Occurrence of Clostridium perfringens type A and its toxins in neonatal piglets from four Danish pig farms

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Occurrence of *Clostridium perfringens* type A and its toxins in neonatal piglets from four Danish pig farms

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*Clostridium perfringens* type A is considered a common pathogen involved in neonatal diarrhea in pigs and its ability to cause disease is associated with toxin production (1). The objective of this study was to investigate the occurrence of *Clostridium perfringens* type A and its toxins (alpha and beta2) in healthy and diarrheic pigs in order to determine its association with diarrheic condition.

Materials and methods

51 diarrheic and 50 non-diarrheic piglets aged 3-7 days from four Danish farms were included in this study. The piglets were examined for the presence of *Clostridium perfringens* type A by standard methods of bacterial culturing followed by typing using PCR. Additionally, *Clostridium perfringens* cells were detected in the intestinal tissue by fluorescence in situ hybridization (FISH) carried out with 16S rRNA-targeting oligonucleotide probe. For detection of alpha and beta2 toxin ELISA tests were performed on small intestinal contents from 45 diarrheic and 50 non-diarrheic piglets.

In this study the prevalence of *Clostridium perfringens* type A was higher in non-diarrheic piglets compared to diarrheic piglets and the occurrence of toxins was similar in both groups of animals. No association between the presence of the bacterium or the examined toxins and diarrhea was observed, although there was a slightly higher occurrence of beta2 toxin in diarrheic piglets. Further investigations are necessary in order to determine the role of beta2 toxin in neonatal diarrhea.