



The control of the *Clostridium perfringens* type A associated diarrhea in suckling piglets by vaccination

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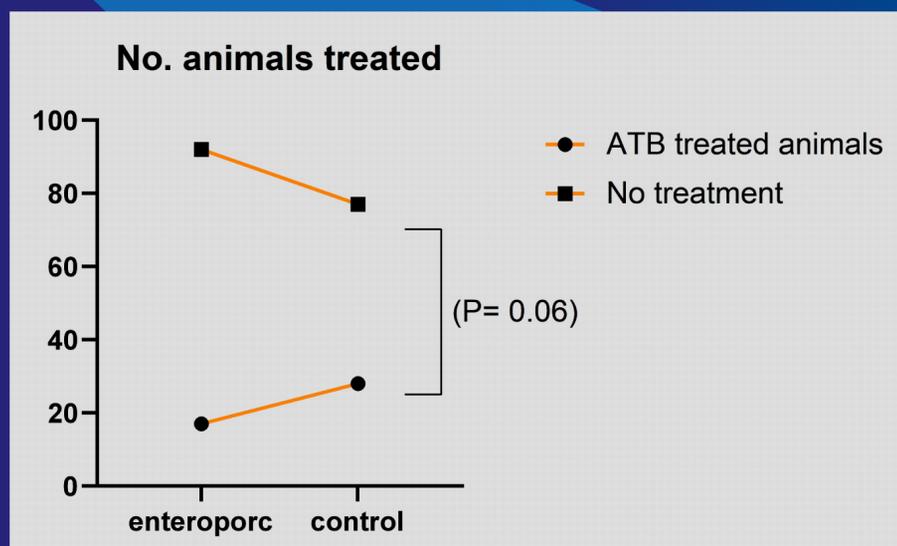
Introduction

Neonatal diarrhoea (ND) is one of the most common disease problems on a pig farms today. Enteroporc coli AC[®] (Ceva Sante Animale, France), recently introduced inactivated vaccine, contains 7 antigens: adhesins of *Escherichia coli* (F4ab, F4ac, F5, F6) and toxoids of *Clostridium perfringens* type A (α and β 2 toxin) and C (β 1 toxin). The aim of the presented study was to investigate the efficacy of vaccination under the field conditions.

Material and Methods

Randomized, controlled, observer blinded trial was performed on the farm affected by ND caused by *C. perfringens* type A (α and β 2 toxin positive), other ND pathogens were ruled out by lab investigation before the start of the study. Two groups of randomly allocated sows of different parity were established: group A (9 litters, average parity 4,1), vaccinated by Enteroporc coli AC[®] 5 and 2 weeks before farrowing and group B (8 litters, average parity 4,25), vaccination according to farm practice (product B: adhesins of *E.coli* F4, F5, F6, F41 and Rota OSU 6). The presence of diarrhea (yes/no) was observed during the first week of life of the piglets (1-7 days of life (DOL)), 14th and 27-28th DOL. Individual antimicrobial treatment and zootechnical performance weaning was recorded. Statistical analysis included Mann-Whitney test and Fisher's exact test using GraphPath Software (San Diego, CA 92108, USA) was performed

Figure 1. The number of the animals treated by antimicrobials during the study period in both vaccine groups.



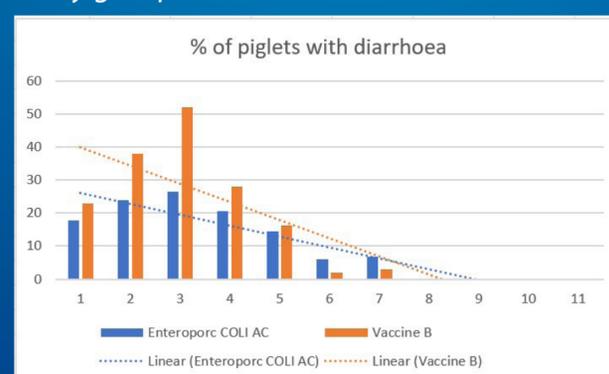
Results

The frequency of diarrhea was significantly higher in group B on the 2nd and 3rd DOL (P= 0,01 and P= 0,0008). The rest of the observational period, groups did not differ significantly. Number of animals which were treated by antibiotics at least once, was higher in group B (26,67 vs. 15,60 %) with statistical trend observed (P= 0,06). Weight gain (kg) and ADG (g) were numerically better in group A (7,52 vs. 7,15 kg and 279 vs. 263 g (all values expressed as median).

Picture 1. Pure culture of *C. perfringens* type A, stained according to Gram.



Figure 2. The frequency (%) of diarrhea in the vaccine groups, the difference on 2nd and 3rd DOL was significantly different between study groups.



Conclusions

The vaccination of the sows by Enteroporc coli AC[®], containing both important toxoids of CpA (α and β 2 toxoid) reduced the overall frequency of diarrhea in piglets during the first week of age, where the impact of ND is the most significant under the conditions of presented study. Effective vaccination reduced the need for individual antibiotic treatment, on farm affected by diarrhea caused by CpA. These results underline the importance of α and β 2 toxin producing CpA strains in diarrhea in suckling piglets and the effectiveness of the vaccine as tool for reduction of antibiotic treatment in the farrowing house.