

Successful Management of Canine Atopic Dermatitis in Dog

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INTRODUCTION

Canine atopic dermatitis (CAD) is a chronic and recurrent inflammatory and pruritic disease of skin. This disease is one of the most prevalent skin diseases in dogs and associated with IgE immunoglobulin mediated hypersensitivity to environmental allergens such as animal epithelia, pollens, molds, house dust, mites and storage mites (Kang et al., 2014). Its pathogenesis is associated with a complex interaction between environmental factors, genetic predisposition, defective skin barrier and immunological hypersensitivity (Olivry et al., 2001, Marcsella et al., 2011). The inflammatory reaction in atopic dermatitis is caused by biphasic T cell polarization. T-helper 2 (Th2) response in acute condition characterized by predominant secretion of interleukins: IL-4, IL5, and IL13 resulting in recruitment of eosinophils into inflammatory site, and activation of B lymphocytes and production of IgE (Olivry et al., 1996). The allergen-specific IgE binding to mast cells causes degranulation of these cells. Secreted inflammatory mediators provoke inflammation (Bieber, 2008). CAD may be being either as seasonal or non-seasonal disease (Griffin and DeBoer, 2001) and pruritus is unifying feature.

Primary skin lesions are rare, and most lesions are due to secondary self-trauma leading to variable degree of erythema, alopecia and excoriation seen on face, paws, caudal carpi, distal extremities ear and ventrum. Hyper pigmentation and lichenification are observed in chronic cases. Greasiness or hyperhidrosis may present in CAD affected dogs. Since the management of atopic dermatitis is very difficult and precise medication is needed.

Successful treatment if atopic dermatitis needs multifaceted approach that includes correction of irritation, allergic response, microbes and stress (Olivry et al., 2002). Cyclosporine is an effective and safe alternative to glucocorticoids in patients of ulcerative colitis (Haenset et al., 2001). Considering the significance of the disease, the present study was undertaken to evaluate effect of cyclosporine for treatment of canine atopic dermatitis in dog.

MATERIALS AND METHODS

A German shepherd dog aged about 19 months old weighed 26 kg having intense itching and scratched wound was seen on left side of neck presented as outdoor patient in the TVCC, Bihar Veterinary College, Patna for treatment. The owner informed that the dog had developed the sign of scratching and biting for about last three weeks. Initially the owner ignored the itching as general but when he noticed about scratched wound on neck and reddish spots on abdominal part and thought for treatment. Clinical examination of the dogs showed soggy coat. Scratched mark was observed over the itchy areas with oozed blood and inflamed.

The fecal sample and skin scrapped samples from different lesions of the dog were taken for laboratory diagnosis. Skin scraping was done as per protocol for investigation of mange (demodectic mange or sarcoptic mange) infection. After examination no parasitic eggs were found in fecal smear and demodectic or sarcoptic mange could not be detected in skin scraping. Hematological parameter was TLC-11800/mm³, and differential count Neutrophil, Eosinophils, Monocytes and Basophil was 71%, 01%, 04% and 00% respectively. Hemoglobin 14.1 gm/dl, RBC count 7.00 × 10⁶/mm³, PVC (42.3%), MCV (60.4 fl), MCH (20.1 pg) and MCHC

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ABSTRACT

Canine atopic dermatitis (CAD) is a chronic and recurrent inflammatory and pruritic disease of skin. CAD is most prevalent skin diseases in dogs and associated with IgE immunoglobulin mediated hypersensitivity to environmental allergens such as animal epithelia, pollens, molds, house dust, mites and storage mites. A German shepherd dog aged about 19 months old with intense itching and scratched soggy coat wound on neck was presented as clinical case of in TVCC, BVC, Patna. The scratched wound was dressed with povidone-iodine 10 % solution, and regular application of Clobetasol propionate, Ofloxacin and Miconazole nitrate as antibacterial and antifungal preparation till complete healing. The dog was also treated with Cephalexin @ 25 mg/kg body wt. twice in a day orally to prevent secondary infection of bacteria and cyclosporine @ 5 mg/kg body wt. once in a day orally to suppress the immune response, administration of antihistaminic cetirizine hydrochloride. The itching was ceased after two weeks and the wound was complete recovered after 4 weeks of therapy. So, it was concluded that proper management and therapy with immunosuppressive drug (Cyclosporine) can cure the Atopic dermatitis.

KEYWORD

Canine atopic dermatitis, allergen, Cyclosporine

(33.3 %). The dog was on practice of regular vaccination schedule and proper deworming reflected from record book maintained for the dog. Skin scraped sample was also cultured in SDA (Saburent Dextrose Agar) and direct smear was stained with Lacto Phenol cotton Blue for fungal examination, revealed negative mycotic infection. No growth of skin scraped sample on Baired-Parker agar (egg yolk glycine tellurite pyruvate agar) enriched with trypticase soya broth were observed. The dog showed non-seasonal pruritus. No significant changes observed after withdrawal of suspected feed stuff differentiated from FIAD (food induced atopic dermatitis). Keeping in mind the signs and symptoms and ruling out the presence of ecto/endo parasitic infestation the dog was diagnosed as atopic dermatitis.

RESULTS AND DISCUSSIONS THERAPEUTIC MANAGEMENT

The scratched wound at the base of ear pinna was dressed

with povidone-iodine 10 % solution, and regular application of Micoderm lotion (Medilogy Biotech) containing Clobetasol propionate, Ofloxacin and Miconazole nitrate as antibacterial and antifungal preparation till complete healing. The dog was also treated with Cephalexin (Tab. Cephavet 600 mg, Savavet) at the dose rate of 25 mg/kg body wt. twice in a day orally to prevent secondary infection of bacteria and cyclosporine (Tab. Ichmune C 100 mg, Savavet) at the dose rate of 5 mg/kg body wt. once in a day orally to suppress the immune response, administration of antihistaminic cetirizine hydrochloride (tab. Cetriz 10 mg, Moxy laboratories) total dose 10 mg daily advised.

Supplement of Salmon oil 5ml /10 kg body wt. salmon oil is rich source of omega-3 fatty acids and shampoo therapy with Chlorhexidine gluconate and Miconazole (Micodin shampoo, Intas) to reduce reinfection and maintaining skin pH, initially twice in a week followed by weekly application. Clinical observations were made on 0, 7, 14, 21



Fig. 1 (a)



Fig. 1 (b)



Fig. 1 (c)



Fig. 1 (d)

Fig. 1: Sequential photograph of CAD affected dog pre-treatment to recovery 1 (a) 0Day, 1st (b) 7thDay, 1 (c) 14thDay and 1 (d) 28thDay.

and 28 day during fallow up therapy of the patient. Recovery was determined based on changes in clinical signs from 0 day of initial treatment to day 28 Fig: (1). Absence of clinical signs in the case was considered as success of treatment. The itching and biting of tendency of the dog gradually disappear within two weeks and no sign of pruritus and inflammation, the scratched lesion was observed

significant healing in successive fallow up of the treatment regimen.

Thus, from present study it can be concluded that proper management and therapy with immunosuppressive drug (Cyclosporine) can cure the Atopic dermatitis and discomfort caused by it may be alleviated.

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