

DIAGNOSIS AND THERAPEUTIC MANAGEMENT OF MALASSEZIA DERMATITIS IN DOG

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Introduction

Skin diseases constitute a major clinical problem in canines (Sharma & Dabas, 1993). Bacterial and fungal dermatitis are the most common skin diseases of dogs. Malassezia pachydermatis associated skin dermatitis is of important in both Veterinary and human medicine. Seborrheic dermatitis in dog is frequently associated with Malassezia pachydermatis. Malassezia pachydermatis is lipophilic, non-mycelial, unipolar budding yeast, now commonly recognized, especially in dog. More recently, interest in Malassezia pachydermatis has increased many folds with the fact that the skin colonization is common in pet carnivores which consequently constitute a source of Malassezia pachydermatis for susceptible human. The organism is normal commensal in the dog residing in the skin, anal sac, ear canals, vagina and rectum. A Review of the diseases caused by Malassezia pachydermatis has led to the conclusion that the yeast is an opportunistic pathogen that depends on predisposing host factors and different immune suppressive mechanism for clinical manifestation. The disease is mostly associated with food allergy, flea bite, hyper sensitivity and contact allergy. Ketoconazole, itraconazole and terbinafine have been used by various authors (Kumar *et al.*, 2002 and Chakrabarti *et al.* 2004) for the treatment with variable success. The present study was undertaken to ascertain the comparative efficacy of different combination of topical and systemic therapy against Malassezia associated dermatitis in West Bengal.

Materials and Methods

The total number of 30 dogs irrespective of age, sex, breed suffering from Malassezia dermatitis presented for treatment in the small animal clinic in and around Kolkata from the period July, 2010 to June, 2011 was included for the study. The

complete history, assessment of pruritus, exudation, erythema, scaling, and coat condition and over all skin severity of the dogs were recorded. Cotton swabs were collected by rubbing on greasy exudates on the dogs. The exudates were then transferred to the glass slides and were heat fixed. Then the slides were stained with new methylene blue stain. In case of dry form of Malassezia dermatitis adhesive tape was pressed on the skin lesion. Normal saline was applied and collected material was heat fixed and stained. All the stained slides were observed under oil immersion objectives. Treatment was administered as per the details given in the Table-1. The treatment in this dog was started after being confirmed positive for Malassezia pachydermatis on microscopic examination. The presence of at least three or more organism per oil immersion microscopic field of glass slides is considered significant for the study. The positive cases of Malassezia pachydermatis were randomly divided into four groups and treated with four different combinations of drugs. The clinical observations were recorded at five days interval for up to 30 days after initiation of treatment. All the cases were treated with other drug as required according to other predisposing factors involved simultaneously. During application of shampoo it was advised to make foam with sufficient quantity of water and to remain 10 minutes before rinsing with fresh water. All scales and crusts were advised to remove after bath. The treatment was continued for a week after clinical recovery.

Results and Discussion

Malassezia pachydermatis was confirmed by microscopical observation of oval, pea nut, dark foot print like structures. All the dogs were showing signs of pruritus, exudation, and scaling and poor coat condition on initial presentation. In Gr.I pruritus subsided in 75% of dogs by day 10

of post treatment and after 15 days none of them had any pruritus symptom. Erythema reduced almost 60% by day 5 and was absent by day 10. Exudation removed in 50% of animals after day 10 whereas scaling and poor improved condition of skin and positive microscopically finding remain 100% at day 10 all the symptoms were disappeared with 30 days of post treatment in Gr.I dogs. In Gr.II, the initiations of response were quicker than that of Gr.I animals. The result of Gr.II was showing erythema removed completely on day 10 of post treatment and after 15 days of post treatment. All dogs shown improvement in their overall condition by day 25 after starting of treatment. It was observed that the dogs treated with oral and topical preparation of Ketoconazole (Gr III) showed quick clinical recovery compared to other groups (Table-2). These improvement seen in Gr III treated dogs could be due to potent anti inflammatory properties of Ketoconazole (Ihrke, 1996) or the drugs might have favourably modulated epidermal cell physiology, cutaneous inflammation and hormonal activity in the skin and hair follicles (Kwochka, 1995). Chakrabarti *et al.* (2004) also reported that the dogs recovered after 28 days of treatment with Ketoconazole which is in close agreement of the present study. The dose rate selected for oral therapy in this study was 5 mg/kg body wt. Twice daily orally as several other workers reported that Ketoconazole is effective @5-10 mg/kg orally daily or two divided doses for 30 days (Mason and Evans, 1991; Scott, 1995 and Hill, 1995). The dogs of Gr. IV treated with Itraconazole @ 5 mg/kg daily

pruritis cured 75% within the same period. None of the dogs was showing any signs after 30 days post treatment. Gr.III animals showed best response to the drugs amongst all groups. Both the pruritis and exudation subsided more than 40% within 5 days post treatment whereas erythema remain only in 15% cases. All the dogs of this group of this group clinically recovered within 25 days of post treatment. Gr.IV animals showed better response than that of Gr.II animals. Pruritus and exudation subsided fully

orally and shampoo Ketoconazole also responded to the treatment but took slightly longer time for complete recovery. Mason and Steward, 1993 have also reported good result with Itraconazole at the same dose rate. Oral Itraconazole are effective against *Malassezia* sp. Very well because of its keratinophilic and lipophilic properties, not only that it remains in the skin in high concentration for prolonged time (Leyden, 1998). In comparison to Gr. III and Gr. IV treated dogs Gr. I treated dogs having less effect on the clinical recovery of the animals. Fluconazole, a synthetic antifungal drug has been used successfully to treat dermatophytes @ 2.5-5 mg/kg for 2-4 weeks. In the present study it was recorded that the Gr. II and Gr. III animals although treated with same systemic therapy, the combination of drug in Gr. II took more time (30 days of post treatment) to subside clinical signs as it indicate topical therapy have some role to improve the condition. The study matches the study of Chakrabarti *et al.* 2004.

Table – 1

Treatment was administered as per the details given below :

Gr. No.	Drug combination	No. of cases	Formulation used	Dose rate mg/kg body wt.	Route
1	Cap. Fluconazole Shampoo Selenium sulfide	8	150 mg cap. 2.5% w/v.	5 mg once daily Twice weekly	Oral Bath
2	Tab. Ketoconazole Shampoo Selenium sulfide	8	200 mg tab. 2.5% w/v.	5 mg twice daily Twice weekly	Oral Bath
3	Tab. Ketoconazole Shampoo Ketoconazole	7	100 mg tab. 2% w/v.	5 mg twice daily Twice weekly	Oral Bath
4	Cap. Itraconazole Shampoo Ketoconazole	7	150 mg cap. 2% w/v.	5 mg once daily Twice weekly	Oral Bath

Table – 2
Therapeutic efficacy of different drugs in Malassezia dermatitis

Group	Drug combination	Day-wise resolution of					Complete recovery (day)
		Prur-itus	Erythe-ma	Exuda-tion	Scaling	Coat condition	
Group I (no. 8)	Cap. Fluconazole Shampoo Selenium sulfide	15	10	20	30	30	30
Group II (no. 8)	Tab. Ketoconazole Shampoo Selenium sulfide	15	10	15	25	25	30
Group III (no. 7)	Tab. Ketoconazole Shampoo Ketoconazole	15	10	15	15	25	25
Group IV (no. 7)	Cap. Itraconazole Shampoo Ketoconazole	15	10	15	20	25	25

Summary

Malassezia pachydermatis was identified from clinical cases of Malassezia dermatitis in dogs using new methylene blue staining technique. Therapeutic efficacy of four different combinations of drugs was assessed in thirty (30) dogs suffering dermatitis associated with Malassezia pachydermatis. The dogs treated with oral and topical preparations of Ketoconazole showed quick clinical recovery in comparison to the dogs treated with oral Ketoconazole, Itraconazole, Fluconazole along with shampoo selenium sulphide.

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