

Evaluation of the efficacy of intervention in the management of AD chronic disease based on the theory of “prevention of the recrudescence of disease”

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Abstract.

BACKGROUND: Atopic dermatitis (AD) is a common inflammatory skin disease with a chronic course and a high recurrence.

OBJECTIVE: Based on the theory of “prevention and recovery after ulceration”, the application value and significance of compound ginseng cicada decoction in the intervention of chronic disease management in patients with AD were retrospectively analyzed.

METHODS: Through clinical retrospective observation, 60 patients with spleen deficiency and moisture type AD admitted to the outpatient clinic of our hospital after January 2019 were analyzed. After comprehensive treatment until the patient's Investigator's Global Assessment (IGA) Scale score is lower than 2 points, the study group was divided into a research group and a control group, according to the actual clinical follow-up whether to take compound ginseng cicada soup. The control group carried out chronic disease management education, conventional emollient topical with no drug maintenance intervention, and the research group included clinical patients who were orally administered to compound ginseng cicada decoction for 1 month, observed for 3 months, and compared with the clinical recurrence (recurrence rate, time to first recurrence, severity at recurrence, degree of pruritus), and the quality of life.

RESULTS: After 3 months, the relapse rate, recurrence severity, itching degree and quality of life impact scores of the study group were significantly lower than those of the control group, and there were no obvious adverse events.

CONCLUSION: The combined application of compound ginseng cicada decoction in the management of chronic diseases in patients with atopic dermatitis has the positive significance of reducing AD recurrence, alleviating the severity of recurrence, and effectively improving the life quality of patients. This method has high safety and is worthy of wide application.

Keywords: Compound ginseng cicada decoction, atopic dermatitis, slow disease management, prevention of the recrudescence of disease

1. Introduction

Atopic dermatitis (AD) is a common inflammatory skin disease with a chronic course and a high recurrence rate, and the main clinical symptoms are recurrent skin lesions and severe itching [1]. Current

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studies reveal that the occurrence of AD is related to genetic, immune, psychiatric, and environmental factors, and often begins in infancy and childhood [2], which has a serious impact on the life quality of patients and their family members. The cause of AD is chronic and persistent, and the treatment and management of AD is internationally recognized as “step grading treatment”. First, the patients are informed and managed. Only when the skin is dry, emollients and moisturizers are used to maintain skin moisturization. For stubborn and severe patients, systematic treatment is adopted, and the immune mechanism is the TCM mechanism of AD pathogenesis, the incidence and recurrence rate are high, and there is still a lack of specific drugs, which has become a hot spot in clinical research in recent years, and the goal of AD research is to establish a long-term management plan and to reduce its recurrence [3].

The theory is based on the idea of “Prevention of the recrudescence of disease”, and in accordance with the basic principle of “regulation as the main and treatment as the supplement” [4], after the initial recovery of some diseases, appropriate conditioning and maintenance methods or health care methods are adopted to restore the body’s internal organ function, qi, blood and fluid, thereby promoting the body to restore a healthy state and prevent the recurrence of the disease [5]. That is, when a person is recovering from a certain disease, it is recommended to continue to regulate the healthy qi, eliminate residual evil, and be cautious against triggers, so as to achieve “prevention and recovery after illness”. This theory complements the Western medicine theory of “chronic disease management”. Chronic disease management is to provide continuous medical support for patients with chronic diseases in the clinic [6], in addition to drug guidance, index detection, including medical knowledge, concepts, nursing and other related soft support. It has been used in the management of a variety of chronic diseases, and has achieved better control of the disease and delayed the recurrence effect, such as common chronic obstructive pulmonary disease and chronic kidney disease [7,8]. Prior studies show that the 7-year recurrence rate of AD patients is as high as 75.9%, which is the first skin disease burden among non-fatal diseases. Based on this, in October 2022, China’s first <Atopic Dermatitis Full Name Management Consensus> was officially released, this <Consensus> will fill the gap in the management of the whole course of moderate and severe atopic dermatitis patients, and ultimately achieve the purpose of improving the current status of treatment, reducing AD recurrence and reducing the burden of this disease. The application of traditional Chinese medicine (TCM) has clear efficacy and high safety in the treatment of AD and the reduction of recurrence [9]. Since 2019, based on the theory of “prevention of the recrudescence of disease”, we have combined the application of the experience of Dr Chen Ninggang, the director of Yongpai’s famous TCM practitioner, in the management of chronic diseases in the stable stage of patients with spleen deficiency and wet AD. The results have been obvious with the review and analysis report as follows.

2. Clinical data

2.1. General information

We have selected 60 patients who visited the dermatology clinic of Ningbo Hospital of TCM from January 2019 to January 2022 and were diagnosed with AD and were characterized by spleen deficiency and moisture type. They were within 1 week of clinical remission after drug control, and were divided into the research group and control group according to whether compound ginseng cicada soup was used in the management of clinical chronic diseases. This includes 30 cases in the research group, aged 7–59 years with an average of 28.60 ± 14.55 years, and another 30 cases in the control group, aged 7–58 years with an average of 29.07 ± 15.06 years. There was no significant difference in age and disease course between the two groups ($P > 0.05$), which makes the two groups comparable.

2.2. Diagnostic criteria

The diagnosis of AD meets the relevant criteria in the [10] <The Guidelines for the Diagnosis and Treatment of Atopic Dermatitis in China>, including the main criteria plus 3 or more secondary criteria. Main criteria: itching of the skin. Secondary criteria: (1) history of flexor dermatitis eczema, including neck, elbow fossa, anterior, popliteal fossa; (2) history of allergic rhinitis or asthma (or history of atopic disease in first-degree relatives of children under 4 years of age); (3) History of dry skin on the trunk and other parts of the body in recent years; (4) Flexor eczema (eczema on cheeks/forehead and extensor limbs under 4 years of age); (5) Onset before the age of 2 (suitable for patients over 4 years old).

The TCM diagnosis of AD meets the criteria of spleen deficiency and wetness in the [11] <Expert Consensus on the Diagnosis and Treatment Plan of Atopic Dermatitis TCM>, with erythema, papules, papules scattered in the trunk, limbs or other parts, fatigue, loss of appetite, loose stools, light tongue, white moss, slow pulse or light fingerprint color.

2.3. Inclusion criteria

(1) Comply with the above diagnosis of Chinese and Western medicine; (2) Aged 5 years or above; (3) Follow the doctor's advice and return to the doctor at the specified time.

2.4. Exclusion criteria

(1) Accompanied by serious heart disease, diabetes, kidney disease and other internal medical diseases, or autoimmune diseases; (2) Combination of other skin diseases; (3) Pregnant and lactating; (4) Fail to follow the doctor's advice and return to the doctor.

3. Intervention methods

3.1. Control group

Routine chronic disease management education, such as avoiding cravings for spicy hair, avoiding repeated skin irritation, conventional emollients for external use.

3.2. Research group

On the basis of the control group, patients in this group were given in addition the oral administration of the compound ginseng cicada soup. Compound Shencican Decoction consists of 10 g Codonopsis, 3 g, white art, 10 g, Tuckahoe, 15 g, stir-fried white lentils, 15 g Coix seed, 10 g astragalus root, 10 g silkworm sand, stir-fried malt, 10 g stir-fried rice sprouts, 10 g fried chicken gold, 10 jujubes and 5 g raw licorice. Patients were to take the juice decocted in water, 1 dose per day, 150 ml each time, 2 times a day.

3.3. Treatment course

Continuous intervention for 4 weeks with 2-month observation were given. The course of treatment was assessed using an IGA score lower than 2. IGA score: score scale is between 0 to 5 points. 0 point means no skin lesions, 2 to 4 points refer to mild, moderate and severe skin lesions, respectively, while 5 points indicate very serious skin lesions. Repeated diseases found during the course of treatment can be given the treatment of hydrocortisone butyrate (Manufacturer: Hunan Dino Pharmaceutical Co., Ltd.; Approval number: Sinopharm H20083557), with 2 times/day topical until the IGA score is lower than 2 points. No other systemic therapy or external methods were used during the 3-month period.

Table 1
The comparison of relapse between the two groups of patients

Group	Relapse (%)	Relapse time in each case (time)	First time of relapse (day)	Duration of relapse (day)
Research group ($n = 30$)	6 (20.00)	0 (0, 0)	41.53 ± 7.73	10.02 ± 2.81
Control group ($n = 30$)	18 (60.00)	1 (0, 1)	30.04 ± 11.06	17.80 ± 5.91
$\chi^2/t/Z$	10.357	-3.008	2.807	-4.312
P	0.001	0.002	0.015	0.00

Note: Compared with the control group, $P < 0.05$.

4. Compute evaluation indicators

Relapse ($IGA > 2$) was recorded in both groups, including the number of relapses, the time of the first recurrence (between the start of the study and the first recurrence), and the duration of the relapse.

Apply the Eczema Area and Severity Index (EASI) to assess the severity of the patient's recurrence. Visual Analogue Score (VAS) was applied to evaluate the patient's itching at the time of recurrence. VAS: a horizontal line about 10-centimetre long is drawn on a piece of blank paper, the leftmost end represents 0 points, and the rightmost end represents 10 points. According to his/her own itchiness, the patient marks in the horizontal line, and the reading according to the mark location is then the VAS score. The higher the score represents the more severe the itching. Dermatology Life Quality Index (DLQI) scores were used to evaluate the life quality in both groups. That is, using the DLQI scale, a total of 10 questions with a retrospective evaluation of the life quality related to skin diseases in the past one week were asked, and the total scores of each question is added together with a maximum of 30 points. The higher the total score value, the worse the quality of life. The observation period is 3 months.

Safety analysis

Whether adverse reactions occurred during the intervention was observed, including dry mouth, nausea, diarrhea, etc.

5. Statistical analysis

The SPSS 22.0 statistical software was used for the analysis. The count data was expressed as a rate (%), and a χ^2 test was performed. Measurement data that conform to the normal distribution are represented by $(\bar{x} \pm s)$, with t -test; Dose data for non-normal sutures are expressed as $[M (Q25, Q75)]$, ranked and tested. $P < 0.05$ is statistically significant.

6. Results

6.1. Comparison of recurrence between the two groups of patients

Results reported in Table 1 below show that the recurrence rate, number of recurrences per case and recurrence duration in the research group were significantly lower than those in the control group, and the difference between the two groups was statistically significant ($P < 0.01$). Also, the time to first recurrence in the research group was significantly late than that of the control group, and the difference between the two groups was statistically significant ($P < 0.01$).

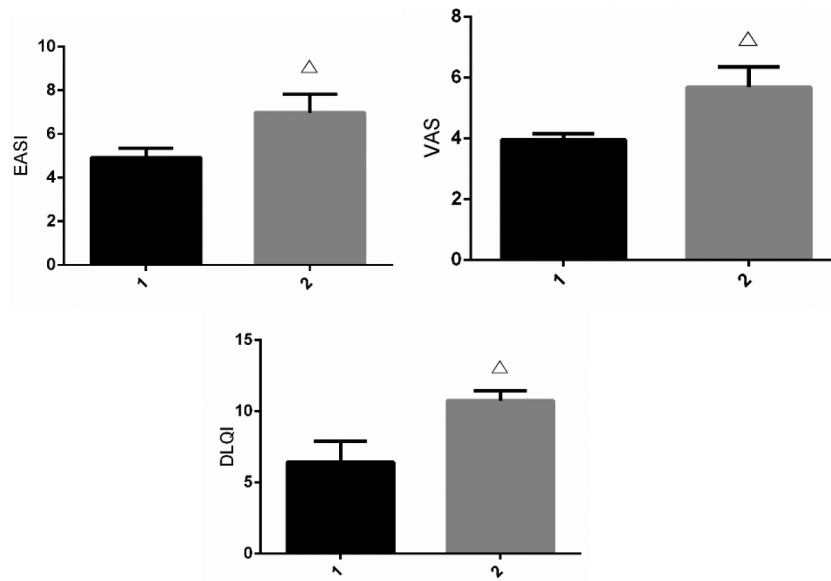


Fig. 1. Column 1 represents the research group and column 2 represents the control group, $P < 0.01$.

6.2. Comparison of the severity, itching and life quality of the two groups of patients at the time of recurrence

Results are reported in Fig. 1. The EASI score, VAS score of itching, and DLQI score in the research group were significantly lower than those in the control group at the time of recurrence, and the differences were statistically significant ($P < 0.01$).

6.3. Observation of adverse reactions

There were no obvious adverse reactions during the intervention.

7. Discussion

As a chronic recurrent inflammatory skin disease [1], AD has a wide range of age groups, high prevalence and recurrence rate. Prior studies have shown that the recurrence rate of AD is as high as 70%, and the life quality of AD patients and their families is worrying, with heavy economic burden. At present, the treatment of AD includes topical calcineurin inhibitors, glucocorticoids, phototherapy, oral antihistamines, oral immunosuppressants, injectable biological agents, etc. [12,13,14,15]. However, the existence of problems such as easy repetition, poor safety for long-term use, and heavy economic burden limit the prevention and treatment of AD by current methods. In the past two years, although dupilumab and JAK inhibitors have been frequently used with considerable efficacy, the actual research data still need to be further accumulated and summarized [16,17]. Therefore, in view of the course and characteristics of AD, its full-process management has gradually received the attention from the public [18], and it is especially important to use safe and effective methods to prolong the long-term efficacy of patients and reduce the recurrence of the disease. In the management of chronic diseases in AD, patient health education and avoidance of predisposing factors have been widely recognized by the population. At

present, studies have shown that AD patients in remission still have certain subclinical inflammatory reactions in the body, and there is lymphocyte infiltration in local tissues, coupled with strong affinity of inflammatory factors in the body, so AD patients are prone to recurrent inflammatory reactions [18, 19], resulting in their repetition with difficulty to heal. It is speculated that in the management of chronic diseases in AD, the use of safe and effective drugs to control the subclinical inflammatory response in the body, or the reduction of the affinity of inflammatory factors in the patient's body can effectively inhibit the recurrence of AD. In recent years, the efficacy of TCM in the treatment of atopic dermatitis is precise and the advantages are obvious.

The summarization of the etiology and pathogenesis of AD has been prevalent to ample doctors since ancient times. Some scholars have carried out certain statistics on ancient books and literature related to AD, and results show that within 71 studies, 48 described 7 etiology and pathogenesis, which are mainly caused by wind, dampness and heat, but also by fetal toxic heat, excessive heart fire, blood dryness, spleen deficiency, eating disorders, etc. According to the characteristics of modern life, recent doctors start to believe that the onset of AD is closely related to the function of the spleen and stomach, and spleen deficiency and dampness is the core pathogenesis of the disease. Director Chen Ninggang, a famous Chinese medicine practitioner in our hospital, pays attention to the long-term management of diseases during his consultation. In the treatment of inflammatory skin diseases, he advocated that "to treat the skin, it is first to treat the spleen". The spleen and stomach are the foundation in the daily life. If the body's spleen and stomach are deficient, and the source of qi and blood biochemistry is then lacking, it is therefore easy to induce all diseases. If the spleen is healthy, the qi and blood are biochemically active with abundant qi, the evil cannot be done. Combined with the theory of "Prevention of the recrudescence of disease" in the treatment of pre-existing diseases by TCM, after the initial clinical recovery of AD, the method of harmonizing the function of the spleen and stomach of the medium focus is adopted to promote the body function of internal organs to restore a healthy state and prevent the recurrence of the disease. "Compound ginseng cicada soup" is tailored from the Jingfang of "Sen Ling Bai Shu San", which is the clinical experience of Director Chen Ninggang. Fang Zhongjun medicine is party ginseng, which is used to strengthen the spleen and qi to solidify the foundation. Cicada clothes are used to dispel wind and relieve itching, and the medicine baishu, poria, yam, lentils, and coix renxing are used to strengthen the qi and consolidate the surface, with dispelled wind and relieved itching. All these are supplemented by Guya, and chicken Neijin to strengthen the spleen and stomach. Jujube and licorice are also used as a medicine to neutralize and harmonize other medicines. All the medicines play a role in strengthening the spleen and nourishing qi, dispelling dampness and expelling wind, eliminating Spot itching effect. In the remission period of AD, it can fundamentally adjust the patient's spleen deficiency constitution and sensitive state, reduce the recurrence of AD, and alleviate the condition of AD recurrence. The joint application has obvious advantages in the chronic disease management of AD. Based on the sensitivity of clinical efficacy, through network pharmacology, GO function and KEGG pathway enrichment analysis, we found that compound ginseng decoction can be taken internally to regulate the CAMP signaling pathway, inflammatory mediators regulation of TRP channel, FcεRI signaling pathway and other signaling pathways, which could effectively alleviating symptoms of AD and inhibiting disease recurrence.

Compared with previous studies, this study is a retrospective analysis of authenticity, and the safety of the study drug is high with no obvious side effects. Therefore, the results of the study are beneficial to AD patients, particularly children. In this retrospective analysis of the management of AD chronic disease, compared with the control group, the recurrence rate of the research group was lower. Also, the number of recurrences and the duration of recurrence were significantly lower than those in the control group, and the time of first recurrence was significantly delayed. The difference between the two groups was

statistically significant. after the intervention, patients experienced reduced severity of relapse, pruritus, and quality of life scores. According to this analysis, the combined application of compound ginseng cicada decoction in the management of chronic diseases of spleen deficiency and moist atopic dermatitis has a definite efficacy with safety and effectiveness on AD recurrence. However, our results are subjective to the limited sample size and relatively short cycle. Further study is encouraged to take our results for clinical promotion to explore the possible mechanism of effective intervention, so as to help the development of TCM preparations with inheritance characteristics in skin diseases.

Acknowledgments

This research was supported by the following projects: Key Medical Discipline Construction Plan of Ningbo City, Zhejiang Province (2022-Z04); Ningbo Chen Ninggang Famous Chinese Medicine Expert Inheritance Studio Construction Project (2022–2024); Zhejiang Traditional Chinese Medicine Science and Technology Project (2023ZL148); and 2023 Ningbo Key Technology Research and Development Project (2023Z207).

Conflict of interest

None to report.

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