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Therapeutic management of Dermatosis in Rabbits

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Psoroptic mange occurs in the ears of domestic and wild animals, particularly in the ears of rabbits. It is caused by *Psoroptes cuniculi* (Darzi and Samuel, 2001, Bhardwaj *et al.,* 2012). It is a common parasitic disease problem in both pet and commercial rabbits. These ear mites do not burrow, they feed on skin tissue, which irritates the skin and causes lesions and subsequently produces the scabs which protect the mites from the environment and shield them from removal by the animal when it scratches. In India with hot and humid climate, the incidence of the skin infections especially mange in the rabbits is very high (Aulakh *et al*., 2003). Mange leads to listlessness, anorexia, emaciation complication of middle or inner ear, wry neck and deaths resulting in considerable economic losses (Ravindran *et al*., 2000). Ivermectin is used as a broad spectrum parasiticide in domestic animals and is also recommended for treatment of ear mange in rabbits. Several studies have been conducted on the dose levels and duration of parentral administration of ivermectin in rabbits affected with ear mange (Fajimi *et al*., 2002, Jana *et al*.,2004, Hansen *et al*.,2005, Panigrahi and Gupta, 2013). The present study was carried out to evaluate the effect of parentral administration followed by oral administration of ivermectin against *Psoroptic* mange in rabbits.

Materials and Methods

The present study was carried out on 7 Newzealand White rabbits of both sex and aged between 4 months to 1 year presented at Veterinary Clinical Complex, College of Veterinary Science and Animal Husbandry, Junagadh. Three out of 7 rabbits, had the problem of ear canker. Affected rabbits were presented with the history of scratching of ears, shaking of their head and tensing of neck muscles.

The clinical examination of rabbits revealed the loose crusts at the margins of ears, brown wax and scabs with unpleasant odour inside the ears. Hyperkeratosis along with the scales formation was also noticed. Superficial and deep skin scrapings were taken from the margins of ears, using a blunt scalpel blade dipped in liquid paraffin. The collected sample includes dermis, epidermis, scales and hair. All samples were examined by direct microscopic method to evaluate the vitality of the organisms and each sample was also dissolved in 5 ml of 10% solution of sodium hydroxide. The mixture was boiled, centrifuged and the sediment was examined using a light microscope under 10 X and 40 X magnification to identify the causative organism (Soulsby, 2006). Examination of the materials revealed presence of the of *Psoroptes spp.* mange mites.

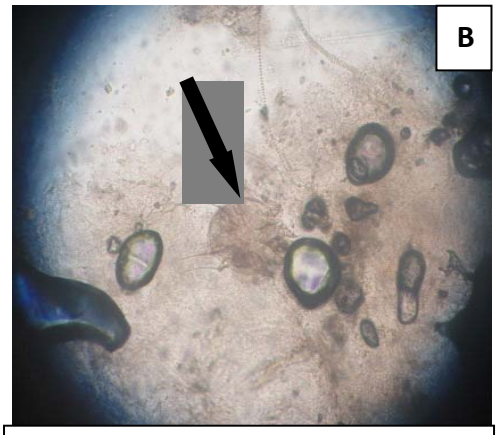
Infected rabbits were treated with subcutaneous administration of ivermectin @ 200 μg/kg body weight on first day, followed by oral administration of ivermectin @ 200 μg/ kg body weight once in 48 hours. Rabbits were daily supplemented with liv-52, PO @ 2 ml per day. Weekly disinfection of the nest areas and surroundings of the sheds with cypermethrin @ 2 ml/litre of water was advised.

Clinical and parasitological examinations were carried out on 7th, 14th and 21st day of post treatment to observe the intensity of itching and crusts formation. Microscopic examination of live and dead mites and number of mites per field was also carried out to know about the clinical as well as laboratory cure.

Results and Discussion

3 out of 7 rabbits were found to be infested with *Psoroptes* mange mites. Hyperkeratosis of ear margins, nasal bridge, brown wax in the ears and intense pruritus were the common signs observed in all infected rabbits. Microscopic evaluation of the scrapings revealed the presence of eggs and adult stages of mites. The pedicels of the mites were long and segmented. The tarsal suckers were observed on the pedicels of the first, second, and third pairs of legs in the male mite and on the first, second, and fourth pairs of legs in the adult female mite. Based on the morphology these mites were identified as *Psoroptes spp.* (Soulsby, 2006). Successful recovery was recorded with ivermectin administration @ 200 μg/kg body weight along with supportive therapy (Deshmukh *et al.,* 2010, Chand *et al.*, 2013).

Ear of the rabbit infested with *Psoroptes cuniculi* mite



***Psoroptes cuniculi* species examined in microscope (40x)**

Post treatment clinical examination of rabbits on 7th day revealed that there was slight improvement in the skin lesions by disappearance of scales and scrapings from the same area revealed the presence of live and dead mites. But numbers of mites were decreased per field of examination. On 14th day of examination, rabbits were free from itching and alopecia along with the presence of dead mites in scrapings and complete disappearance of scales was observed (Kumar *et al.,* 2002). On 21st day of therapy, all rabbits were free from eggs and adult stages of mites. After disappearance of crusts, hair growth in previously infested areas was observed in all infested rabbits. Complete cure was noticed clinically and microscopically after completion of the single dose of subcutaneous ivermectin followed by ten doses of oral Ivermectin (McCarthy *et al.*, 2004). No adverse clinical reactions were recorded following the administration of ivermectin orally during the study period which is in consonance with the findings of Kachhawa *et al.* (2013). In recent reports *Sarcoptic* mange in rabbits was also successfully treated with oral ivermectin without any clinical side effects (Sivajothi *et al.*, 2013 and 2014).

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Conflict of Interest: All authors declare no conflict of interest.

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