

## Autoimmune Therapy in Canine Atopic Dermatitis

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**Abstract** In present study, an effort was made to diagnosis the case of CAD on the basis of clinical signs, hematological examination and treat it by autoimmune therapy. The study was conducted in a dog (18 month old male pug, weighing 9kg) presented with the clinical symptoms of itching, erythema, alopecia, scratch marks, lichenification and hyperpigmentation. In suspicion of canine atopic dermatitis, routine hematology and differential leukocyte count was carried out in blood and results revealed eosinophilia. Other hematological parameters were unremarkable. Immediate treatment started with autohemotherapy (autologous blood collected from saphenus vein and immediately reinjected intramuscularly @ 1 ml/10 kg b wt, weekly interval). Initially the animal showed no recovery even after 2<sup>nd</sup> dose but after 3<sup>rd</sup> dose of auto-hemotherapy, signs of clinical recovery were observed and after 4<sup>th</sup> dose of auto-hemotherapy the dog recovered completely.

**Keywords** Canine, Atopic, Dermatitis, Auto hemotherapy.

### Introduction

Canine atopic dermatitis (CAD) is a chronic, pruritic and inflammatory skin disease that occur in 10-15% of the canine population [1]. Therefore CAD constitutes a serious problem in veterinary medicine and has been reported to one of the most common causes of canine pruritus. It is frequently associated with elevated serum IgE levels. The most common clinical diagnostic features are itching, erythema, alopecia, scratch marks, lichenification and hyperpigmentation. CAD mainly affects young dogs (1-3 years). Typically, CAD is diagnosed based on the patient's clinical history, exclusion of clinically-comparable disorders and the presence of pruritus and dermatitis on specific sites of the body, together with skin test reactivity to environmental allergens or the presence of allergen-specific IgE in serum [2]. There are so many drugs used for the treatment of canine atopic dermatitis. however, these drugs are not effective against the CAD. In present study, an effort was made to diagnosis the case of CAD on the basis of clinical signs, hematological examination and treat it by autoimmune therapy.

### Materials and Methods

The study was conducted in a dog (18 month old male pug, weighing 9kg) presented to the Teaching Veterinary Clinical Complex, College of Veterinary Science and A. H., Jabalpur. It was showing signs of dermatitis in spite of using traditional therapy (i.e. ivermectin, antifungal, antihistaminic, antimicrobial drugs) for a long time. The clinical symptoms included itching erythema, alopecia, scratch marks,

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lichenification and hyperpigmentation. In suspicion of canine atopic dermatitis, blood sample was collected for routine hematology and differential leukocyte count was carried out by routine methods of examination.

### Results and Discussion

In the present study, differential leukocyte counts revealed eosinophilia. Other hematological parameters were unremarkable. Immediate treatment started with autohemotherapy (autologous blood collected from saphenus vein and immediately reinjected intramuscularly @ 1 ml/10kg b wt, weekly interval). During auto-hemotherapy dog was kept under observation for at least 1/2 h and no any side effect was seen.

Initially the animal showed no recovery even after 2<sup>nd</sup> dose of auto-hemotherapy, However after 3<sup>rd</sup> dose of auto-hemotherapy, signs of clinical recovery were observed and after 4<sup>th</sup> dose of auto-hemotherapy the dog recovered completely and none of the clinical signs of atopic dermatitis were observed. Differential leucocyte count after 35 day of post treatment showed normal values (Figs. 1—3).

In canine atopic dermatitis, there is no significant difference in IgG and IgE levels between atopic dogs with and without clinical evidence of Malassezia dermatitis and/or otitis [3]. The changes in immunoglobulins levels may be specific response to a series of exogenous and endogenous antigens or a non specific reaction. However, sometimes the synthesis of IgG is promoted and IgA is decreased and no difference occurs in IgE levels [4].

Differential leukocyte count reveals no changes in neutrophil, lymphocyte, monocyte and basophil count, however, eosinophil counts increases in diseased dogs. The changes occurred in eosinophil count may be due to hypersensitive reaction of the body in dermatitis.

The result of present study revealed eosinophilia before treatment and complete clinical recovery after autoimmune therapy. Thus, it can be concluded



**Fig. 1.** Dog showing sign of alopecia, erythema, lichenification, scratch marks and hyperpigmentation. **Fig. 2.** Clinical improvement after 3<sup>rd</sup> dose of auto-hemotherapy. **Fig. 3.** Clinical recovery after 4<sup>th</sup> dose of auto-hemotherapy.

that autoimmune therapy could be a right choice for treating the non responsive cases of CAD. However, scanty literature is available in this regard and further systematic and exhaustive study is required to validate the autoimmune therapy.

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