

## SARCOPTIC MANGE (SCABIES) AND ITS SUCCESSFUL THERAPEUTIC MANAGEMENT IN RABBITS

JAVAID IQBAL MEMON<sup>1</sup>, TEHMINA SOHAIL<sup>1\*</sup>, HINA IMRAN<sup>1</sup>, RASHID ALI KHAN<sup>1</sup>, SHAZIA SYED<sup>2</sup>

<sup>1</sup>Pharmaceutical Research Centre, PCSIR Labs Complex, Karachi.

<sup>2</sup>Department of Chemistry, University of Karachi, Karachi.

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#### Author's Contribution

JIM planned the research study, contributed to disease diagnosis, treatment and observation period, TS, HI conducted laboratory examination, RAK supervised the research, provided guidance in study and data interpretation, SS contributed to manuscript preparation.

#### Key words:

*Sarcoptic sp.*; mange; rabbit; ivermectin, clinical signs, treatment.

### ABSTRACT

Ten rabbits were presented with clinical signs of alopecia, intense itching, erythema and dry crusty lesions on eyes, ears, nose, legs, genital areas and dorsal region of the body. Skin scrapings revealed *Sarcoptes scabiei* mites. Treatment was initiated with subcutaneous injections of ivermectin @ 400µg/kg body weight every 7th day on 3 occasions and multivitamins as supportive therapy at 10 drops once a day was given for early recovery. After 3 weeks of treatments, clinical examination revealed marked improvement of lesions, and skin scrapings were negative for mites. No relapse of infestation was observed in any of the rabbits under treatment during the 6 month observation period following the treatment.

## 1. INTRODUCTION

Dermatological problems are one of the most common clinical entities in domestic pets and fur bearing animals (Deshmukh *et al.*, 2010) and among them, sarcoptic mange is a highly contagious, non-seasonal, pruritic skin condition in rabbits and is caused by *Sarcoptes scabiei*. Overcrowded living conditions and poor hygiene are significant factors for infection (McCarthy *et al.*, 2004). *Sarcoptes Scabiei* is a deep burrowing mite in epidermis causing intense itching, alopecia, erythema, pruritus, crust formation, scale production, thickening and wrinkling on skin of affected areas (Singh *et al.*, 2017). The mite is very easily transmitted to other surrounding animals through close contact. Severe infection, especially in young and weak animals, causes high mortality (Bornstein *et al.*, 2001). It is the most obstinate, persistent, and zoonotically important contagious disease (Kumar *et al.*, 2002). Sarcoptic mange if left untreated causes significant morbidity and economic losses in livestock (Rehbein *et al.*, 2003; Walton *et al.*, 2004).

The avermectin drug group includes ivermectin, abamectin, doramectin, eprinomectin and selamectin which can be used to treat rabbits that are naturally infested with *Sarcoptes scabiei*. Ivermectin is used as a broad spectrum parasiticide in domestic animals and is also recommended for treatment of ear mange in rabbits.

## 2. MATERIALS AND METHODS

#### History And Clinical Findings:

Ten rabbits were presented in Animal house of PCSIR Labs Complex Karachi with the history of dullness, anorexia, skin lesions with intense itching in ears and nose. On clinical examination, erythema, alopecia, dry crusty lesions on eyes, ears, nose, legs, genital areas, and dorsal region of the body were observed (Fig.1). The conditions of the rabbits were weak, and their body coat was ruffled. Anamnesis revealed that rabbits were kept indoors in moist, dirty, and poorly ventilated houses. Rabbits were divided into two groups (5 in the control group and 5 in the treatment group).

\* Corresponding Author: [tehminasohail23@gmail.com](mailto:tehminasohail23@gmail.com)

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### **Laboratory Examination and Diagnosis:**

For confirmatory diagnosis, skin scraping examination was carried out as per the standard method (Soulsby et al., 2001). Sample skin scrapings were collected aseptically from different affected sites in 10% solution of Potassium Hydroxide (KOH). The mixture was stirred, centrifuged and supernatant discarded, a few drops of sediment were placed on a slide for direct microscopic examination under 40x magnification. Examination of the sample revealed the presence of large numbers of sarcoptes species mange mites (Fig.2).

### **Therapeutic Management:**

After confirmation by laboratory examination, control group was given placebo and affected rabbits were treated with injection Ivermectin @ 400µg/kg body weight subcutaneously for every 7th day on 3 occasions along with supportive treatment Syb: Polybion forte (Vit: B1, B2, B6, B12) @ 10 drops once a day was also prescribed to fasten up the recovery. Disinfection of nests and surrounding area of the shades with cypermethrin @ 2 ml/liter of water was also advised.

## **3. RESULTS AND DISCUSSION**

Clinically, significant improvement was noted from the 7th day and rabbits recovered completely after 21 days. At the same time, after removal of crusts, clinical signs like alopecia and intense itching were also resolved completely (Fig. 3).

Adverse reactions in rabbits under treatment were analyzed by examination during the 10th and 21st day of presentation. The owner was also advised to keep the rabbits under observation for any signs of toxicity. All the rabbits were kept under observation for 6-month post treatment and no relapse of infestation was observed in any of the rabbits during the observation period. All the rabbits were free from any clinical observable adverse reaction due to treatment with Ivermectin throughout the period of study.

Clinical manifestations such as development of scale, scabs, crusts and alopecia along with a considerable number of *Sarcoptes Scabiei* below crusts as observed in present study were consistent with findings of (Chandey et al., 2000; Oraon et al., 2000; Kaplaywar et al., 2017). The lesions observed in rabbits in the present outbreak are like those observed by (Kumar et al., 1999). The leading outbreak of disease occurred during the post raining season. Similarly, high prevalence of mites during low atmospheric and high humidity was also reported by (Ravindran et al., 2000). Ivermectin, @ a dosage of 0.2-0.4mg/kg of body weight administered subcutaneously once every two weeks for 2-3 treatments is usually a simple, safe, and effective treatment (White et al., 2003; Mitra et al., 2014).

In the present case study, treatment was carried out with Ivermectin @ 400µg/kg body weight on 3 occasions as reported by (Kachhawa et al., 2013; Mitra et al., 2014; Singh et al., 2017).

## **4. CONCLUSION**

The present observations indicate that Ivermectin therapy coupled with supportive treatment and disinfection of rabbit nests and surrounding areas is effective in control of Sarcoptic mange in rabbits.

## **5. CONFLICT OF INTEREST**

All authors have declared that there is no conflict of interests regarding the publication of this article.

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Figure 2. Showing mange mites under microscope.



Figure 1. Showing clinical signs on different body parts. (Day 1)



Figure 3. Showing the progress of recovery in a 21-day time span.