Research on the Treatment of Chronic Urticaria with Mahuang Lianqiao Chixiaodou Decoction Based on Xuanfu Theory

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Abstract: Chronic urticaria is a dermatological allergic disease with an uncertain etiology and pathogenesis. It presents challenges such as high recurrence rate and impact on the physical and mental health of patients. Traditional Chinese medicine has been continuously exploring the understanding of this disease, of which the Xuanfu theory suggests a close correlation between the pathogenesis of chronic urticaria and Xuanfu obstruction. By analyzing and utilizing the Ma Huang Lian Qiao Chi Xiao Dou Tang in the treatment of chronic urticaria, the aim is to open up the Xuanfu, restore its normal function, regulate its opening and closing, and expel pathogenic factors from the pores of the Xuanfu. This treatment approach aims to enrich the theoretical basis of skin disease treatment. A clinical case study is also attached.

1. Introduction

Urticaria is a common skin disease, commonly characterized by pruritus accompanied by edematous wheals. The duration of recurrent skin lesions is not less than 6 weeks, making it chronic urticarial[1]. Multiple medication administrations are required to achieve relief. The etiology of urticaria in Western medicine is complex and unclear, with both endogenous and exogenous factors capable of triggering it. The pathogenic mechanism is still not well understood, but it is widely accepted that degranulation of mast cells releases inflammatory mediators, causing temporary hypersensitivity reactions[2]. In traditional Chinese medicine, urticaria is often described as "feng tian zhen" or "yin zhen". Its etiology is multifactorial and variable, often resulting from deficiency in the body's constitution and susceptibility to external pathogenic factors. It is mostly a manifestation of internal deficiency with an external manifestation, primarily affecting the skin and subcutaneous tissues. The mysterious palace (xuan fu) is a ubiquitous microstructure and functional unit in the body, serving as a subtle pathway for the circulation of qi, blood, body fluids, and vital spirit[7]. It connects the body with the external environment. Dysfunction of the mysterious palace can lead to disturbances in the circulation of qi, blood, and body fluids, causing disharmony in the body's surface tissues and easily triggering skin diseases. Therefore, the pathogenesis of urticaria is closely related to the dysfunction of the mysterious palace. Based on the theory of the mysterious palace, this study aims to regulate and open the mysterious palace using Mahuang Lianqiao
Chixiaodou Tang, which promotes sweating to release the superficial, clears heat, and eliminates dampness. The goal is to open and normalize the functions of the mysterious palace, ensuring that it functions appropriately, and allowing pathogenic factors to be expelled from the pores of the mysterious palace.

2. Etiology and Pathogenesis

The pathogenesis of chronic urticaria is complex and variable. The<Zhu Bing Yuan Hou Lun> states, "If a person's skin is deficient and is affected by wind evil, it will give rise to itching rash"[3]. The<Waike Shu Yao - Lun Chi Bai You Feng> states, "If wind is dominant, itching will occur; without wind, itching will not manifest." Physicians throughout history have considered insufficient constitution compounded by susceptibility to external pathogenic factors as the main cause of the disease. The inherent constitution is unable to withstand external influences, resulting in deficiency or malfunction of the organs and viscera, Qi and blood deficiency, disharmony between the nourishing and defending aspects, insufficient nourishment of Yin, and stagnation in the skin's subcutaneous tissues, leading to the onset of the disease. Among the six exogenous pathogenic factors, wind, dampness, and heat are the main culprits, often accompanied by other pathogenic factors jointly invading the body and causing the disease. Additionally, internal emotional disturbances and improper diet should not be overlooked as triggering factors.

Based on the etiology and pathogenesis of chronic urticaria, different theories and treatment methods have been proposed by various medical experts. Zhao Bingnan[4] believes that wind evil attacks the defense, resulting in either blood deficiency generating wind or spleen deficiency generating dampness and susceptibility to external wind, leading to imbalance of yin and yang. In treatment, it is necessary to eliminate wind, harmonize yin and yang, and simultaneously dispel dampness. Zhu Renkang[5] emphasizes the treatment of wind, employing the three methods of dispersing wind, expelling wind, and searching wind, and achieving significant therapeutic effects through a combination of compatible prescriptions. Professor Wang Daokun[6] has proposed the theory of "wind and blood correlation" in the clinical treatment of skin diseases, stating that blood follows the movement of wind, and when blood is thriving, wind is extinguished. He advocates for a combined treatment approach that combines syndrome differentiation with constitutional analysis. The theory of "Shao Yin Excess"[7] suggests that the pathogenesis of chronic urticaria is due to deficiency of yin and blood, disharmony between nourishing and defending aspects, and susceptibility to external pathogenic factors. Additionally, it proposes that the onset of this disease is more likely to occur at night and is not related to dysfunction of the defensive aspect.

3. Overview of Xuan Fu Theory

In the<Huangdi Neijing>(Yellow Emperor's Inner Canon), the term "Xuan Fu" originally referred to sweat pores. According to the<Leijing>(Classified Canon), it is stated: "Sweat belongs to water, and the color of water is dark (xuan). The place where sweat resides is therefore called Xuan Fu (Dark Chamber); it comes out from pores, so it is called Han Kong (Sweat Pores). However, it originates from the transformation of Qi in the subtle realm, so it also embodies the meaning of Xuan Fu." Liu Wansu, based on this understanding, proposed: "The sweat pores on the skin refer to the orifices through which Qi and fluids are discharged. They are also referred to as Qi gates, as they are the passages for Qi discharge; they are called the follicle pathways, as they are the channels and textures through which Qi and fluids travel. They are also called the gates of ghosts and spirits, as they are the entrances to the ethereal and mysterious realms. They are also called Xuan Fu, as they are the chambers of the subtle and mysterious. Xuan Fu, however, encompasses everything, including the organs, skin, hair, muscles, tendons, bone marrow, and even claws in
human beings, as well as all other things in the world. It serves as the gateway and pathway for the ascending and descending flow of Qi" (<Su Wen Xuan Ji Yuan Bing Shi>). It can be seen that the Xuan Fu is not only a functional unit of the body, but also a subtle pathway connecting various orifices and channels throughout the body. Liu Wansu proposed that the Xuan Fu is the "texture through which the spirit thrives, and the Qi, Jin-ye and blood flow in and out." It is believed that the circulation of Qi, Jin-ye, blood, and spirit occurs in the Xuan Fu. Therefore, the Xuan Fu not only serves as a pathway for the movement of Qi, but also for the movement of blood, Jin-ye, and the mechanism of nourishing and protecting the spirit. Its physiological function lies in appropriate opening and closing, for the purpose of promoting circulation. When the Qi mechanism operates smoothly, the essence and blood can irrigate the body, Jin-ye is distributed due to the ascending and descending of Qi, and the mechanism of the spirit is able to operate. The righteous Qi is stored internally, preventing evil from causing harm. The eyes, ears, nose, tongue, body, mind, and consciousness of humans, when functioning properly, all rely on smooth ascending and descending movements. If there are blockages, they cannot function properly... The Xuan Fu is sealed and closed, which leads to the inability of Qi, fluids, blood vessels, nourishing and protecting mechanisms, and spirit to ascend and descend." Therefore, the Xuan Fu is closely related to the operation of the basic substances in the human body and the progress of life activities. If the opening and closing function of the Xuan Fu is impaired, or if it is blocked and unable to open, or if it is unable to close properly, the circulation of Qi within the body is disrupted, and the distribution of fluids and blood is hindered. This results in dysfunction of the organs and leads to the occurrence of diseases.

4. The occurrence of chronic urticaria is closely related to the blockage of the Xuan Fu.

The occurrence of chronic urticaria is related to the dermis and the dysfunction of the lung and spleen organs. Therefore, this disease is closely related to the abnormal opening and closing of the Xuan Fu. Pathogenic factors accumulate on the surface of the body, causing stagnation and blockage, resulting in tight skin pores and blockage of Qi. The blockage of the Xuan Fu leads to the failure of Qi, blood, and fluids to be discharged, causing long-term accumulation of heat on the skin. The internal pathogenic factors cannot be dispelled and the external pathogenic factors cannot penetrate, resulting in skin itching. Sweat is transformed from fluids, but when the Xuan Fu is blocked, the pores of the skin lose moisture and nourishment, leading to dryness and shedding. If a chronic illness persists or if there is mismanagement or mistreatment leading to the detriment of righteous Qi, the deficiency of righteous Qi will result in decreased organ function. The spleen and stomach lose their harmonizing function, and the lung Qi becomes insufficient to perform its dispersing and descending functions. This leads to weakness in defensive Qi, resulting in a diminished ability to resist external pathogenic factors. The skin and hair follicles are regulated by defensive Qi, and when there is a deficiency in defensive Qi, it cannot regulate the normal opening and closing of the Xuan Fu. This affects the circulation of nutrient Qi and defensive Qi, causing dysfunction of the skin pores, making it prone to invasion by external pathogenic factors and the occurrence of disease. At the same time, if external pathogenic factors invade the superficial layers of the skin, causing stagnation of nutrient Qi and defensive Qi, the Xuan Fu becomes closed, and righteous Qi cannot expel the pathogenic factors outwards. The struggle between righteous and pathogenic Qi occurs on the surface of the body, leading to the formation of wind eruptions. In the course of chronic urticaria, the imbalance of the Xuan Fu affects the circulation of Qi, blood, and fluids. Prolonged stagnation may lead to the generation of phlegm and blood stasis. Phlegm and blood stasis obstruct the opening and closing of the Xuan Fu, exacerbating the condition and forming a vicious cycle.
In recent years, the use of Xuan Fu as a theoretical guide in the treatment of chronic urticaria has been increasingly developed and improved. Apart from wind eruptions caused by the stagnation of defensive Qi in the Xuan Fu from external pathogenic factors, internally, the imbalance of the organs or pathological substances can lead to the loss of nourishment and blockage of the Xuan Fu. Zhang Liyuan proposed that deficiency of Yin and blood can lead to the loss of nourishment and blockage of the Xuan Fu, or when internal Qi is stagnant due to deficiency, it can hinder the physiological function of the Xuan Fu, which can result in the occurrence of the disease. The use of methods that nourish blood and promote Qi circulation and warmth has shown satisfactory results in the treatment of chronic urticaria. Prof. Wang Xiyu has expertise in using Chai Hu decoctions to treat aggravated itching caused by emotional stimulation, where liver wind disrupts the Qi mechanism and leads to abnormal opening and closing of the Xuan Fu. Zhao Bingnan excels in using Ma Huang Tang and similar formulas to regulate the skin pores, open the Xuan Fu, and treat chronic urticaria caused by recurring external pathogenic factors through the "perspiration method."

5. The Ma Huang Lian Qiao Chi Xiao Dou Tang opens the Xuan Fu to expel pathogenic factors both internally and externally, taking into account both internal and external factors

Ma Huang Lian Qiao Chi Xiao Dou Tang is suitable for treating diseases with external pathogenic stagnation in the superficial layers of the skin and internal stagnation of damp-heat. With the continuous enrichment of traditional Chinese medicine theory and in-depth research on the etiology and pathogenesis of diseases by medical experts throughout history, the application scope of Ma Huang Lian Qiao Chi Xiao Dou Tang has been expanding, and its effectiveness in the treatment of skin diseases is also remarkable. Professor Qin Wanzhang excels in using modified versions of Ma Huang Lian Qiao Chi Xiao Dou Tang to treat psoriasis. He believes that aside from blood heat and blood stasis, the blockage and lack of circulation in the Xuan Fu is also an important factor. In addition to the basic formula, he adds herbs with heat-clearing and blood-activating properties, which can effectively open the Xuan Fu and disperse blood stasis and heat. When treating oily skin wind, Yao Chunhai uses the modified Ma Huang Lian Qiao Chi Xiao Dou Tang. This formula is based on clearing heat and eliminating dampness, with the addition of spleen-boosting and dampness-clearing, as well as detoxifying and resolving mass-dispersing herbs. The effect is remarkable. The same formula, with modifications, is also highly effective in treating complicated febrile diseases caused by the invasion of external pathogens. Network pharmacological studies have revealed that the formula contains active components, such as dendrobium extract and resveratrol, which have anti-inflammatory and antioxidant properties, making them effective in the treatment of eczema.

One of the key factors in the treatment of chronic urticaria is the blockage and lack of opening of the Xuanfu (a concept in traditional Chinese medicine). Ma Huang Lian Qiao Chi Xiao Dou Tang possesses the functions of dispelling wind, clearing heat, and promoting diuresis. In clinical practice, it shares similarities with the concept of "opening and closing the Xuanfu for effective treatment," as it is able to regulate the Xuanfu and achieve an appropriate balance of opening and closing.

The Treatise on Cold Damage states: "In cases of illness caused by cold damage, when there is stagnant heat in the interior, the body will become jaundiced. The Ma Huang Lian Qiao Chi Xiao Dou Tang is used as the main medicinal formula." The ingredients for this formula are as follows: "Ma Huang (Ephedra) 2 liang (approx. 50 grams, removing the nodes), Lian Qiao (Forsythia) 2 liang (approx. 50 grams, using the roots), Xing Ren (Apricot Kernel) 40 pieces (approx. 10 grams, removing the tips and skin), Chi Xiao Dou (Adzuki Bean) 1 sheng (approx. 300 grams), Da Zao (Jujube) 12 pieces (blanched), Bai Pi (White Mulberry Root Bark) - half sheng (approx. 150 grams,
sliced), Sheng Jiang (Fresh Ginger) 2 liang (approx. 50 grams), Zhi Gan Cao (Honey-fried Licorice) 2 liang (approx. 50 grams). Take these eight ingredients and add them to a dou (approx. 10 liters) of dilute decoction. First, boil the Ma Huang until it boils again, remove the foam, then add the other herbs and decoct until three sheng (approx. 900 mL) of liquid is left. Remove the dregs and divide the decoction into three doses to be taken warm. Take all three doses within half a day". Within the formula, Ma Huang (Ephedra) and Xing Ren (Apricot Kernel) are combined to promote the diffusion of lung Qi and release the surface, as well as to descend lung Qi and regulate the water pathways. Their pungent, opening, and bitter-descending properties contribute to the restoration of the ascending and descending movement of Qi. Modern pharmacological research has shown that the bioactive components in Ma Huang not only stimulate the central nervous system and treat cardiovascular diseases, but also possess antibacterial and anti-inflammatory properties [19]. The amygdalin in Xing Ren has a wide range of effects in the treatment of respiratory system diseases, and other bioactive components also have immunoregulatory and antioxidant effects [20]. The combination of Ma Huang (Ephedra) and Sheng Jiang (Fresh Ginger) enhances the pungent and warming properties, exerting a diaphoretic effect to dispel wind-cold and relieve superficial muscle tension. Lian Qiao (Forsythia) in the formula has the efficacy of clearing heat and resolving mass. The active substances in Lian Qiao can regulate inflammatory factors and related signaling pathways, thus exerting anti-inflammatory and antiviral effects. Its bioenzymes can scavenge free radicals and exhibit antioxidant properties. Additionally, Forsythia also has anticancer effects [21]. Chi Xiao Dou (Adzuki Bean) promotes diuresis and reduces swelling, helping to eliminate dampness through urination. The presence of substances such as catechins and quercetin in Chi Xiao Dou has therapeutic effects on kidney diseases and skin diseases [22]. Sang Bai Pi (Mulberry Root Bark) replaces Bai Pi (White Mulberry Root Bark) to clear heat and promote diuresis. Pharmacological studies have shown that [23] Sang Gen Ketone B can downregulate the synthesis of inflammatory factors, and the qi-regulating compounds in Sang Bai Pi also exhibit significant antioxidant and blood circulation-promoting effects. Additionally, it has other beneficial effects such as lowering blood sugar levels and possessing anticancer properties. Da Zao (Jujube) and Gan Cao (Licorice) nourish Qi and reinforce the middle burner, supporting the healthy energy while dispersing pathogenic factors. As stated in the Experience Collection in Dermatology: "When the lesion is on the skin, it should be treated lightly and dispersed, and sweating should be induced." The overall formula functions externally to induce sweating and relieve surface symptoms, and internally to clear heat and dispel dampness, as well as to open the Xuanfu (a concept in traditional Chinese medicine) and promote the smoothness of the cutaneous tissues.

There are no direct antipruritic drugs in this formula, yet patients complain of intolerable itching. Therefore, to address this issue, Chan Tui (Cicada Molt), Bai Ji Li (Chinese Dodder), and Fu Ping (Floatingstratum) are added to the original formula to promote rash penetration and relieve wind-induced itching. As it is said, "all pains, itches, and sores are related to the heart." Nocturnal itching that disturbs sleep is caused by the disturbance of the spirit. To address this, Sheng Long Gu (Fossilized Dragon Bone), Sheng Mu Li (Oyster Shell), and Zhen Zhu Mu (Mother of Pearl) are used as heavy substances to calm the mind and improve sleep. If patients experience anxiety and restlessness due to recurrent episodes, medications that relieve depression and soothe the mind, such as He Huan Pi (Albizia Bark) and Fu Shen (Poria with Hostwood), are commonly used.

Research has shown [24] that the incidence of chronic urticaria varies with geographical location and patient constitution. Therefore, in the process of syndrome differentiation and treatment, the three principles of adapting to local conditions, individualizing treatment, and adapting to the season need to be followed. In damp and hot areas, susceptibility to damp evil is high, and it can be combined with damp-heat to cause disease. In treatment, medications such as gypsum, Atractylodes macrocephala, Coptis chinensis, and Coix seed can be used to clear heat and eliminate dampness. In
cold areas, medicines with pungent-warm and dispersing properties, such as ginger, Mulberry twig, and Cinnamon twig, can be used to disperse wind-cold. In summer, when the pores are open, it is appropriate to clear and ventilate the surface. Medicines like peppermint, Agastache rugosa, and mulberry leaf that have a light, clear, and ventilating effect can be used more frequently. In winter, when the pores are blocked, warming medicines such as Ephedra, Cinnamon twig, and mulberry leaf can be used. For robust individuals with tightly closed pores, the dosage of medications can be adjusted as needed during diaphoresis. For individuals with a weak constitution, adjustments in dosage can be made while adding herbs such as Saposhnikovia divaricata, Astragalus, and White Atractylodes to nourish without causing leakage. This approach can expel pathogenic factors without harming the righteous Qi, achieving the goal of expelling pathogenic factors without injuring the upright Qi.

6. An Example of a Medical Case

Patient Mr. Huang, male, 31 years old. Seen on March 22, 2022. Chief complaint: Recurrent itching accompanied by wheals all over the body for 4 years, current episode lasting 1 week. Present medical history: The patient has experienced recurrent itching and wheals all over the body for 4 years, with frequent episodes in spring and autumn. The wheals are red, and the itching is significant. Oral antihistamines gradually alleviate the symptoms, and there are no obvious skin marks after the wheals subside. The current episode has lasted for 1 week, with unsatisfactory response to oral medications such as "Levocetirizine hydrochloride" and "Compound glycyrrhizin tablets." The patient reports dryness and bitterness in the mouth, normal appetite and sleep, decreased urine output, and normal bowel movements. Physical examination: Slight swelling in the eyelid area, scattered red wheals of varying sizes raised above the skin throughout the body. Pale red tongue with thin yellow coating, and a floating pulse. No laboratory tests conducted. Western medicine diagnosis: Chronic urticaria; Traditional Chinese medicine diagnosis: Yinzenh, with an external attack of wind-heat and a complicated pathogenic factor. The prescribed formula is Ma Huang Lian Qiao Chi Xiao Dou Tang combined with Yue Bi Tang with modifications. Composition of the formula: 10g Ephedra, 60g Gypsum Fibrosum, 10g Forsythiae Fructus, 20g Mori Cortex, 30g Adzuki Bean, 10g Jujube, 10g Ginger, 10g Chinese Angelica, 10g Forsythiae Fructus, 10g Honeysuckle Flower. Total of 6 doses, taken orally with a decoction, once a day, divided into 3 servings.

During the second consultation on March 30, 2022, the patient reported that the itching gradually reduced and most of the wheals subsided after taking the medication. There was an increase in urine output and the color was normal. Physical examination: No swelling in the eyelids or face, scattered red wheals of varying sizes on the waist and abdomen, pale red tongue with thin yellow coating, and a floating pulse. The original formula of Gypsum fibrosum was reduced to 40g, and 10g of Rehmannia glutinosa, 10g of Moutan cortex, and 10g of Poria cocos were added. A total of 6 doses, taken orally with a decoction, once a day, divided into 3 servings.

A follow-up visit was conducted half a month later, and the patient's symptoms had subsided.

Commentary: The patient has had a long-term illness, which has led to insufficient righteous Qi. It is common for symptoms to exacerbate in spring and autumn, making the body susceptible to external wind pathogens. The red wheals with obvious itching indicate the influence of a wind-heat pathogen. The head is where the Yang meridians converge, making it prone to invasion by external pathogens. Wind is a Yang pathogen that easily attacks the Yang position, hence the manifestation of wind pathogen ascending to the head. The lungs are the canopy of the body, and wind pathogens initially invade the lungs, causing dysfunction of dispersion and descent, leading to an inability to regulate water pathways. This results in stagnant fluid metabolism and eyelid edema, which is a
manifestation of the struggle between wind and water. Wind pathogen restrains the superficial aspect while the Wei Qi is insufficient to regulate and control fluid excretion. The wind pathogen and water-dampness cannot be expelled through sweating, indicating a disturbance in the skin's pores and the opening and closing of the Xuanfu acupoint. The presence of internal heat results in dry and bitter mouth, pale red tongue, thin yellow coating, and a floating pulse, all of which are manifestations of an external invasion of wind-heat syndrome. Therefore, the prescription uses Ma Huang Lian Qiao Chi Xiao Dou Tang He Yue Bi Tang with modifications. Ma Huang is used to induce sweating and release the exterior, while also promoting lung function and diuresis. It is accompanied by ginger and jujube, which enhance the sweating effect and protect the stomach and spleen. Shi Gao clears heat from the interior. Yin Hua Lian Qiao clears heat, detoxifies, and disperses accumulations. Dang Gui nourishes yin, promotes blood circulation, and moisturizes the skin to alleviate itching. Chi Xiao Dou and Sang Bai Pi clear heat and promote diuresis, allowing the elimination of dampness through urination.

7. Conclusions

According to the theory of Xuan Fu, the key factor in the development of chronic urticaria is the blockage and obstruction of Xuan Fu. Ma Huang Lian Qiao Chi Xiao Dou Tang has the dual effect of treating both the superficial and internal aspects, opening up Xuan Fu, and regulating the internal and external factors. Treatment is adjusted based on the changes in the condition, achieving clinical therapeutic effects, and at the same time, enhancing the guiding role of the Xuan Fu theory in the clinical treatment of skin diseases.

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