

SUCCESSFUL CONTROL OF PRE-WEANING DIARRHEA BY THE PREVENTION OF NEONATAL COCCIDIOSIS WITH CEVAZURIL® IN THE FARM AFFECTED BY MULTIPLE PATHOGENS.

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Introduction

Diarrhoea in suckling piglets remains one of the major threats for the health and performance in the pre-weaning period. The cause is usually multifactorial with the presence of various bacteria, viruses and protozoa. The important pathogen involved in the pathophysiology of neonatal diarrhea is the coccidia *Iso spor a suis* (*I. suis*)¹. The aim of this study was to evaluate the efficacy of Cevazuril®, oral suspension containing 5% toltrazuril, in the control of neonatal diarrhea and its impact on growth performance in pre-weaning piglets on a farm with a multi infection status.

Materials and Methods

Conventional pig farm reporting neonatal diarrhea, positive for *E. coli* F4, *Clostridium perfringens* type A (cpa+, cpb2+) and *Rotavirus* was selected. *I. suis* was found in diarrheic piglets 14 days of age. Coglamune® is the vaccine for the immunization of sows, containing alpha toxin of CP type A and beta toxin of CP type C. Sows were vaccinated 6 and 2 weeks before farrowing. Piglets were divided into three treatment groups. Group A – piglets born to non vaccinated sows were not treated with Cevazuril®. Group B – piglets born to non vaccinated sows were treated with Cevazuril® on the 2nd day of age. Group C – piglets from vaccinated sows were treated with Cevazuril®. The total number of piglets in groups A, B and C were 123, 107 and 139 respectively.

Individual weight was measured at 2 days of age and at weaning (on average 27 days). Diarrhea was scored daily according to the scale: 0=no diarrhea, 1=mild pasty diarrhea, 2= severe watery diarrhea². Pooled samples of feces collected from three piglets per litter on day 14 of life were examined by ooscopy on the presence of *I. suis* oocysts.

ANOVA and Fischer's test were used for the statistical evaluation.

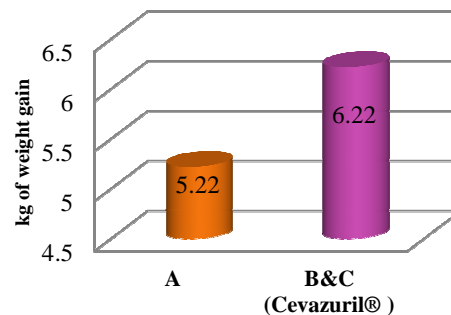
Results

The vaccination of sows against *C. perfringens* did not impact the diarrhea on this farm. Therefore both Cevazuril® groups were combined into one (B&C). The prevalence and quantity of the *I. suis* oocysts excretion was higher in group A (40% positive samples with 885 oocysts per gram on average) compared to group B&C (10% positivity with 15 oocysts per gram). However, due to the low prevalence and high variability of the oocysts amount, the results were not statistically significant.

The weight at weaning in relation to the initial weight before treatment revealed the statistically significant difference in favor of the group B&C compared to group A (7.9 ± 1.85kg versus 6.83 ± 1.75kg). The

growth rate was analyzed using the difference between the average weight at weaning and the weight at the day of the treatment (2nd day of age).

Figure1. The average weight gain until weaning.



The weight gain of the group treated with Cevazuril® was significantly higher compared to non-treated group A (p<0.0001) with an average difference of 1 kg.

For the evaluation of the clinical observation, the average diarrhea score on days 1 and 2 of age were taken as the baseline. The evolution of diarrhea in the course of the trial in weeks 1, 2, 3 and 4 was related to this baseline. The percentage of the deterioration was compared between groups A and B&C.

Table 1. The percentage of the deterioration of diarrhea.

Group	week 1	week 2	week 3	week 4
B&C (Cevazuril®)	14.3%	28.6%	23.8%	19.1%
A	70.0%	80.0%	70.0%	80.0%

Differences were statistically significant in favor of the group B&C in weeks 1, 2, 3 and 4 (p-values 0.0038, 0.0181, 0.0214, and 0.0020 respectively).

Conclusions

Multiple intestinal pathogens which might have participated in diarrhea in the pre-weaning period were present in suckling piglets. *I. suis* seems to play a significant role in the incidence of clinical scours and decrease of growth rate. Treatment of piglets with Cevazuril® proved to be effective in the control of clinical diarrhea, even if newborn piglets were already affected by other concurrent bacterial and viral pathogens. The reduction of diarrhea was accompanied by the increase in the growth rate for 1 kg on average.

References

1. Gualdi V. et al.: 2003, Parasitol Res 90: 163-165
2. Pommier P. et al.: 2003, Revue Méd Vet 154 : 4

