

Clinical Efficacy of Huanglian Ointment in the Treatment of Chronic Eczema

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Abstract: *Objective:* To investigate and analyze the clinical efficacy of Huanglian ointment in the treatment of chronic eczema. *Methods:* 114 cases of chronic eczema patients admitted to the Department of Dermatology of our hospital from January 2023 to January 2024 were selected as the study subjects. They were divided into a study group ($n = 57$) and a reference group ($n = 57$) using the double-blind method. The study group was treated with dialyzed Huanglian ointment, while the reference group was treated with conventional treatment. Symptom scores, inflammatory levels, treatment effects, and immune indexes of the two groups were similar before treatment. *Results:* After treatment, the symptom scores of the study group were significantly lower than those in the reference group ($P < 0.05$). Besides, the interleukin-2 (IL-2), tumor necrosis factor- α (TNF- α), interferon- γ (IFN- γ), and other inflammatory indicators of the study group were significantly better than those of the reference group ($P < 0.05$). The total efficacy of treatment in the study group was significantly higher than that in the reference group ($P < 0.05$). Furthermore, after treatment, the immunity indexes such as CD3⁺, CD4⁺, and CD8⁺ of the study group were significantly better than those of the reference group, ($P < 0.05$). *Conclusion:* Huanglian ointment is extremely effective for treating chronic eczema so this treatment program should be popularized

Keywords: Huanglian ointment; Chronic eczema; Treatment

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1. Introduction

Chronic eczema is a chronic inflammatory disease with unclear pathogenesis. It can be caused by blood circulation disorders, abnormal immune system function, chronic infections, and other factors. Other than chronic eczema, there are also acute and subacute eczema^[1]. The incidence of chronic eczema has been increasing over the years. As this disease is difficult to treat, it has become a challenge in the field of dermatology^[2]. While Western medicine often relies on antibiotics and antihistamines for treating chronic eczema, which can yield short-term therapeutic benefits, prolonged use may lead to dependency and trigger adverse skin reactions^[3]. In contrast, Chinese medicine views chronic eczema as manifestations of “wet sores” or “yellow water sores” and emphasizes holistic treatment targeting both symptoms and underlying causes.

Huanglian ointment, composed of Yalian and other Chinese herbs, is a traditional remedy renowned for its ability to clear heat, detoxify, and alleviate inflammation^[4], making it suitable for treating chronic eczema^[4]. The ingredients of Huanglian Guai Skin Ointment consist of natural Chinese herbs, which are less likely to induce drug resistance and typically do not lead to adverse reactions. This paper aims to investigate and assess the clinical effectiveness of Huanglian ointment in managing chronic eczema.

2. Information and methods

2.1. General information

From January 2023 to January 2024, a total of 114 patients diagnosed with chronic eczema were admitted to the Department of Dermatology in our hospital. They were divided into two groups using a double-blind method: the study group ($n = 57$) and the reference group ($n = 57$). In the study group, there were 29 males and 28 females, with an age range of 23 to 74 years and a mean age of 47.52 ± 1.58 years. The duration of the disease ranged from 2 to 14 months, with a mean duration of 8.04 ± 0.34 months. In the reference group, there were 25 males and 32 females, with an age range of 23 to 75 years and a mean age of 47.54 ± 1.61 years. The duration of the disease ranged from 2 to 15 months, with a mean duration of 8.07 ± 0.37 months. Statistical analysis showed no significant differences in gender, age, or disease duration between the two groups ($P > 0.05$).

Inclusion criteria: (1) Clinical diagnosis of chronic eczema, (2) knowledge of and consent to participation in the study. Exclusion criteria: (1) Presence of malignant tumors, (2) serious underlying diseases, (3) mental illness, (4) blood system diseases, (5) pregnancy or lactation.

2.2. Methods

The reference group was treated with conventional therapy: hydrocortisone butyrate cream was applied to the affected area 2 times/d for 28 d.

The study group was treated with Huanglian ointment: Huanglian ointment (composed of Yalian, Huangbai, *Radix Rehmanniae Praeparata*, *Radix Angelicae Sinensis*, and *Curcuma longa*) was applied the same way as hydrocortisone butyrate.

2.3. Observation indexes

- (1) Symptom scores: Itching, flaking, rash, scratching (6 points for each item); the more severe the symptoms, the higher the score.
- (2) Inflammatory indicators: Interleukin-2 (IL-2), tumor necrosis factor- α (TNF- α), and interferon- γ (IFN- γ).
- (3) Treatment efficacy: Symptom scores decreased by more than 95% were considered “very effective,” symptom scores decreased by 61%–94% were considered “effective,” and symptom scores decreased by 20%–60% were considered “ineffective.”
- (4) Immune indexes: CD3⁺, CD4⁺, and CD8⁺ T cell levels.

2.4. Statistical analysis

The data were processed and analyzed using SPSS 21.0 statistical software. Count data were presented as the number of cases (n) and percentages (%), and analyzed using the chi-squared test (χ^2). Measurement data were presented as mean \pm standard deviation (mean \pm SD) and analyzed using the t -test. Statistical significance was considered at $P < 0.05$.

3. Results

3.1. Symptom scores

Before the administration of medication, the comparison of itching, flaking, rash, scratching, and other symptom scores between the two groups showed no statistically significant difference ($P > 0.05$). However, after the administration of medication, the symptom scores in the study group, including itching, flaking, rash, and scratching, were significantly lower than those in the reference group ($P < 0.05$). Further details are shown in **Table 1**.

Table 1. Comparison of the symptom scores before and after treatment between the two groups (mean \pm SD, points)

Groups	<i>n</i>	Itching		Flaking		Rash		Scratching	
		Before	After	Before	After	Before	After	Before	After
Study group	57	4.87 \pm 0.86	1.08 \pm 0.21	4.57 \pm 0.76	0.95 \pm 0.25	4.62 \pm 0.74	0.84 \pm 0.29	4.56 \pm 0.72	0.84 \pm 0.24
Reference group	57	4.92 \pm 0.89	2.34 \pm 0.64	4.62 \pm 0.79	1.82 \pm 0.41	4.59 \pm 0.78	1.66 \pm 0.43	4.79 \pm 0.81	1.14 \pm 0.52
<i>t</i>	-	0.3050	14.1228	0.3443	13.6781	0.2106	11.9364	1.6022	3.9547
<i>P</i>	-	0.7609	0.0000	0.7312	0.0000	0.8335	0.0000	0.1119	0.0001

3.2. Inflammatory indexes

Before the administration of medication, the inflammatory levels of IL-2, TNF- α , IFN- γ , and other inflammatory markers of the two groups showed no statistically significant differences ($P > 0.05$). However, after the administration of medication, the inflammatory indexes in the study group significantly improved compared to those in the reference group ($P < 0.05$), as illustrated in **Table 2**.

Table 2. Comparison of inflammatory levels before and after treatment between the two groups (mean \pm SD, ng/mL)

Groups	<i>n</i>	IL-2		TNF- α		IFN- γ	
		Before	After	Before	After	Before	After
Study group	57	45.14 \pm 5.05	51.47 \pm 5.63	5.79 \pm 1.25	1.42 \pm 0.35	834.15 \pm 85.67	2,356.87 \pm 253.48
Reference group	57	45.36 \pm 5.14	47.58 \pm 5.24	5.67 \pm 1.34	3.05 \pm 0.86	834.98 \pm 85.14	1,465.25 \pm 161.25
<i>t</i>	-	0.2305	3.8185	0.4943	13.2539	0.0518	22.4070
<i>P</i>	-	0.8181	0.0002	0.6220	0.0000	0.9587	0.0000

3.3. Treatment efficacy

The total efficacy of the treatment received in the study group was significantly higher than that of the reference group ($P < 0.05$), as shown in **Table 3**.

Table 3. Comparison of the treatment effects of the two groups is as follows [*n* (%)]

Groups	<i>n</i>	Very effective	Effective	Ineffective	Total efficacy
Study group	57	38 (66.67)	18 (31.58)	1 (1.75)	56 (98.25)
Reference group	57	29 (50.88)	21 (36.84)	7 (12.28)	50 (87.72)
χ^2	-	-	-	-	4.8396
<i>P</i>	-	-	-	-	0.0278

3.4. Immune indexes

Before the administration of medication, the comparison of immunity indexes (CD3⁺, CD4⁺, CD8⁺) of the two groups showed no statistically significant differences ($P > 0.05$). However, after the administration of medication, the immunity indexes in the study group significantly improved compared to those in the reference group ($P < 0.05$).

Table 4. Comparison of immune indexes before and after treatment between the two groups (mean \pm SD)

Groups	n	CD3 ⁺		CD4 ⁺		CD8 ⁺	
		Before	After	Before	After	Before	After
Study group	57	51.14 \pm 4.95	62.12 \pm 5.96	31.25 \pm 3.78	38.47 \pm 3.24	33.57 \pm 3.24	25.12 \pm 2.06
Reference group	57	51.86 \pm 4.54	59.74 \pm 5.14	31.95 \pm 3.54	36.14 \pm 3.29	33.65 \pm 3.15	27.41 \pm 2.13
t	-	0.8093	2.2830	1.0204	3.8096	0.1336	5.8346
P	-	0.4201	0.0243	0.3097	0.0002	0.8939	0.0000

4. Discussion

Chronic eczema is frequently encountered in clinical settings, and its causative factors can be categorized into two main groups: internal and external factors. Internal factors encompass neuropsychological factors, and endocrine and metabolic changes, among others, while external factors include environmental influences and exposure to chemical substances^[5]. After the onset of the disease, the local skin becomes rough and hypertrophied, accompanied by moss-like changes and itching^[6]. Currently, there is no definitive cure for chronic eczema. The primary treatment approach focuses on managing the disease progression, alleviating symptoms, and preventing recurrences. External medications, such as glucocorticoid agents and calcineurin inhibitors, are commonly prescribed for treating chronic eczema. Additionally, antihistamines and antibiotics may be used to address secondary infections or symptoms that impact the patient's quality of life and sleep^[7]. Western medicines may provide temporary relief from chronic eczema symptoms; however, they often fail to sustain long-term efficacy. Moreover, discontinuing medication can lead to symptom recurrence and drug dependence. In contrast, Chinese medicine categorizes chronic eczema as "wet sores" or "wet ulcers" and attributes the condition to factors such as blood deficiency, wind dryness, and excessive dampness. Treatment principles typically involve clearing heat, cooling the blood, dispelling wind, and removing dampness^[8]. Huanglian ointment, a traditional Chinese medicine preparation, comprises Yalian, Phellodendron bark, *Radix Rehmanniae Praeparata*, *Radix Angelicae Sinensis*, *Curcuma longa*, and other traditional Chinese herbs. Yalian is particularly effective in treating eczema. It possesses properties such as dispelling dampness and clearing heat, promoting blood circulation, resolving blood stasis, and promoting tissue regeneration. As a result, it is extensively employed in the management of chronic eczema^[9]. The localized action of the drug bypasses the liver's first-pass effect and minimizes irritation to the digestive system, leading to increased local drug concentration and enhanced therapeutic effects^[10]. Modern pharmacological research has revealed that Yalian contains alkaloids with anti-inflammatory, antibacterial, and antioxidant properties. Phellodendron bark contains flavonoids and phenolics that inhibit dermatophytosis. Angelica Sinensis contains ferulic acid, exhibiting broad-spectrum antimicrobial effects by hindering the growth and reproduction of pathogenic bacteria. Turmeric contains sterols and a small amount of alkaloids, which inhibit inflammatory reactions. Shengdihuang contains catalpa, aiding in draining fluids, stopping bleeding, and reducing inflammation. The application of Huanglian ointment effectively relieves heat and pain, moisturizes the skin, and promotes tissue regeneration. Its direct delivery to the affected areas ensures both efficacy and safety.

In conclusion, Huanglian ointment is effective in treating chronic eczema, so it is recommended to be widely promoted in the clinic.

Disclosure statement

The author declares no conflict of interest.

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