



Effect of Trichlorfon (Neguvon) Against *Sarcoptes scabiei var canis*

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Abstract

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Trichlorfon (Neguvon®), Bayer AG, Leverkusen) was evaluated for its effect on naturally occurring infestations of *Sarcoptes scabiei* in 16 dogs. A 0.1% concentration of trichlorfon was applied as a wash once a week for 4 weeks. All treated dogs were cleared of mites and returned to clinical normality after 4 treatments. The miticide was well tolerated by all dogs.

Key words: Canine scabies, dog, *Sarcoptes scabiei*, trichlorfon.

Introduction

Canine scabies is a severely debilitating, highly contagious condition, which spreads through close contact between infested dogs or by contaminated fomites (Bond, 1998). Transfer experiments have shown that canine mites are capable of burrowing, feeding and producing eggs in human skin for a limited period (Estes *et al.*, 1983). Thus, effective treatment of canine scabies is important both to control the condition on the affected dog, and to prevent the risk of zoonotic spread.

Trichlorfon (metrifonate) is an organophosphate used as an insecticide and pesticide for plants and livestock (Neguvon®) as well as an anthelmintic for animals, principally the horse. It can be used systemically in dogs for its anthelmintic and

pesticidal properties. It also gives acceptable control of ticks and fleas and evidence suggests that it aids in control of demodectic mange in approximately 70% of the treated cases (Adams, 1995). The purpose of the present report was to evaluate the efficacy and acceptability of trichlorfon in dogs naturally infested with *S. scabiei var. canis*.

Materials and Methods

Sixteen dogs (40d to 3y; 9 mixed breed 7 German shepherds) referred to the Veterinary Clinic of the School of Veterinary Medicine, Shiraz University, Iran, that had clinical signs of canine scabies and were positive in skin scraping tests, participated in this trial. The clinical signs included: intense pruritus in the most regions of the skin including pinnae, elbows, ventral portion of the thorax and abdomen, regional and diffuse alopecia, crusting, excoriation, papules and erythema. Superficial skin

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scrapings were taken from one of the sites: elbows, pinnae, ventral portion of thorax and abdomen, from all 16 dogs and examined microscopically immediately for the presence of live mites and other stages of parasite (egg, nymph, larva). All dogs were bathed with a shampoo to remove crusts and other debris and then were thoroughly soaked in 0.1% solution of trichlorfon from a 97% powder formulation. The head of the dogs were submerged to allow the insecticide access to parasites that are located on the ears or around the eyes. The treatment was repeated weekly for 4 weeks.

During the first 3 days following bathing, two other drugs, prednisolone (1mg/kg body weight bid po) and chlorpheniramine maleate (a 4 mg tab. for dogs < 18kg body weight and a 8 mg tab. for dogs > 18 kg body weight q8h po) were administered to decrease the pruritus and to provide relief from scratching and to stop self-mutilation.

Results and Discussion

At post-treatment day 2, the pruritus improved and disappeared completely by the end of the first week. Skin lesions improved gradually and disappeared completely 2 weeks after the onset of treatment. By week 4, there were no clinical signs of scabies in any of the 16 dogs and no *S. scabiei* mites or other stages of mite were found on skin scrapings.

Several topical or systemic acaricidal compounds viz lime sulfur and amitraz dips are widely used. The former is safe and effective, but it has an unpleasant odor and can stain light-colored hair coats. In general, dips are recommended every 7 days (lime sulfur) or every 14 days (amitraz) for 4 to 6 weeks. Clipping is recommended for dogs with long or dense coats to allow better skin contact with the acaricidal compound (Scott *et al.*, 1995). Because of these problems, therapeutic alternatives have been sought (Scheidt *et al.*, 1984). Ivermectin and milbemycin oxime, both marketed as a once-

a-month heartworm preventive, have been used as a systemic acaricide in canine scabies (Scheidt *et al.*, 1984). However milbemycin is expensive and ivermectin, when administered subcutaneously, is inconvenient when large numbers of dogs are involved. Besides, there have been reports of serious adverse events occurring in collies and possibly other breeds such as Australian shepherds, Old English sheepdogs and Shetland sheepdogs or their crosses following the unlicensed use of ivermectin (Lovell, 1990). Thus it can be recommended that a 0.1% solution of trichlorfon is an effective and safe treatment for canine sarcoptic mange.

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ए.ए. सार्चाही। सार्काप्टिस स्कैबिआई वार कैनिस पर ट्राइक्लोफॉन (नेगुवन) का प्रभाव।

सार्काप्टिस स्कैबिआई वार कैनिस चिचड़ी (माइट) से होने वाली बिना मौसम प्रभाव की, बहुत खुजली करने वाली, बहुत ही संक्रामक त्वक् ग्रसन है। सार्काप्टिस स्कैबिआई से प्राकृतिक रूप से ग्रसित 16 कुत्तों में खुजली पर ट्राइक्लोफॉन (नेगुवन®, बेअर एजी, लिवरकुसेन) के प्रभाव का मूल्यांकन किया गया। चार सप्ताह तक ट्राइक्लोफॉन के 0.1 प्रतिशत सांद्रता का घोल प्रति सप्ताह एक बार लगाया गया। चार उपचार के बाद सभी प्रभावित कुत्तों से चिचड़ियां नष्ट हो गयीं और कुत्ते सामान्य हो गये। सभी कुत्तों द्वारा चिंचड़ीमारक अच्छी प्रकार सह्य था और किसी प्रकार का प्रतिकूल प्रभाव नहीं पड़ा। प्राकृतिक श्वान खुजली संक्रमण के उपचार के लिए इस औषधि के 0.1 प्रतिशत घोल से नहलाना प्रभावकारी और सुरक्षित था।