Abstract

Atopic dermatitis is a chronic disease that is characterized by itchy and inflamed skin. The prevalence of atopic dermatitis has significantly increased during the past several decades. There has been significant interest in Chinese herbal medicine as a treatment for atopic dermatitis. The objective of this case study is to report a case of the use of Chinese herbs for treating atopic dermatitis in a six-month-old boy. This patient presented with dry erythematous and pruritic patches on both cheeks and the creases of both elbows and knees. He was diagnosed with atopic dermatitis by his pediatrician when he was two months old. The original medical advice was to change the infant’s formula to one that was soy-based, but the condition continued. Hydrocortisone 0.5% ointment was prescribed but the patient’s family preferred not to use it. The patient was prescribed a Chinese herbal decoction prepared from Feng Guang Shen, Fu Ling and Shan Yao to be administered in his formula. This was administered four times per day for six months. The skin rashes gradually decreased and the patient stopped scratching his skin. By the age of 15 months the symptoms had completely disappeared. The patient was monitored for the next six years, during which time there was no recurrence of his symptoms reported by patient’s family. This case report supports the conduction of quantitative studies of the role of Chinese herbs in the management of pediatric atopic dermatitis.

Introduction

Atopic dermatitis is a chronic inflammatory disease which occurs predominantly in early childhood. It is characterized by dry skin, erythema and intense pruritus. Atopic dermatitis is the eighth most common disease in people less than 25 years of age, usually occurring in the first six months of life. Boys
and girls are equally affected until age six, after which the prevalence becomes slightly higher in girls. Its prevalence has more than doubled in the past thirty years. It now affects 10-20% of children and 1-3% of adults in industrialized countries, with the estimated annual prevalence being 15/1,000.

Although the etiology of atopic dermatitis is unknown, in many cases it is associated with allergic rhinitis or asthma. The connection between these diseases has not been identified. Studies on the role of genetics in atopic dermatitis have been inconsistent. The diagnosis of atopic dermatitis is mainly based on the findings of the history and physical examination. Possible causative factors such as exposure to allergens, chemicals, food and stress should be identified. Major diagnostic features include pruritus, relapsing dermatitis, family history of atopic dermatitis, dermatitis rashes on facial and extensor surfaces in infants and young children and flexure lichenification in older children and adults. Diagnosis is made by the typical signs and symptoms. There are no specific diagnostic tests for atopic dermatitis.

Conventional medical treatments for atopic dermatitis include frequent emollient application to alleviate dry skin and use of topical corticosteroids. Identifying and minimizing contact with allergens also helps to control the disease. UV radiation exposure has been found to have a localized immunomodulatory effect on affected tissues, and may be used to decrease the severity and frequency of attacks. These treatments are sometimes ineffective and/or cause adverse effects, demonstrating the need for alternative treatments.

There has been a significant interest in traditional Chinese medicine (TCM) as a treatment for atopic dermatitis, which has been used for many years. This case report illustrates the use of Chinese herbs for the management of atopic dermatitis in a six-month-old boy. A literature search did not identify any articles using a similar combination of herbs for atopic dermatitis in children.

**Case Presentation**

The case was a six-month-old Asian boy. He had a normal birth and had not experienced any other health conditions. His general health was very good. There was no family history of atopic dermatitis.

The initial symptoms started to manifest when he was two months old. In the beginning there was only a slight discoloration of the skin on both cheeks. His pediatrician initially identified it as an allergic reaction due to consuming regular infant formula. The initial treatment was to switch to soy formula and later to the special formula Nutramigen for allergic babies. Oat-based moisturizer was applied daily to the patient’s skin. Later a rash with itchy red patches appeared on the patient’s cheeks and the creases of his elbows and knees (Figure 1). He was then diagnosed with atopic dermatitis. Hydrocortisone 0.5% ointment was prescribed to apply on the affected areas. However, the patient’s family decided to not apply the ointment as they were informed of the possibility of thinning of skin. At six months of age the patient’s family decided to try Traditional Chinese Medicine (TCM) for their son’s condition.
TCM Diagnosis

Diagnosis was made by history, appearance of the skin and tongue examination. The etiology of atopic dermatitis according to TCM is closely related with the condition and function of the internal (zang/fu) organs. Lack of appetite is the most common spleen disharmony according to classical TCM pattern differentiation. The impairment of the spleen transformation and transportation function causes the various digestive symptoms which can give rise to the retention of dampness. As the parents of the patient reported him eating far less than the amount suggested by pediatrician according to age, height and weight the patient’s small appetite indicated toward spleen deficiency. The appearance of rash on the patient’s skin also indicated the possibility of retention of dampness in the skin. The contribution of tongue diagnosis had several distinctions which made its importance in this case. According to tongue diagnosis in TCM: the tongue almost always reflects the true condition of the patient; the tongue appearance is a most useful gauge for monitoring the improvement or decline of the patient’s condition; the topography of the tongue (correspondence of different areas of the tongue to different organs) is a subject of fairly general agreement; tongue diagnosis is relatively objective in comparison with other techniques, such as the different interpretations over pulse characteristics. The patient’s initial tongue coating was found to be white and thick with slight visible tongue edges. Due to the small size of the infant’s tongue, the visible edges indicated that the coating at the center tongue body was much thicker than the tongue borders (where in an adult tongue it would be more clearly thicker just in the center region). The center of the tongue corresponds to the spleen according to the topography, and the thick white coating indicates deficiency of spleen. With the gathered information, the TCM diagnosis of spleen deficiency resulted in retention of dampness was thus made.

Treatment Principles of Atopic Dermatitis in TCM

As the TCM diagnosis of this patient’s case was found to be deficiency of the spleen function (Qi), it was imperative to tonify and strengthen the spleen in order to eliminate the retention of dampness in the skin. Concerned with the patient’s young age, the treatment approach chosen was to select traditional
Chinese herbs with gentle taste and functions but yet with the potency to accomplish the desired result. Three Chinese herbs were chosen for this patient’s treatment (Table 1).

**Table 1. Herbs used for Treatment**

<table>
<thead>
<tr>
<th>Herb:</th>
<th>Function:</th>
<th>Suggested dosage for adults:</th>
<th>Dosage per pack:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fen Guang Shen (radix quinquefolii panacis)15-17</td>
<td>Strengthen spleen Qi 9gm</td>
<td></td>
<td>2.25 g</td>
</tr>
<tr>
<td>Fu Ling (sclerotium poriae cocos)15</td>
<td>Strengthen spleen, drain dampness 15gm</td>
<td>3.5 g</td>
<td></td>
</tr>
<tr>
<td>Shan Yao (radix dioscoreae oppositae)17</td>
<td>Tonify spleen 30gm</td>
<td>6 g</td>
<td></td>
</tr>
</tbody>
</table>

Dosage is a topic of importance in composing a prescription. Although suggested dosage for each herb exists in reference, exceptions are dependent upon variables. It is a common understanding that the very weak patients, the aged, and infants usually cannot tolerate too strong a prescription or too large a dose. The dosage concept of the herbs in this prescription was reduced by utilizing the calculation based on one-fourth of the suggested dosage for adults, with slight modification to better suit the patient.

**Intervention and Outcomes**

Each pack of herbs (explained in the Table 1) was prepared by the patient’s parents daily. The herbs were steamed rather than boiled for convenience and maximum retention of potency with six cups of purified water steamed into the decoction. The herbal decoction was used as a substituent for water while preparing the baby’s formula. The formula was then administered to the patient four times per day, six ounces at each administration. The remaining decoction was ingested as a fluid replacement or with food. The decoctions were made fresh daily to ensure its best potency and administered daily to the patient for the following six months. Oat-based moisturizing lotion was applied several times daily to the patient’s skin. No other treatments for the patient’s skin condition were used. Visits were scheduled for every two weeks for the first three months to monitor the patient’s progress.

Outcome measures used in this study were reductions in the area affected, the reddish discoloration and scratching. The patient’s skin rashes on both cheeks and creases of the elbows and knees and reddish discoloration have gradually improved upon visual inspection with the administrations of the herbal decoction (Figure 2). The parents reported that the patient stopped scratching the affected areas. No side effects were reported by the patient’s parents. By the time the patient was one year old the rash was barely visible (Figure 3). By the age of 15 months the rash had completely resolved. Continued monitoring of this patient (now seven years old) was performed with no return of the condition.
Figure 2. Patient four months after beginning treatment

Figure 3. Patient six months after beginning treatment
Discussion

Literature shows that TCM can be very effective for the management of atopic dermatitis. However, the majority of these studies were done with adults. There were no studies found evaluating the effectiveness of the formula used in this study for the management of atopic dermatitis in children. For the patient in this case report, six months of using the Chinese herbal formula was effective for the management of atopic dermatitis. This treatment should be considered when parents of patients with atopic dermatitis are looking for an alternative to the conventional medical treatments such as cortisone creams.

The etiology of atopic dermatitis according to TCM is closely related with the condition and function of the internal (zang/fu) organs. This may be categorized by excess or deficiency and/or pathogenic factors relating to different internal organs. The spleen’s main function is to transport and transform food essences, absorb the nourishment from food and separate the usable from unusable part, and control the transformation, separation and movement of fluids. If this function is deficient and impaired, the fluids will not be transformed or transported properly which then may accumulate to form dampness. Retention of dampness in the skin is the main cause of numerous skin diseases and may manifest with vesicles and papules and with puffiness of the skin. In this patient the primary cause of the skin rash was found to be deficiency of the spleen’s function, thus the retention of dampness was expressed on the patient’s skin.

Mode of action of the Chinese herbal formula was discussed in the literature. Research shows that clinical efficacy is due to its ability to reduce immunological pathways which are responsible for the condition.

Due to the young age of this patient, acupuncture treatment with needles was not applied. In the treatment of adult patients, acupuncture points Ren 6, Ren 12, ST 36, SJ 5, LI 11, L 7, ST 40, SP 9, and K 3 are recommended to complement and enhance the herbal treatments for atopic dermatitis due to spleen deficiency.

Limitations of this case report are that the results may have been due to uncontrolled factors, such as the natural history of the condition, changes in the patient’s life, such as diet or allergen exposure.

Conclusion

This case report reports on a positive outcome for treating atopic dermatitis induced by spleen deficiency with dampness accumulation in an infant, a common cause of this condition. The natural approach in this case was selected to prevent the side effects that may be caused by conventional drugs, such as corticosteroids and antihistamines, currently used for treating pediatric atopic dermatitis. As the prevalence of this condition continues to increase among children, finding a natural and safe treatment approach is important. Future controlled studies should be to evaluate the efficacy and safety of Chinese herbs for treating infant atopic dermatitis.
References


