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Herbal Therapy in a Dog with Severe Atopic Dermatitis
Leilani Alvarez DVM

Abstract
Herbal therapy provided effective treatment for a dog with severe atopic dermatitis that had been refractory to conventional therapies. A combination of conventional therapies, acupuncture, herbal medicines and dietary changes were used to treat the patient and, in the last 15 months, the condition has been well managed with the integrated approach. This case demonstrates that herbal therapy can be a successful treatment option for refractory atopic dermatitis cases or as complementary treatment for patients with dermatologic problems.

Introduction
Atopic dermatitis (AD) is a common dermatologic diagnosis in dogs consisting of chronic relapsing pruritic skin (Olivry et al. 2010). Dogs are genetically predisposed to this inflammatory skin condition, which is characterized by specific clinical features associated with IgE antibodies, usually directed against environmental allergens (Haliwell 2006). Appropriate diagnosis of AD is based on the patient’s signalment, clinical signs and history of disease (Favrot et al. 2010). Favrot’s criteria for diagnosis of AD include five of eight satisfying criteria, which yield a sensitivity of 85% and specificity of 79% to differentiate dogs with AD from dogs with chronic or recurrent pruritus without AD (Table 1).

Dogs with AD usually have skin lesions consisting of erythematous macules, patches and papules. However, in most patients, the skin lesions are due to self-induced trauma, including excoriation, alopecia, lichenification and hyperpigmentation (DeBoer & Hillier 2001). The areas most commonly affected include the face, concave ear pinnae, ventral neck, axillae, groin, abdomen, perineum, ventral tail and extremities. One must also be careful to rule out other pruritic conditions, which can mimic AD including scabies, demodicosis and infectious bacterial and yeast pyodermas.

Experts in the field of dermatology have agreed that intradermal tests and allergen-specific IgE tests cannot be used as the sole means of diagnosing AD (Hillier & DeBoer 2001). Instead, results from these tests can be used to implement allergen-avoidance interventions and targeted immunotherapy against select allergens.

Current practice guidelines on successful treatment of AD state that a combination of several interventions and treatments is often necessary to achieve satisfactory results (Olivry et al. 2010). These measures include: Identification and avoidance of flare factors (such as fleas, food, dust mites, pollens or other environmental allergens); improvement of skin and coat hygiene and
care; and reduction of pruritus and skin lesions with pharmacological agents (such as glucocorticoids, antihistamines, essential fatty acids, tacrolimus and cyclosporine).

Herbal medicine has shown some promise in the treatment of AD. Several human studies have demonstrated that a combination Chinese herbal medicine, Zemaphyte® is helpful in the management of atopic eczema (Chung 2008, Hon et al. 2007, Zhang 2005, Xu et al. 1997). Zemaphyte® contains *Ledebouriella saseloides* (pictured next page), *Potentilla chinensis*, *Clematis armandii*, *Rehmannia glutinosa*, *Paeonia lactiflora*, *Lophatherum gracile*, *Dictamnus dasycarpus*, *Tribulus terrestris*, *Glycyrrhiza glabra* (licorice) and *Schizonepeta tenuifolia*.

As well, in a randomized double-blind placebo-controlled trial with dogs it was shown that Phytopica® (Intervet-Shering Plough), a Chinese herbal supplement and a derivative of Zemaphyte®, significantly reduced the dose of methylprednisolone required to control pruritus as compared to placebo (Schmidt et al. 2010). Phytopica® contains *Rehmannia glutinosa*, *Paeonia lactiflora* and *Glycyrrhiza uralensis* (licorice). An earlier randomized, controlled study on the same product showed favorable results in the treatment of atopic dogs compared to placebo (Nagle et al. 2001).

**Case presentation**

A 7-year-old, female spayed German Shepard dog, weighing 67 lbs (~ 30 kg) and living primarily indoors, presented in early summer with a primary complaint of severe atopy that had not responded to conventional medicine. Her allergies first manifested when she was a year old and had worsened over the years. She had a history of aggression and anxiety issues since she was first acquired as a puppy. Prior to presentation, the patient had been treated by a board-certified dermatologist for three years, including treatments with hyposensitization injections, antihistamines, steroids, antibiotics, Atopica® (cyclosporine) and medicated baths. Despite these therapies, the patient’s symptoms were not well controlled.

Intradermal skin testing revealed she was reactive to several tree pollens, house dust mite and tobacco. Serum IgE testing for aeroallergens revealed positive titers to several species. The dermatologist developed a vaccine combining these results with those of the intradermal skin test and the patient received the appropriate course of hyposensitization injections. After six months of weekly injections, the owner reported the pet’s pruritus was not improved and she continued to have flare-ups. The dog also received Staphage Lysate injections for over a year. The owner reported the injections helped initially, but the dog continued to have severe outbreaks with bloody excoriations, especially in summer time. After almost two years, Staphage Lysate injections were continued but hyposensitization injections were discontinued.

Most recently, she had some relief with the antihistamine, hydroxyzine, and initial relief with Temaril P® (trimeprazine 5 mg and prednisolone 2 mg), but these were no longer helping. The owner bathed the pet every 2 to 3 days with hypoallergenic shampoo. The pet had had an episode of severe colitis six months prior to presentation. When presented, she had a
great appetite and no current vomiting, diarrhea, coughing or sneezing.

Conventional evaluation
On initial exam, the pet was bright alert and responsive and had normal vital signs. Her demeanor was anxious and fearful. On physical exam, she had severe moist erythematous lesions in the periocular region, ventral abdomen, inguinal region, medial thighs and perianal region. There were crusting excoriations over the trunk and flanks. The dog was extremely pruritic and was itching incessantly throughout the exam. Her current medications included Temaril P® – 1 tablet daily and Omega 3 fatty acids 1000 mg daily. Her diet consisted of commercial dry kibble (Innova) and dehydrated food by the Honest Kitchen, Thrive variety (chicken and quinoa). Her clinical presentation and history fit with Favrot’s criteria for an accurate diagnosis of AD (see Table 1). Her assessment was severe atopic dermatitis, anxiety disorder and a history of colitis.

Traditional Chinese Veterinary Medicine (TCVM) evaluation
The owner described the pet as very protective and food aggressive. She barked and attacked other dogs and was generally irritable and compulsive. Her TCVM Constitution was interpreted as Wood.

Her tongue was purple-red and the pulse was strong and slippery. She had active acupuncture points at BL 15, BL 22, LI 4. Her TCVM assessment was long standing Damp leading to Blood Heat, Liver Yang Rising and Wind.

We initiated herbal therapy with Long Dan Er Miao San (Kan Essentials) 1250 mg (2½ tabs) orally two-three times daily. We elected to continue the essential fatty acids but discontinued the Temaril P®. We changed the diet to fresh raw frozen food with high protein and low carbohydrate, using cooling proteins including fish, soy or rabbit. She also received five weekly acupuncture treatments aimed at reducing pruritus, inflammation and to calm her anxiety. (In TCVM these treatments were Wind and Heat clearing and Shen calming).

Within two weeks of treatment, the owner reported she was much better, less itchy and calmer. On presentation, she had fewer skin lesions, mild to moderate, in comparison to presentation. Her tongue was red and her pulse strong.

On the fourth week of treatment, which was at the end of July and historically her worst season, she had a flare-up. She had multifocal excoriations and erythematous macules on the face, medial front legs, caudal ear pinnae, perianal region, as well as swollen and erythematous front paws that were warm to the touch. Her tongue was red and her pulse strong and bounding.
We started Temaril P®- three tabs orally twice daily for three days, then once daily for seven days to decrease inflammation and Cefpodoxime (a third generation cephalosporin) 150 mg orally once daily for seven days to treat the suspected pyoderma. We switched the herbal formula to Long Dan Xie Gan Tang (Kan Essentials) – 1½ tabs orally three times daily for a stronger Heat clearing effect.

On recheck one week later (five weeks after initial presentation), the dog was significantly improved. She had mild pin-point papules on the ventral base of her neck and no other active lesions. Her tongue was red and pulse strong. On recheck the following week (six weeks after presentation), her skin was still doing well but she had an episode of colitis and was still itchy around the perianal region. On exam, she had an anal gland impaction. Her tongue was red and wet and pulse slippery and strong. Her anal glands were expressed and we added an additional herb, Si Miao San (Kan Essentials) – two tabs orally in the morning and reduced Long Dan Xie Gan Tang to two tabs orally in the evening.

On recheck 11 weeks following presentation, she continued to do well. The owner reported she was more playful and calmer. On exam, she had mild erythema around the perianal region and medial thighs, but there were no open lesions. Her tongue continued to be red and pulse strong and wide. At this point, we changed her herbal formula to Qing Ying Tang (Kan Essentials) – two tabs by mouth two-three times daily.

The patient was not seen again until spring of the following year (nine months following initial presentation), at which time the owner reported her skin had never looked better. On exam, she had a beautiful shiny coat and no active lesions. Her tongue was pink and the pulse was still strong but more moderate at the superficial level.

During the following summer, the patient’s worst allergy season, she continued to do well on the Qing Ying Tang, although we did use low doses of Temaril P®- 1-2 tabs once daily to help control her allergies. During a phone conversation with the owner 18 months after staring herbal therapy, she reported her pet’s skin has never looked better and she could not be more pleased with how well she was doing.

Discussion

This patient shows signs of severe Damp Heat as evidenced by the strong slippery pulse, inflamed skin with excoriations and history of colitis. The long-standing Damp has led to stagnation as evidenced by the purple-red tongue. The underlying cause is likely Damp accumulating in the Spleen, in part from the carbohydrate rich and highly processed diet (dry kibble). Carbohydrates and processed foods have a higher glycemic index and lower content of vitamins and minerals. Processed foods, therefore, are less nutritious and promote more inflammation and insulin resistance. The combination of herbs and unprocessed raw foods promotes improved bioavailability of nutrients, increased insulin sensitivity and improved blood flow to inflamed areas to help limit and resolve them.

The pet’s previous diet was mostly chicken, which is very warming from a Chinese medical perspective. As the Damp
accumulates, it stagnated the Triple Burner leading to genital inflammation (as noted in the perianal and inguinal erythema and active BL 22). As the Heat accumulated, it transferred to the Heart and Liver leading to the behavioral problems of anxiety, aggression and irritability. In addition, the Liver Heat manifested in periocular erythema. The Heat transferred to the Blood leading to severe itching and Blood Heat. Aggression is a sign of Liver Yang rising, while itching is a sign of External Wind.

Long Dan Er Miao San is a combination of Er Miao San and Long Dan Xie Gan Tang, which treat severe Damp Heat. Long Dan Cao, Huang Qin and Gardenia clear Heat from the Liver and Heart and dry Damp. Bupleurum and Huang Qin promote movement through the Triple Burner. Rehmannia cools Blood while protecting Yin damaged by the Heat and drying effects of the other herbs. Plantain seed, Poria and Ze Xie drain Damp. Er Miao San (Phellodendron and Atractylodes) clear Heat and dry Damp in the Lower Burner, but have warming effects in the Middle Burner to protect the Spleen. Atractylodes, Mulberry leaf and Dictamnus have Wind expelling effects. Kochia drains Damp and relieves itch. Red Peony and Peony tree bark move Blood and relieve itch.

The formula was switched to Long Dan Xie Gan Tang to have a stronger cooling action and to focus more on clearing Heat from the Liver channel which was likely leading to the dominance aggression. Si Miao San was added when the patient developed colitis, a sign of Spleen Qi deficiency and Damp. Si Miao San contains Phellodendron and Atractylodes, which both tonify Spleen and dispel Damp. Phellodendron is also Heat clearing. Coix further supports the Spleen and helps stop diarrhea. Achryanthes is a Blood mover that helps decrease inflammation and relieve Blood Heat. Although the patient improved

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<th>Table 1. Favrot’s 2010 criteria for canine atopic dermatitis (Favrot et al. 2010)</th>
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<tr>
<td>1. Onset of signs under three years of age</td>
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<td>2. Dog living mostly indoors</td>
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<td>3. Glucocorticoid-responsive pruritus</td>
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<td>4. Pruritus sine material at onset (ie alesional pruritus)</td>
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<tr>
<td>5. Affected front feet</td>
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<td>6. Affected ear pinne</td>
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<tr>
<td>7. Nonaffected ear margins</td>
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<td>8. Nonaffected dorso-lumbar area</td>
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A combination of five satisfied criteria has a sensitivity of 85% and a specificity of 79% to differentiate dogs with AD from dogs with chronic or recurrent pruritus, without AD. Adding a sixth fulfilled parameter increases the specificity to 89%, but decreases the sensitivity to 58%.
significantly with the combination of Long Dan Xie Gan Tang and Si Miao San, the patient continued to have a red tongue with strong pulses, indicating there was still a strong component of Blood Heat.

The patient has been best managed with Qing Ying Tang, a formula that helps clear severe Heat pathogens that have invaded the Blood. It contains Rehmannia, Scrophularia and Ophiopogon, which clear Heat and protect Yin. Honeysuckle, Forsythia and Coptis dispel Heat pathogens, while Lopatherum cools Heart Fire to help relieve aggression and Salvia moves and cools Blood.

Rehmannia glutinosa (Di Huang – pictured next page), the first ingredient in Long Dan Er Miao San and also in Qing Ying Tang, has multiple anti-inflammatory effects (Kim 1999, Park 2009). It was shown to help specifically with AD by enhancing T-hyper 2 lymphocytes respond to allergens (Sung et al. 2011). In a recent study, modified Si Miao San extract was shown to have significant anti-inflammatory effects by inhibiting nitrous oxide, tumor necrosis factor-alpha and Interleukin-6, among other pathways (Fan et al. 2010).

Further, a Chinese herbal formula containing Angelica sinesis (Dang Gui) and Astragalus membranaceous (Huang Qi) was shown to decrease eosinophilic infiltration in asthmatic mice and helped in the treatment of AD in dogs (Lin et al. 2011).

Combining Chinese herbal medicines with acupuncture has been shown to be more beneficial in improving patients’ symptoms than Chinese herbal medicine alone (Salameh et al. 2008) and using herbal therapies along with diet change can benefit patients with AD that have failed conventional approaches (Kobayashi et al. 2004). The present patient achieved unparalleled improvement in AD symptoms with much lower doses of conventional medications than used historically, indicating a significant contribution of the acupuncture, herbs and diet change to the dog’s health and overall quality of life.

Summary/Conclusions
This case report is an example of a challenging clinical manifestation of severe atopic dermatitis that failed expert conventional dermatologic management. Atopic dermatitis can be very frustrating for any clinician to manage. This report demonstrates that using herbal medicines and integrated therapies can be successful in the management of these challenging cases.

References


Fan, J, Liu, K, Zhang, Z et al. 2010, ‘Modified Si-Miao-San extract inhibits the release of inflammatory mediators from lipopolysaccharide-stimulated mouse


