

## EFFICACY OF IVERMECTIN AGAINST RABBIT MANGE

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Mange is of common occurrence in rabbits and is of economic importance as nowadays rabbits are reared intensively for fur production. The conventional method of treating mange, besides being laborious, is also not fully effective as the mites lodged in the tunnels in the skin escape treatment. Ivermectin, a derivative of avermectin was reported to be effective against mange in rabbits (Wright and Riner, 1985; Rai, 1988). Ivermectin available as an injectable preparation was used at different doses in the present study to assess its comparative efficacy against rabbit mange.

### Materials and Methods

Twenty one New Zealand White rabbits affected with mange constituted the test group. Mange was confirmed by microscopical examination of skin scrapings. *Notoedres cuniculi* were detected in scrapings collected from the face and body lesions and *Psoroptes cuniculi* in scabs removed from the ear. In Notoedric mange, the affected areas were scaly and encrusted. The lesions were predominant around the eyes, nose, margins of the ear and on the legs.

Skin scrapings collected after 15,30,45 and 60 days following subcutaneous injection of ivermectin were examined to assess the efficacy of the drug. The treated rabbits were observed for regression of skin lesions.

The rabbits were divided into four groups (I, II, III and IV).

- Group I - Ivermectin was administered in three doses at 200 ug/kg body weight at 10 days interval.
- Group II - Two doses at 400 ug/kg body weight at 15 days interval
- Group III - Single dose at 800 ug/kg body weight
- Group IV - Three infected rabbits were maintained separately as untreated controls

Efficacy of ivermectin was evaluated on the basis of clinical and microscopical examination of scrapings collected at intervals of 15, 30, 45 and 60 days and compared with that of the control group.

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## Results

In Group I complete sloughing of crusts was observed after 30 days but lesions on the ear disappeared only after 45 days. Pruritus ceased after 15 days. Stray numbers of mite were observed on day 45 but no mite could be detected on day 60 of administration.

In Group II sloughing of crusts was complete after 20 days and lesions on the ear were clean after 45 days. Pruritus ceased after 8-10 days. Mites were seen on day 45 but were reduced to 0 on day 60.

In Group III crusts were shed after 5-7 days and lesions on the ear disappeared after 15 days of administration of the drug. Pruritus subsided after 4-5 days. Mites were demonstrated in stray numbers on day 30 but no mite could be detected on day 45 of administration.

In group IV the crust remained and mites could be demonstrated in large numbers on day 60 of the experiment.

## Discussion

Rabbits were cleared of mites within 45 days following single dose at 800 ug/kg body weight and within 60 days following double and triple doses at 400 ug/kg body weight and 200 ug/kg body weight.

Single dose of ivermectin at 800 ug/kg body weight was found to be very effective and rapid compared to that observed with multiple doses at 400 ug/kg body weight and 200 ug/kg body weight and that is in agreement with Renukaprasad *et al.* (1989)

who observed complete elimination of mites after 30 days following single dose at 800 ug/kg body weight.

Regression of body lesions following single dose of ivermectin at 800 ug/kg body weight was within 5-7 days and within 20 and 30 days following double doses at 400 ug/kg body weight at 15 days interval and three doses at 200 ug/kg body weight at 10 days interval. Rai (1988) observed that a single subcutaneous injection of 1 mg of ivermectin at 15 and 21 days interval restored normalcy of skin within 15-20 days.

Curtis and Brooks (1990) reported that rabbits were free of *Psoroptes cuniculi* after 33 days following two doses of ivermectin at 400 ug/kg body weight at 15 days interval. However, in the present study *Psoroptes cuniculi* were eliminated after 45 days with two doses of ivermectin at 400 ug/kg body weight at 15 days interval.

## Summary

The comparative efficacy of single and multiple doses of ivermectin on naturally occurring mange in rabbits was evaluated. Ivermectin at 200 ug/kg body weight on three occasions at 10 days interval and at 400 ug/kg body weight on two occasions at 15 days interval reduced live mite counts to 0 in 45-60 days of administration. Single dose at 800 ug/kg body weight eliminated the mites in 30-45 days of administration. Regression of lesions occurred within 5-7 days following single dose whereas 20-30 days following two doses (400 ug/kg) and three doses (200 ug/kg).

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