

Clinical Observation of Zhuang Medicine Crystal Sugar Ye'An Decoction in Treating Senile Skin Pruritus and Its Effects on Serum IgE

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Abstract: Objective: To discuss the specific application of Zhuang Medicine Crystal Sugar Ye'An Decoction in senile skin pruritus and its effects on serum IgE detection level. **Methods:** 90 patients with senile skin pruritus admitted to our hospital from February 2019 to April 2020 were randomly grouped. The general treatment effect, itching, secondary skin lesion severity, serum IL-6, IgE level and adverse reactions between 45 patients treated with Chlorcyclizine Hydrochloride Tablets (The control group) and 45 patients treated with Crystal Sugar Ye'An Decoction were compared. **Results:** The total effective rate of the treatment in the observation group was 93.33%, much higher than that in the control group, 75.56%. The difference was verified and statistically significant ($P<0.05$). Before the treatment, the itching area, frequency, duration and severity of secondary skin lesions were at the same level ($P>0.05$). After the treatment, the above data were all reduced, and the reduction of the observation group was more significant than that of the control group, indicating the difference was statistically significant ($P<0.05$). Before the treatment, there was no difference in serum IL-6 and IgE test data between the two groups ($P>0.05$). After the treatment, the tendency all declined, and that of the observation group was more obvious, indicating the difference was statistically significant

($P<0.05$). During the experiment, no obvious adverse reactions were observed in both groups. **Conclusion:** In the treatment of patients with senile pruritus, the application of Zhuang Medicine Crystal Sugar Ye'An Decoction is not only safe and reliable, but can promote the improvement of patients' symptoms, adjust the level of inflammatory factors, and enhance clinical efficacy.

Keywords: Zhuang medicine; Senile skin pruritus; Serum IgE; Crystal Sugar Ye'An Decoction

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1 Introduction

As a common disease in the dermatology field, senile skin pruritus is much common in men over 60. The high morbidity, the prolonged disease period, paroxysmal and insufferable itching in various parts of the body seriously disturb elderly patients and reduce their quality of life in later life^[1-2]. The cause of the disease is still unknown, but generally related to dry skin, ageing, impaired skin barrier function as well as decreased sebaceous gland secretion. Nowadays, it is mainly treated with antihistamines. However, no obvious effects and a high clinical

recurrence rate were observed in some patients^[3]. For traditional Chinese medicine, this disease belongs to the categories of “universal eczema”, “pruritus due to wind pathogen” and so on and is related to oldness and weakness as well as invasion of the wind evil^[4]. For Zhuang medicine, the main pathogenesis of this disease is poison and deficiency. Poison includes wind, dampness and heat, while deficiency refers to insufficiency. The basic treatment rule is to clear away heat and toxic materials, and supplement deficiency with Qi^[5]. Used for eczema, skin pruritus and acute filthy disease, etc. with the effects of opening the airway and dispelling wind and arresting itching, Crystal Sugar Ye’An Decoction can open “three passages (airway, anus and gully)” and “two ways (dragon and fire ways)” and achieve the harmony between the heaven, the ground and the human. In this paper, the specific application and effect of the decoction in senile skin pruritus and its impact on the serum IgE were observed. All details were introduced in this paper.

2 Data & Methods

2.1 Clinical Data

90 patients with senile skin pruritus admitted to the Department of Dermatology and Zhuang Medicine of the First Affiliated Medicine of Guangxi University of Chinese Medicine from February 2019 to April 2020 were randomly divided into the Control Group, including 45 cases, 32 males and 13 females, aged from 62 to 79, averagely (69.23±4.68), with the disease course of 1-37 months, averagely (12.53±4.75) months; And the Observation Group, including 45 cases, 30 males and 15 females, aged from 61 to 78, averagely (68.95±5.03), with the disease course of 2-36 months, averagely (12.93±4.36) months. The data between groups were verified to meet the principle of comparability ($P>0.05$).

2.2 Diagnostic criteria

Western medicine diagnosis: According to the description of Chinese Clinical Dermatology, in the beginning, the symptoms include systemic or localized paroxigal skin pruritus, without primary skin lesions. After scratching, there may be scabs, scratches, lichenification and hyperpigmentation, and other secondary skin lesions. The long and delayed disease course has a certain correlation with

emotional diet and external environment^[6].

TCM diagnosis: According to the standards of Surgery of Traditional Chinese Medicine^[7] and Diagnostics of Traditional Chinese Medicine^[8] as well as related literature, the symptoms include dry and itchy skin and desquamation after scratching, which can be aggravated by wind, but be gradually alleviated in mild temperature. Gradually, lichenification can be observed in local areas, accompanied by chills, cold abdominal distension, sore and weak waist and knees, white tongue and thin pulse.

2.3 Inclusion & Exclusion criteria

Inclusion criteria: Those who need to meet the above criteria and are aged 60-79; Those who did not receive treatment drugs about this disease through external use or oral administration within the past 15 days; Those who have offered their informed consent. Exclusion criteria: Those who have severe cardiovascular and cerebrovascular diseases, liver and kidney and hematopoietic system disorders, diabetes and other diseases that can cause skin itching; Those who are prohibited from the test drug ingredients; Those who have autoimmune diseases, allergic diseases and mental disorders.

2.4 Treatment methods

Patients in the Control Group were treated with oral administration of chlorcyclizine hydrochloride tablets, 25 mg/time, 2 times/day for 4 weeks. While patients in the Observation Group were treated with Zhuang Medicine Crystal Sugar Ye’An Decoction with the prescription includes 30g verbena, eucalyptus robusta smith, and sweet broomwort herb for each, 25g Scutellaria barbata, and 20g Lantana camara. One dose of Crystal Sugar Ye’An Decoction was decocted with water daily and placed at about 40 °C, then used to wash the affected area once in the morning and evening for 4 weeks.

2.5 Observation indicators

(1) Clinical efficacy; (2) Itchiness and the severity of secondary skin lesions. The former includes itching area, duration and frequency, which all were evaluated according to the severity of 0-3 points. The higher the score is, the more severe the symptom would be. (3) The levels of serum interleukins IL-6 and IgE. (4) Adverse reactions.

2.6 Effect evaluation

The clinical efficacy was evaluated according to

Guidelines for the Clinical Research of Chinese Medicine New Drugs^[9] and related literature, including Cured: Pruritus completely disappeared, and the skin lesions regressed, with the efficacy index ≥ 95 ; Significantly effective: Pruritus was obviously alleviated and the skin lesions were significantly improved with the efficacy index between 70% and 94%; Improved: Pruritus and skin lesions were alleviated and improved with the efficacy index between 30% and 69%; Ineffective: There was no change in symptoms and signs, and the efficacy index was less than 30% Efficacy index = (Pre-treatment Score - Post-treatment Score)/ Pre-treatment Score $\times 100\%$.

2.7 Statistical analysis

The test data of this experiment were all effectively entered in SPSS22.0, the total efficiency of medical

data between groups counted and the complication rate during medical care were shown as (%), and the chi-square test was actively used; The measurement data of gastrointestinal function recovery indicators between groups and life quality scores were shown by $(\bar{x} \pm s)$, and the t-test was actively used, and the difference was statistically significant ($P < 0.05$).

3 Results

3.1 Comparison of total medical effective rate between the two groups

The total effective rate of treatment in the Observation Group was 93.33%, much higher than 75.56%, that in the Control Group. The difference was verified and statistically significant ($P < 0.05$). See Table 1.

Table 1. Comparison of the total effective rate between the two groups [$n(\%)$]

Group	Cured	Significantly effective	Improved	Ineffective	Total effective rate
The Observation Group ($n = 45$)	24(53.33)	10(22.22)	8(17.78)	3(6.67)	42(93.33)
The Control Group ($n = 45$)	16(35.56)	9(20.00)	9(20.00)	11(24.44)	34(75.56)
χ^2	-	-	-	-	5.414
P	-	-	-	-	0.020

3.2 Comparison of itching scores between the two groups

Before the treatment, the itching area, frequency, duration and severity of secondary skin lesions were at the same level ($P > 0.05$). After the treatment, the

above data were all reduced, and the reduction of the Observation Group was more significant than that of the Control Group, indicating the difference was statistically significant ($P < 0.05$). See Table 2.

Table 2. Comparison of itchiness and severity score of secondary skin lesions between the two groups ($\bar{x} \pm s$, points)

Project	Time	The Observation Group ($n = 45$)	The Control Group ($n = 45$)	t	P
Itching area	Before the treatment	2.12 \pm 0.56	2.25 \pm 0.61	1.053	0.295
	After the treatment	0.45 \pm 0.13	1.43 \pm 0.42	14.952	0.000
	t	19.487	7.427	-	-
	P	0.000	0.000	-	-
Itching frequency	Before the treatment	1.98 \pm 0.65	1.79 \pm 0.54	1.508	0.135
	After the treatment	0.62 \pm 0.31	1.28 \pm 0.45	8.102	0.000
	t	12.668	4.867	-	-
	P	0.000	0.000	-	-
Itching duration	Before the treatment	1.88 \pm 0.46	1.81 \pm 0.53	0.669	0.505
	After the treatment	0.63 \pm 0.25	1.19 \pm 0.38	8.259	0.000
	t	16.016	6.377	-	-
	P	0.000	0.000	-	-
Secondary lesions	Before the treatment	5.89 \pm 1.25	6.03 \pm 1.42	0.496	0.621
	After the treatment	2.18 \pm 1.67	4.23 \pm 2.09	5.140	0.000
	t	11.930	4.779	-	-
	P	0.000	0.000	-	-

3.3 Comparison of serum factor and IgE test results between the two groups

Before the treatment, there was no difference in serum IL-5 and IgE test data between the two groups

($P>0.05$). After the treatment, both them showed a declined tendency, and that of the Observation Group was more obvious, indicating the difference was statistically significant ($P<0.05$). See Table 3.

Table 3. Comparison of serum factor and IgE test results between the two groups

Project	Time	The Observation Group (n = 45)	The Control Group (n = 45)	t	P
Il-6 (pg / mL)	Before the treatment	5.46±0.51	5.57±0.38	1.160	0.249
	After the treatment	4.12±0.24	5.23±0.64	10.894	0.000
	t	15.948	6.567	-	-
	P	0.000	0.000	-	-
IgE (ng / mL)	Before the treatment	63.56±0.37	63.49±0.32	0.960	0.340
	After the treatment	57.75±0.64	61.73±0.45	34.125	0.000
	t	52.721	21.381	-	-
	P	0.000	0.000	-	-

3.4 Safety assessment

During the experiment, no obvious adverse reactions were observed in both groups.

4 Discussion

As a single skin itch, senile skin pruritus shows no systemic symptoms and no primary lesions. However, due to its wide range and the difficulty in controlling the symptoms of itching, and the physical stimulation caused by continuous scratching, the condition will be further aggravated and the treatment will be increasingly difficult^[10-11]. With the increasing ageing tendency in recent years, to seek safe and reliable medical treatments has become a diligent pursuit for physicians.

As a new generation of long-acting H1 receptor antagonists with strong antihistamine activity, chlorocycline hydrochloride tablets feature fast absorption, fast drug action, and no interference with liver and kidney, and has been widely used in allergic and itching dermatoses by effectively reducing the level of inflammatory factors and itching scores. However, the single drug effect was not good^[12-13]. Therefore, this study started from the perspective of Zhuang medicine and combined with Zhuang Medicine Crystal Sugar Ye'An Decoction. The results showed that the total clinical effective rate of the Observation Group was higher than that of the Control Group. The itching area, frequency, duration and the severity of secondary lesions as well as serum IL-5 and IgE detection data of the Observation Group were all lower than that of the Control Group, and there were no obvious adverse reactions

in both groups. This indicates that the combined application of chlorocycline hydrochloride and Crystal Sugar Ye'An Decoction is feasible, and the related symptoms have been greatly improved.

In the Zhuang medical system, skin pruritus is caused by "toxin and deficiency". Due to human is associated with nature, the skin on the surface of the body can contact the outside and defend the exogenous evil; If vital Qi is sufficient in the fight between vital Qi and evil toxin, the human will be safe. If vital Qi fails to defeat evil toxin, then toxin will damage the skin and bones, or damage the organs and important passages, and further block the "three passages" and "two ways", and cause the blood and blood obstructed, which leads to a disease^[14-16]. In this paper, Crystal Sugar Ye'An Decoction can open the airway, dispel wind and itch, clear away heat and detoxify. The cold verbena in the prescription commonly used in heat-toxic skin scabies can promote blood circulation to remove the meridian obstruction, clear away heat and toxic materials and effectively relieve the infection that may occur after scratching; Meanwhile, it can effectively open dragon and water ways; As a cold and sour drug of Labiatae, *Scutellaria barbata* can effectively activate blood and remove stasis, clear away heat and toxic materials and open the dragon and water ways as well as heal up sore and promote granulation. Besides, rich in amino acids and vitamins, the drug can regulate the body's immunity without impact on the liver index; Leaves of *eucalyptus robusta smith*, an evergreen tree, can open air passage, remove wind and evil and have a therapeutic effect on upper respiratory tract infection and pneumonia, etc. Also, with the effects

of sterilizing skin and diminishing inflammation, corrosion control and itching relief, it has a wide application in skin diseases like eczema and tinea pedis, etc.; Sweet broomwort herb can reduce fever and remove wind, detoxicate, induce diuresis and disperse swelling; Root, leaves and flower of Lantana camara can be used to eliminate stagnation, stop the pain, clear away heat and toxic materials, and dispel wind and arrest itching. According to the prescription, the skin lesions were washed outside to open the dragon and fire ways, and adjust Qi and blood, as well as balance the heaven, the ground and the human. Then, itches would be removed and patients can be recovered. The results of this article have confirmed what mentioned above.

5 Conclusion

In the treatment of senile pruritus patients, the application of Crystal Sugar Ye'An Decoction is safe and reliable and can promote the improvement of patients' symptoms, adjust the level of inflammatory factors, enhance clinical efficacy.

References

- [1] Peng XB. Pruritic skin diseases of the elderly [J]. Chinese Journal of Dermatology and Venereology, 2000, 14 (3): 173-174.
- [2] Liang JQ, Wu GY, Chen DJ, et al. Analysis of medication rules for senile pruritus based on association rules [J]. Chinese Journal of National Folk Medicine, 2018, 27 (18): 4-8.
- [3] Ma JN. Clinical observation on the treatment of senile pruritus with integrated traditional Chinese and western medicine [J]. The World Clinical Medicine, 2016, 10 (20): 43-44
- [4] Zhang JJ. Analysis of the research progress of traditional Chinese medicine in treating senile pruritus [J]. Sichuan Journal of Anatomy, 2018, 26 (2): 133-134.
- [5] Tang J, Jiang ZL, Wei GB, et al. Clinical research progress of Zhuang medicine line moxibustion therapy for skin diseases [J]. Chinese Journal of National Medicine, 2017, 23 (4): 56-59.
- [6] Zhao B. Chinese Clinical Dermatology [M]. 3rd Edition. Nanjing: Jiangsu Science and Technology Press, 2001: 707-708.
- [7] Li YQ. Traditional Chinese Medicine Surgery [M]. 3rd Edition. Beijing: China Press of Traditional Chinese Medicine, 2012: 178-180.
- [8] Chen JX. Diagnostics of Traditional Chinese Medicine [M]. 2nd Edition. Beijing: People's Medical Publishing House, 2012: 109.
- [9] Zheng XY. Guiding Principles of Clinical Research on New Chinese Drugs (Trial) [M]. Beijing: China Medical Science and Technology Press, 2002: 385-388
- [10] Luo YH, Li SJ. Observation of the role of changes in serum IFN- γ , IL-2, TNF- α and IgE levels in the pathogenesis of senile pruritus [J]. Chinese Medical Guide, 2018, 16 (19) : 40-41.
- [11] Wang CM, Huang WH. Clinical Observation of 45 Cases of Senile Skin Itching Treated by Yangxue Runzao Recipe and Histamine H1 Receptor Antagonist [J]. Zhejiang Journal of Traditional Chinese Medicine, 2016, 17 (1): 65-66.
- [12] Yang DQ, Li ZM, Li J, et al. Observation on 60 cases of senile pruritus treated by integrated traditional Chinese and western medicine [J]. Journal of Practical Traditional Chinese Medicine, 2016, 32 (6): 567-568.
- [13] Kang J. The application of clobirizine hydrochloride tablets in patients with urticaria and its effect on pruritus score [J]. Dermatology and Venereology, 2018, 40 (4): 95-97.
- [14] Jiang ZL, Deng GY, Wang JH, et al. Clinical observation of Zhuang doctor skin acupuncture combined with Zhuang medicine external washing to treat itching symptoms of chronic eczema[J]. Dermatology and Venereology, 2018, 40 (4): 530-531
- [15] Zhang Y. Observation on the curative effect of Zhuang medicine Bingtangye Eucalyptus Decoction on senile skin itching [J]. Journal of Practical Traditional Chinese Medicine, 2017, 33 (11): 1328-1329.
- [16] Fan XT, Bai L, Zhong J. Analysis of the characteristics of the internal treatment of Zhuang medicine to treat skin diseases [J]. Chinese Journal of National Medicine, 2015, 21 (12): 12-13.