhinoconjunctivitis Quality of Life Questionnaire score, total serum IgE and cytokines levels. // **ETHICS AND DISSEMINATION:** This study was approved by the Institutional Review Board at each research centre (name of each centres and approval numbers): Kyung Hee University Hospital at Gangdong (KHNMC-OH-IRB 2015-04-009), Kyung Hee University Medical Centre (KOMCIRB-160321-HRBR-011), Pusan National University Hospital (2016-004), Dongguk University Medical Centre (2016-03) and Semyung University hospital (2016-01). This result will be published in a peer-reviewed journal. // **TRIAL REGISTRATION NUMBER:** NCT03009136; Pre-results.

3. Moxibustion with Chinese herbal has good effect on allergic rhinitis

Min C, Peng C, Wei G, Huang X, Fu T, Du Y, Wang C *International journal of clinical and experimental medicine*, 2015, 8(9), 16480-16487

Abstract

Allergic rhinitis (AR) is a chronic inflammatory disease of rhino-ocular mucosa, affecting up to 40% of population worldwide. Chinese herbal medicines and Acupuncture, adopted thousands of years in China, has good effect on allergic rhinitis. This study evaluates the effects of Moxibustion with Chinese herbal in treating patients with allergic rhinitis over a 1-year follow-up. A randomized controlled trial was conducted in a sample of 355 participants recruited from Guangdong general hospital of China. After baseline measurements, participants were randomly assigned to treatment-group or control group. Treatment group received Moxibustion with Chinese herbal. Control group received Loratadine. The main outcomes, including symptom severity and quality of life were measured using the Allergic Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ). Both moxibustion with Chinese herbal and Loratadine improve nose symptoms such as stuffy/blocked, sneezing, runny nose, itchy nose, sore nose and post-nasal drip in patients with AR. Symptoms fatigue, loss of taste, afraid of cold/wind and cold limb were improved significantly in moxibustion with Chinese herbal group. The mean quality of life scores decreased in both groups after treatment. Compare to control group, moxibustion with Chinese herbal is more effective than Loratadine in improving the quality of life in patients with AR. The results show moxibustion with Chinese herbal was effective to reduce symptoms and enhance quality of life in patients with allergic rhinitis. It is a simple, convenient and economic therapy for patients with AR. Further controlled trials of its effects in patients with allergic rhinitis are recommended.

4. Effect of Yupingfeng Droppill in Treatment of Allergic Rhinitis

Shi HY, Zhuang Y, Wang XY, *China journal of Chinese materia medica*, 2014, 39(12), 2364-2366

To evaluate the efficacy of Yupingfeng droppill and western medicine in treatment of allergic rhinitis, 76 patients from Beijing Shijitan hospital during April 2011 to May 2012 were selected and randomly divided into the treatment group (n = 44) and control group (n = 32). The treatment group was treated with Yupingfeng droppill and cetirizine tablets, the control group was treated with cetirizine tablets, the effect of the two groups was observed after 28 days, after treatment, the symptoms and inferior turbinate volume contrast of the two groups were better than before. The obvious effective rate and total effective rate were 84.09%, 95.45% and 46.87%, 56.25% in the treatment group and control group. The differences in the obvious effective rate and total effective rate were statistically significant between two groups ($P < 0.05$), Yupingfeng droppill has the effect in treatment of Allergic Rhinitis.

5. The effects of two Chinese herbal medicinal formulae vs. placebo controls for treatment of allergic rhinitis: a randomised controlled trial

Chan RYP, Chien WT. *Embase. Trials*, 2014, 15(1)

Abstract

Background: Allergic rhinitis is a chronic illness, affecting 10 to 40% of the worldwide population. Chinese herbal medicines, the treatment of allergic rhinitis, adopted thousands of years in ancient China, has recently raised much attention among researchers globally. This study evaluates the effects of two Chinese herbal formulae [Cure-allergic-rhinitis Syrup (CS) and Yu-ping-feng San (YS)] in treating undergraduate nursing students with allergic rhinitis over a 3-month follow-up, when compared to a placebo control group. Methods: A double-blind, randomised controlled trial with repeated-measures, three-parallel-groups design was conducted in a random sample of 249 participants recruited from one university in Hong Kong. After baseline measurements, participants were randomly assigned to CS, YS, or placebo groups (n = 83 per group). The main outcomes, including symptom severity, quality of life, and body constitution, were measured with self-administered questionnaires at baseline and immediately, 1 and 3 months after the 4-week interventions.

Results: 240 participants completed the trial, with 9 (3.6%) drop-outs. The results of Generalised Estimating Equations test followed by pairwise contrasts tests indicated that the participants who received CS showed significantly greater reduction of symptoms (mean difference of CS vs. placebo = 26.13-34.55, $P < 0.0005$) and improvements in quality of life (mean difference of CS vs. placebo = 12.81-16.76, $P < 0.001$), and body constitution in 'Qi-deficiency', 'Yang-deficiency', and 'Inherited Special' (mean difference of CS vs. placebo = 7.05-8.12, 7.56-8.92, and 4.48-8.10, $P = 0.01- < 0.0005$, 0.001-0.004, and 0.01- < 0.0005 , accordingly, at three post-tests). The participants who received YS also indicated significant greater improvements in symptom severity, quality of life, and a few patterns of body constitution when compared to the placebo group. However, its effects were lesser in strength (i.e., smaller effect sizes), varieties of symptoms, and body constitution and sustainability over the 3 months. Conclusions: The herbal formula CS was found effective to reduce symptoms and enhance quality of life in young adults (nursing students) with allergic rhinitis in 'Yang- and/or Qi-deficiency' body constitution. Further controlled trials of its effects in Chinese and/or Asians with allergic rhinitis in terms of socio-demographic, ethnic and illness characteristics and a longer-term follow-up are recommended.

6. Lack of efficacy of a herbal preparation (RCM-102) for seasonal allergic rhinitis: a double blind, randomised, placebo-controlled trial

Lenon GB, Li CG, DaCosta C, Thien FCK, Shen Y, Xue CCL. *Asia pacific allergy*, 2012, 2(3), 187-194

Abstract

Background: A herbal preparation, known as RMIT Chinese Medicine 102 (RCM-102) consisting of eight herbs which demonstrates inhibition of the release of key inflammatory mediators associated with seasonal allergic rhinitis (SAR) was used. This study evaluated the efficacy and safety of RCM-102 for SAR. Objective: This study evaluated the efficacy and safety of RCM-102 for

SAR. Methods: This randomised placebo-controlled trial involved subjects aged between 18 and 65 who were randomly assigned to either RCM-102 or a placebo group. After a two-week baseline period, all subjects took either RCM-102 or placebo capsules (two capsules each time, three times daily with a four hour interval) for a period of eight weeks. The primary end-points were the Five-Point Scale symptom scores. Rhinoconjunctivitis Quality of Life Questionnaire, relief medication usage, adverse events, kidney and liver function tests and full blood examination were secondary end-points. Intention-to-treat analysis was applied. Results: One hundred and four subjects were randomised with 52 in each group. Ninety-five subjects (47 and 48 subjects in RCM-102 and placebo groups) completed the trial. Nine subjects withdrew from the study prior to the end of the second treatment week. At the end of the trial, there were no significant differences between the two groups with respect to all outcome measures. There were no liver or kidney function abnormalities reported. Conclusion: This mechanism-based RCM-102 was safe but not more beneficial than placebo for patients with SAR.

7. Antiinflammatory effects of Bu-zhong-yi-qi-tang in patients with perennial allergic rhinitis

Yang SH, Yu CL. *Journal of ethnopharmacology*, 2008, 115(1), 104-109

Abstract

Bu-zhong-yi-qi-tang, an ancient formula of Chinese medicine usually used in the treatment of allergic diseases, was evaluated in the treatment of patients with perennial allergic rhinitis. In this study, 60 patients allergic to house dust mite allergen confirmed by skin test and MAST test were recruited and randomized. An experimental group of 36 patients was treated with Bu-zhong-yi-qi-tang, whereas a control group of 24 patients was treated with a non-effective formula Ping-wei-san for 3 months. The nasal symptomatic scores and the responses of polymorphonuclear neutrophils (PMN) to IL-4-stimulation were measured after treatment. The nasal symptomatic scores in the experimental

group were significantly improved (3.78 \pm 0.09 before treatment vs. 0.57 \pm 0.06 after treatment). In contrast, no change was found in symptomatic scores in the control group (3.17 \pm 0.12 before treatment vs. 2.79 \pm 0.14 after treatment). Moreover, total serum IgE and the IL-4-stimulated production of PGE(2) and LTC(4) by PMN was significantly suppressed in the experimental group after treatment compared to the control group. The COX-2 mRNA expression in IL-4-stimulated PMN was also significantly suppressed after Bu-zhong-yi-qi-tang treatment. These results suggest that Bu-zhong-yi-qi-tang but not Ping-wei-san was beneficial to the patients with perennial allergic rhinitis via suppressed nasal inflammation by an anti-inflammatory effect.

8. Dishen Qufeng Decoction for treating allergic rhinitis: a randomized controlled trial

Zhu WR, Zhang SJ, Deng DH, Shen XH. 2008. *Journal of Chinese integrative medicine* 6(7), 700-703

Abstract

OBJECTIVE:To observe the clinical therapeutic effects of Dishen Qufeng Decoction (DSQFD), a compound traditional Chinese herbal medicine, in treatment of allergic rhinitis.

METHODS:Sixty cases of allergic rhinitis were selected and randomized into DSQFD group (30 cases) and cetirizine group (30 cases), and the patients were orally administered DSQFD and cetirizine respectively. The integrals of patients' symptoms, such as sneezing, nose running, nasal occlusion and nasal itching, signs in the nasal conchae and peripheral blood eosinophil (EOS) count were observed count before and after treatment.

RESULTS:DSQFD obviously improved the symptoms and signs of allergic rhinitis. The total response rate of DSQFD treatment was 83.3%, while that of the cetirizine treatment was 86.7%; the EOS counts in both groups were significantly decreased. These results showed statistical difference between the two groups.

CONCLUSION: DSQFD is an effective preparation of traditional Chinese medicine for treating allergic rhinitis.

9. Treatment for seasonal allergic rhinitis by Chinese herbal medicine: a randomized placebo controlled trial

Xue CC, Thien FC, Zhang JJ, Da Costa C, Li CG. 2003. *Alternative therapies in health and medicine*, 9(5), 80-87

Abstract

CONTEXT: Chinese herbal medicine (CHM) is widely used to treat seasonal allergic rhinitis (SAR), however, evidence of efficacy is lacking. **OBJECTIVE:** To evaluate the efficacy of a Chinese herbal formulation for the treatment of Randomized, double blind, placebo controlled trial **:SETTING:** RMIT Chinese Medicine Clinic. **PATIENTS:** 55 patients with seasonal allergic rhinitis (active 28, placebo 27). **INTERVENTIONS:** CHM extract capsule (containing 18 herbs) or placebo, given daily for 8 weeks.

MAIN OUTCOME MEASURES: The primary measure of efficacy were changes in severity of nasal and non-nasal symptoms using a Five Point Scale (FPS) measured by both patients and the practitioner. The secondary measure was the change in score for the domains measured in the Rhinoconjunctivitis and Rhinitis Quality of Life Questionnaire (RQLQ) assessed by patients.

RESULTS: Forty-nine patients completed the study (active 24, placebo 25). After eight weeks, the severity of nasal symptoms and non-nasal symptoms were significantly less in the active treatment group than in the control group, both for measurements made by patients and those by the practitioner. Comparison of active and placebo treatment groups RQLQ scores also indicated significant beneficial effects of treatment (end point Section 1: $P < 0.05$; Section 2: $P < 0.01$). Intention-to-treat analyses of categorical items showed moderate to marked improvement rates were 60.7% and 29.6% for active and placebo respectively. Eleven patients reported mild adverse events including 1 withdrawn from the trial.

CONCLUSIONS: This CHM formulation appears to offer symptomatic relief and improvement of quality of life for some patients with seasonal allergic rhinitis.

10. Drug design methods for allergic rhinitis based on molecular networks

Li Du (杜梨)

[Degree Granting Unit]: Beijing University of Chinese Medicine

[Degree Level]: Master [Year of Degree Granting]: 2017

Abstract

Allergic rhinitis (AR) is a type I allergic disease of nasal mucosa induced by the release of histamine or other chemically active substances mediated by immunoglobulin (IgE). Allergens bind to IgE antibodies on the surface of mast cells by antigen presenting cells, degranulate mast cells, release inflammatory mediators such as histamine, kallikrein, leukotriene, prostaglandin, eosinophil chemokine, platelet activating factor, serotonin and other biological active mediators, leading to sneezing, runny nose and nasal obstruction, thus causing the malignancy of allergic rhinitis. Cyclic process. At present, the global incidence of allergic rhinitis is on the rise. Allergic rhinitis has the characteristics of intermittent and persistent, high incidence, which seriously affects people's quality of life, increases the economic burden of patients, and is related to bronchial asthma, sinusitis and conjunctivitis. Therefore, allergic rhinitis has been regarded as a global health problem. At present, although the research on allergic rhinitis is constantly enriched and deepened, the advantages of compound drugs are embodied in both clinical combined medication and the use of Chinese medicine and Chinese medicine prescriptions, but it also has limitations, such as the uncertainty of component ratio, the instability of curative effect, the difficulty of quality control, etc. At the same time, it is less from the molecular level, the long-term efficacy of traditional Chinese medicine compound and its work. The mechanism is used to study, and there are significant problems in drug resistance, toxicity and side effects of existing drugs and difficult to cure complex diseases. The success rate of new drug research and development has been declining, and the serious imbalance between input and output has also made people begin to seriously rethink. Therefore, how to prevent and treat allergic rhinitis, develop effective drugs, so that the body maintain a healthy cycle process is of great significance. In this

paper, from the point of view of the vicious circle of disease, that is to say, to establish the target-related molecular network of allergic rhinitis, and explore the circulation feedback pathway among them, carry out the correlation analysis of disease, find out the vicious circle pathway of long-term cure of disease, and then carry out targeted drug treatment of disease, so as to make the treatment of disease more accurate. The main contents of this study include three parts: (1) Construction of allergic rhinitis target molecular network. The construction of the molecular network is mainly through the disease target database, cell biological pathway database and protein interaction database, using entity grammar system to establish the relationship network between allergic rhinitis target and protein. At the same time, the interaction mode between each two nodes in allergic rhinitis target molecular network only includes positive and negative effects. This part establishes the target molecular network of allergic rhinitis based on the above methods. (2) To analyze the mechanism of common Chinese medicines in the treatment of allergic rhinitis. To clarify the relationship between the complex components of traditional Chinese medicine and the treatment of diseases is an important material basis for the future development of traditional Chinese medicine. In this part, the mechanism analysis method based on entity grammar system is used, that is, the inference rules are established according to entity grammar system, and the mechanism of Chinese medicine treating diseases is analyzed according to the molecular pathway of the action of Chinese medicine components. The process of Chinese medicine treatment is complementary to the occurrence and development of allergic rhinitis. Its multi-target characteristics make it effective in treatment. Its in-depth study of disease mechanism is the material basis for drug design, and also proves that Chinese medicine can treat pre-disease and play a role as a whole. (3) From the point of view of the vicious circle of disease, combined with the analysis of the mechanism of traditional Chinese medicine, dichotomy and greedy algorithm were used to design the prescription of drugs. Based on literature research and molecular network, this part calculates the disease correlation degree of circulatory pathway by reasoning, establishes

reasoning rules combined with entity grammar system, determines the vicious circulatory pathway related to allergic rhinitis, and then designs drug prescriptions by dichotomy and greedy algorithm. The prescription provided a reference for the treatment of the vicious circle of allergic rhinitis, and regulated the cytokines and related active substances in the pathology of the disease, thus affecting the balance of the whole molecular network of the body. This topic attempts to study the design of compound drugs from the perspective of malignant circle of disease. Based on the study of cellular biological pathway and mechanism of Chinese medicine, it fully integrates the information in the field of biology and Chinese medicine, uses the technical method of entity grammar system to discover the malignant circle pathway of disease, and uses dichotomy and greedy algorithm to design drug formulation, although from the perspective of this study. More in-depth research is needed, but it provides a way to promote the research and development of multi-target drugs, provide a way for drug treatment of disease-specific genes, and provide a new idea for the research and development of drugs to improve the accuracy of the treatment of allergic rhinitis

Happy Summer ! 夏日快乐! 快乐猪年!

