Therapeutic management of demodicosis in golden hamsters: A review of 5 cases

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DOI: https://doi.org/10.22271/j.ento.2021.v9.i4e.8792

Abstract

Demodex spp is the most common ectoparasite recognized in golden hamsters (Mesocricetus auratus). Demodex criceti and Demodex aurati are the two distinct species causing demodicosis in hamsters. Five Golden hamsters belonging to different age groups were presented to Teaching Veterinary Clinical Complex, Mannuthy with alopecia and erythema on the dorsal aspect of the body. Physical conditions of animals were slightly below normal. Examination of deep skin scrapings revealed mites identified as Demodex spp. All the five hamsters were treated with subcutaneous administration of ivermectin @ 0.3mg/kg body weight. Topically amitraz dips were recommended at weekly intervals. Oral multivitamin supplements were also given as supportive therapy. The average time period for complete recovery was found to be five consecutive treatments at 2 weeks interval in all the cases. All the animals made an uneventful recovery by 10 weeks period.

Keywords: Demodex criceti, Demodex aurati, golden hamster, ivermectin, amitraz

Introduction

Demodectic mites are normal residents of many mammalian species including humans. Demodex spp is the most common ectoparasite recognized in hamsters. Two distinct species of the genus Demodex, D. aurati and D. criceti were isolated from Golden Hamster. (Nutting, 1961) [1]. Demodex criceti, a non-pathogenic mite that is a resident of keratinized layer of epidermis, has a short length compared to Demodex aurati, which is highly pathogenic and lives in hair follicles and sebaceous glands (Karaer et al., 2009) [2]. Demodicosis in hamsters are manifested by non-pruritic, dry, scaly patches of mild alopecia mainly over the hindquarters, back, neck and abdomen (Ellis and Mori, 2001) [3]. Lethargy and emaciation may also be present (Karaer et al., 2009) [2].

Case history and clinical observation

Five golden hamsters belonging to different age groups were presented to Teaching Veterinary Clinical Complex, Mannuthy with alopecia and erythema on dorsal parts of the body. On physical examination there were scaling, erythema and alopecia on dorsal aspects (Fig 1, 2 & 3). Scaly lesions also observed on ventral areas (Fig 4). Body conditions of animals were below normal. Examination of skin scrapings revealed mites, identified as Demodex spp (Fig 5).

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Fig 1: Alopecia, erythema and crusty lesions on the dorsal aspect
Fig 2: Alopecic areas on the body

Fig 3: Alopecic areas on dorsal parts

Fig 4: Scaly lesions on ventral area

Fig 5: Demodex spp on microscopic examination

Fig 6: Recovery after 10 weeks of treatment

Diagnosis and treatment
Based on clinical signs and laboratory examination findings, cases were diagnosed as demodicosis. All the five hamsters were treated with ivermectin at 0.3 mg/kg body weight subcutaneously at 2 weeks interval for 5 consecutive times. Topically amitraz dips were recommended at weekly intervals. Orally multivitamin supplements were given as supportive therapy. The animals made recovery from clinical signs and found negative for mites after 10 weeks of treatment (Fig 6).
Discussion

The case study deals with the treatment of demodicosis using subcutaneous administration of ivermectin and amitraz topically.

Clinical demodicosis in hamsters are usually seen associated with underlying illness, immunosuppressive conditions, malnutrition and ageing (Ellis and Mori, 2001) [3]. In these cases animals were suffered from malnutrition. Usually the clinical signs associated with demodicosis in hamsters include scaly and scabby erythematous dermatitis. Alopecia is common over the back and rump area (Timm, 1988) [4]. In these animals also, lesions are mostly noticed in rump regions. Diagnosis of demodicosis is usually based on skin scrapings (Timm, 1988) [4] and histopathology.

Several treatment strategies are recommended for demodicosis in hamsters; oral, subcutaneous and topical ivermectin, topical amitraz, topical selamectin and benzoyl peroxide shampoos (Janczak et al., 2017) [5] (Miller et al., 2012) [6]. Miticidal agents like ivermectin can be used in small mammals at a dose rate of 0.2-0.5 mg/kg s.c., p.o. q7-14d (Meredith et al., 2015) [7]. Amitraz can be used topically at 250 ppm once weekly (Miller et al., 2012) [6]. These cases were managed using ivermectin at 0.3 mg/kg BW S.C., amitraz topically and oral multivitamins supplements as supportive therapy.

Conclusion

Demodicosis is a common dermatological condition in golden hamsters caused by demodex mites of species D. aurati and D. criceti. Usually this condition is seen associated with other immunosuppressive conditions. Animals were treated using ivermectin, amitraz and multivitamin supplements. All the five golden hamsters made an uneventful recovery after 10 weeks of treatment.

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