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فعالية علاج جرب الجسم والأذن فى الأرناب
بجرعة واحدة من الأيفرمكتين

صلاح موسى ، ناهد جاد ، أبراهيم سكر ، محمود عبد الرحيم *

تم علاج حالات شديدة الأصابة وموؤة طبيعيا بجرب الجسم والأذن بحقنها
بجرعة واحدة تحت الجلد من الايفرمكتين ٢٠٠ ميكروجرام لكل كيلوجرام وزن حسي
وقد أذى العلاج الى الشفاء الكامل والتخلص من الحشرة وبأحداث العدوى الصناعية
بمختلف أطوار الحشرة فى جرب الأذن ظهرت الآثار المميزة للمرض فى حين أنها
لم تظهر فى الأرناب التى سبق حقنها بالدواء .

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EFFICACY OF A SINGLE INJECTABLE DOSE OF IVERMECTINE FOR PSOROPTIC AND SARCOPTIC MANGE IN RABBITS

By
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SUMMARY

Severe cases naturally infested with sarcoptic and psoroptic mange were subjected to treatment with a single subcutaneous dose of 200 ug/kg. b.w. Therapy resulted in clinical cure and complete elimination of the parasite. Rabbits infested experimentally with different stages of psoroptic mite produced characteristic mange lesions, while experimental induction of the disease failed in the previously treated rabbits.

INTRODUCTION

Ear canker or mange and skin mange caused by psoroptes and sarcoptes species of mites are responsible for high losses in affected rabbitaries (SANDFORD, 1979).

Many drugs have been tried for the control of mange as benzyl-benzoate or benzene hexachloride, but the results were not satisfactory in affected cases (SOULSBY, 1969).

Ivermectine, a derivative of one of the avermectin compounds, is a macrocyclic lactone disaccharide that has potent activity against numerous immature and mature nematode and arthropod Parasites. (CAMPBELL, 1981 and HOTSON, 1981). The effect of ivermectine on psoroptic mange in rabbits has been demonstrated (WILKINS, *et al.* 1980 and PROSL & KANOUT, 1985).

The present study has been planned to evaluate the efficacy of ivermectine against natural and induced body and earmange in rabbits. At the same time the possible side effect of the drug especially on pregnant animals as well as of springs has been also observed.

MATERIAL and METHODS

Drug:

Ivermectine (otherwise known as M.K. 933 or 22,23 dihydroavermectine B ; Merck, sharp & Dohme) was supplied in a formulation containing the drug in a concentration of 10 mg/ml.

Naturally infested rabbits:

A total of forty mixed breed rabbits, naturally infested with ear and body mange (20 in each) were selected showing intensive lesions, characterized in body mange by diffuse alopecia, crusting and papular dermatitis. Cases suffering from ear mange showed inflammation of the inside of the ear with formation of yellow or brown scabs occluding the ear orifice. The causative mite sarcoptes cuniculi or psoroptes communis were detected in all cases. Animals

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were grouped into 4 groups (10 rabbits each) and treated as follows:

Group A:

suffering from body mange were injected subcutaneously (subcut.) with ivermectine 200 ug/kg. b.w.

Group B:

suffering from body mange were injected subcut with saline solution.

Group C:

suffering from ear mange were injected subcut, with ivermectine 200 ug/kg. b.w.

Group D:

suffering from ear mange were injected subcut. with saline solution.

Age, sex and breed varied within and among groups of rabbits. During the study, all rabbits were fed balanced dry ration. Additional systemic or topical medication was not administered during the experiment. Animals were subjected to careful physical examination and to multiple skin and ear scrapings at 7, 14 & 21 days post-treatment (P.T.).

Skin scrapings:

Skin scrapings of sparsely haired areas were taken at three different sites from each rabbit in groups infested with body mange. Three scrapings were taken from the inside of the ear of rabbits suffering from ear mange. Scrapings were collected in mineral oil and microscopically examined for the presence of live mites. (SOULSBY, 1969). Scrapings containing live mites were considered positive.

Experimental infection:

Scabes rich in sarcoptes, adults, nymphs, larvae, and eggs, collected from skin scrapings of naturally infested rabbits were chopped into a coarse granular mixture which was then divided into 10 portions of approximately equal sizes. One portion was placed in the external acoustic meatus of one ear of 10 clinically healthy "blance de Bouscat" rabbits. The ears were covered with gauze and held in place by adhesive elastic bandage. The covering was removed after 24 hours (CARGILL and DOBSON, 1979). 5 animals were injected subcut. with 200 ug/kg. b.w. ivermectine at the 3rd day post-infestation.

Effect on pregnancy:

10 female 'blance de Bouscat' adult rabbits were mated, at the 12th day after mating pregnancy was diagnosed by abdominal palpation. 5 females were injected with 200 ug/kg. b.w. at the 15th day of pregnancy and the other 5 does were injected at the 28th day of pregnancy. Parturition was observed and litters were examined for 2 weeks.

RESULTS

At the 7 & 14 days P.T., naturally infested rabbits of groups A & C were clinically improved, based on a decrease in the degree of pruritus and a decrease in the number of positive skin and ear scrapings (table 1). Marked clinical improvement was observed at the 21th day p.t. as assessed by a lack of pruritus, evidence of hair growth and lack of crusting. A local reaction at the site of injection or systemic reaction were not noticed in any treated rabbit.

EFFECT OF IVERMECTINE ON MANGE

Specific mange lesions were observed in experimentally non treated rabbits 7 days post infestation manifested with marked erythematous spots on the luminal surface of the ears. A week later, they showed encrustation on the luminal surface and borders of the ears, scrapings from such lesions revealed positive. Rabbits suffered from marked pruritus. On the other hand, all treated rabbits showed no signs or lesions characteristic for mange and no developmental stages of the parasite were detected in skin scrapings. All pregnant treated does gave normal litter regarding size, number and viability of the offspring after full term pregnancy.

DISCUSSION

A marked clinical improvement observed in treated naturally infested rabbits, together with marked decrease in mite populations demonstrated the potent activity of ivermectine against sarcoptic and psoroptic mange in rabbits. Clinical cure of treated cases suffering from psoroptic mange was reported by WILKINS, *et al.* (1980), PROSL & KANOUT, 1985, and RESTANI, *et al.*

Absence of any local or systemic reaction, together with absence of any side effect of the drug in injected pregnant does as well as no treatogenic effect ensure the safety of the drug to rabbits.

It is clear from the results of experimental infection with sarcoptes mite that a single dose is efficient for prevention of development of mange lesions.

Although a single treatment of ivermectine was effective against sarcoptic mange in rabbits, 2 treatments may be advised to eradicate the extensive infestation because of the difficult environmental conditions present in infested rabbitaries (PROSL and KANOUT, 1985).

The high efficacy of ivermectine together with the suitable method of application favours the use of this drug in comparison with the known old laborious methods of topical treatment (CAMPBELL, 1981 and HOTSON, 1981).

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