PARENTERAL APPLOCATION OF RONIDAZOLE

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Ronidazole was found to be effective for the treatment of swine dysentery (SD)(Taylor 1976) used in feed or in drinking water. In this study the efficiency of intramuscular application of ronidazole was tested and eventual adverse local or systemic effect was evaluated.

Materials and methods

The drug - Ten percent water solution of water soluble Ridzol (Lek, Ljubljana) containing 10% of ronidazole was used in all experiments. Rodzol was dissolved in sterile distilled water and kept in refrigerator (4°C) till use. Before use the solution was well agitated. The dose used was 5 mg of ronidazole per kg of body weight. Ridzol premix containing 12% of ronidazole was used for peroral treatment in feed.

Bacteriologic technique - Rectal swabs were streaked on Tripticase Soy Agar containing 5 % of bovine blood and 400 of spectinomycin per ml. The plates were incubater in anaerobic jars with cold catalist at 42°C in an atmesphere of 80% H_2 and 20% of CO_2. They were examined every two days for the presece of -haemolytic zones indicative of Treponema hyodysenteriae for 12 days.

Animals - Pigs used throughout these experiments were convetional cross-breeds.

Experiment No 1 - Preliminary trial on the effect of intramuscular application of Ridzol was carried out on the large pig unit infected with SD. Four pigs weighing 45 kg with clinical signs of SD were used. They were treated intramuscularly with 22 ml of water solution of Ridzol. Pigs recieved no other treatment specific for Treponema hyodysenteriae. Rectal swabs were taken from all 4 pigs 24 hours later and another rectal swab was taken 48 hours later from one of these animals. At the same time pigs were observed for clinical signs of SD and for the local reaction at the site of application.

Experiment No 2 - The clinical and bacteriological effect of intramuscular application of water solution of Ridzol was tested on 7 pigs in the isolation unit. Pigs weighing 60 kg with clinical signs of SD were assigned in 3 groups. In group No1 2 pigs were treated intramuscularly with Ridzol for 4 consecutive days. Group No2 consisted of 2 pigs treated simultaneously intramuscularly with Ridzol for 4 consecutive days and with Ridzol premix in feed at the concentration of 120 ppm of ronidazole for 5 consecutive days. Both groups were observed for 14 days. Group No3 consisted of three intreated controle pigs. They showed clinical signs of SD for 5 days and were then removed from the experiment. All the pigs were observed clinically each day for signs of SD. Rectal swabs were taken daily. On the days 8 and 12 the first and the second group were treated with laxative (Follium senae) in order to exacerbate SD or provoke eventual shedding of Treponema hyodysenteriae.

Experiment No 3 - Preliminary trial on harmlesness of intramuscular applicarion of Ridzol was carreied on 5 suckling piglets on the farm. The piglets weighing 2-3 kg recieved intramuscularly 2 ml of Ridzol for 5 consecutive days. Each day they were observed clinically for local changes at the site of application and for systemic reaction.

Experiment No 4 - We tried to find out if there was any systemic reaction after i/m application of Ridzol that could reflect in weight gain. The experiment was carried out on 20 suckling piglets on the farm. Two litters were used each consisting of 10 piglets, 2 days old. One half of the litter was treated i/m with 1 ml of Ridzol for 4 consecutive days and the other half was treated i/m with 1 ml of sterile physiological solution of NaCl. The piglets were weighed at the first, nineth, twentyth and ninetyth day of the experiment. The site of application was observed clinically for 7 days after application.

Field experiment - During an eradication attempt on the farm 450 piglets 1-16 days old were treated i/m with Ridzol for 4 consecutive days. They were observed clinically for systemic and local reaction during the next treatment.

Results

Experiment No 1 - In preliminary experiment on 4 pigs sick of SD three out of four pigs recovered within 24 hours after one i/m application of Ridzol. One of them was shedding Treponema hyodysenteriae 24 hours after application. No local reaction at the site of application was observed.

Experiment No 2 - The 3rd day of the experiment all the treated pigs clinically recovered. The 2 pigs treated only i/m stoped shedding Treponema hyodysenteriae 48 hours after the first application while the 2 pigs treated simultaneously i/m and p/o stoped shedding Treponema hyodysenteriae 24 hours after the first application. The 3 controle pigs showed clinical signs of SD and shedded Treponema hyodysenteriae for 5 days. Treating with laxative on the days 8 and 12 resulted in diarrhoea but no Treponema hyodysenteriae could be found in rectal swabs or feces. At the site of application there was no local reaction. No gross lesions indicative of SD were found at slaughter 30 days post treatment and T. hyo was not found in colonic mucosa of these animals.

Experiment No 3 - In the trial on 5 suckling piglets no local or systemic reaction was found clinically .

Experiment No 4 - The differences in body weights between principals and controles are not significant (P 0,05). Neither systenic nor local reaction at the site of application was found clinically.

Field experiment - There was no clinically detecteble local or systemic reaction in 450 suckling piglets 1-16 days old treated with Ridzol i/m for 4 consecutive days.

Discussion

The results obtained in experiment No1 and 2 indicate that i/m application of Ridzol is effective in treatment of SD. Pigs treated for 4 consecutive days recovered clinically within 48 hours and T. hyo could no more be found in rectal swabs or feces. The i/m application seems to have no harmfull effect as shown in all the experiments, especialy in experiment No4 and field experiment.

Reference

D.J. Taylor, Vet. Rec. (1976) 99, 453-456.