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Efficacy of Sarolaner in the treatment of generalised demodicosis in dogs

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Abstract

The efficacy of a novel isoxazoline, sarolaner (Simparica™) against *Demodex* spp. was evaluated in six dogs with generalised demodicosis. Dogs were presented with a history of alopecia, severe pruritis and erythematous lesions on the body. Direct microscopic examination of deep skin scraping was positive for *Demodex* spp. The dogs were treated with single dose sarolaner chewable tablets (Simparica™) @ 2mg/kg body weight orally. All dogs showed rapid improvement after one week of treatment and completely recovered after a month. Clinically, there were no adverse effects of treatment in all cases.

Keywords: Sarolaner, generalised demodicosis, dogs

Introduction

Canine demodicosis is a common ectoparasitic inflammatory condition in dogs due to the proliferation of mites in the hair follicles and sebaceous glands of the skin (Pereira *et al.* 2015) [1]. *Demodex canis* is a commensal inhabiting the hair follicles of young animals and are transmitted from the dam to nursing neonates in the first few days of life (Mueller *et al.* 2020) [2]. Multiplication of the organisms is potentiated by immune-suppression in the animal resulting in clinical demodicosis (Mueller *et al.* 2012) [3]. There are two forms of demodicosis in dogs – Localised demodicosis and generalised demodicosis. Localised demodicosis is clinically manifested in the form of less than five small, patchy lesions of hair loss with spontaneous remission and generalised demodicosis is characterized by five or more patchy, erythematous lesions (Sharma *et al.* 2018) [4]. Sarolaner is a novel ectoparasiticide of the class isoxazolines and is the most potent drug of this class (McTier *et al.* 2016) [5] having rapid absorption and systemic circulation (Tanrattana, 2017) [6]. Sarolaner @ 2mg/kg body weight was found to be effective in the treatment of parasitic skin diseases such as sarcoptic mange (Becskei *et al.* 2016) [7], otodectic mange (Six *et al.* 2016) [8] and demodicosis (Becskei *et al.* 2018) [9] as well as in the control of ticks and fleas (McTier *et al.* 2016) [5]. The present study evaluates the efficacy of isoxazoline, sarolaner (Simparica™) in the treatment of generalised demodicosis in dogs.

Materials and Methods

Six dogs presented to the Department of Veterinary Medicine, Veterinary Clinical Complex, Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry with generalized skin lesions or with five or more lesions in different parts of the body were selected for this study. On clinical examination, the dogs had normal clinical parameters (Rectal temperature, heart rate, respiratory, visible mucous membrane, capillary refill time and lymph node palpation). The skin lesions ranged from more than five localised erythematous lesions, scales and crusts to generalized alopecia, erythema and severe pruritis (Figure 1). The dogs were between the ages of 7 months to 5 years. The dogs were of different breeds including non-decript, Mudhol hound, Doberman Pinscher and Dachshund. Skin scraping was performed by applying a drop of liquid paraffin on a glass slide. The liquid paraffin is allowed to flow over onto the skin lesion and using the edge of the glass slide held perpendicular to the skin, the lesion is scraped till capillary bleeding is noticed. The material is collected and mounted on another glass slide with liquid paraffin. Demodicosis was confirmed by examination of deep skin scrapings and visualisation of *Demodex* mites on direct microscopic examination under 10X and 40X (Figure 2)



Fig 1: Skin lesions present on two dogs with generalized demodicosis and their recovery after treatment with Sarolaner.

The dogs were treated with Tab. Sarolaner (Simparica™) @ 2.0 mg/kg BW as single dose orally along with Tab. Cephalexin (Cephavet 300™) @ 15 mg/kg BW BID PO and Tab. Chlorpheniramine maleate (Cetirizine™) @ 1mg/kg BW SID PO for 5 days. The dogs were given medicated baths using antifungal and antibacterial shampoo (Ketopet™) at weekly intervals. Deep skin scrapings were taken on Day 0 and Day 30. The clinical signs were recorded before and after treatment and the resolution of the condition was established based on two consecutive negative skin scraping examinations.

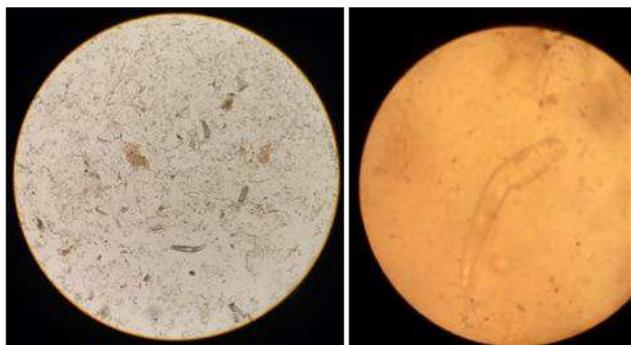


Fig 2: Microscopic examination of deep skin scraping positive for *Demodex* mite under 10X and 40X

Results and Discussion

This study establishes the efficacy of the drug sarolaner in the treatment of generalized demodicosis which is concurrent with other studies (Six *et al.* 2016, Becskei *et al.* 2018) [8, 9]. All six dogs were negative for *Demodex* mite on day 30 and five out of six dogs showed complete resolution of cutaneous lesions. These results are consistent with the findings of Six *et al.* (2016) [8] who reported that 75% of the dogs were negative for *Demodex* mites on Day 29 post treatment with sarolaner and 100% of dogs on Day 60. The time required for obtaining negative results of deep skin scraping for *Demodex* mites was shorter than that of other drugs such as oral doramectin (Murayama *et al.* 2010) [10]. Generalized canine demodicosis is a serious and debilitating disease which is often difficult to treat (Six *et al.* 2016) [8]. Conventional treatments are lengthy involving weekly

administration of drugs and side effects are not uncommon. In this study, a single dose of sarolaner administered on Day 0 was effective in treatment of the condition with no recorded side effects.

Conclusion

The current study shows that the novel isoxazoline drug, sarolaner is an effective and safe drug that can be used for the treatment of generalized canine demodicosis. It could prove to be an effective alternative in dogs with ivermectin sensitivity or other contraindications to the conventional drugs.

Conflict of Interest

The authors declare no conflict of interest.

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