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Introduction

PCV-2 the causative pathogen of postweaning multisystemic wasting syndrome (PMWS) and speculated as one of infectious agent related to porcine dermatitis nephropathy syndrome it has also been associated with reproductive failure in gilts.

The PCV-2 identified in North American countries as well in European and Far East ones, can cause great economic losses in swine herds. PMSW represents relatively high fatality risk mainly in nursery and early growing pigs in good health swine herds.

The aim of this study is to investigate the pathogenetic role of the PCV-2 in aborted fetuses associated with reproductive failure.

Materials and Methods

Fetuses and placentae of seventeen litter abortion outbreaks were investigated.

Crown-rump lengths were measured to estimate time of death. Pig fetuses, aborted at 30-110 days of gestation, were necropsied and samples of liver, spleen, lung and lymph node as well as placentae were collected for bacteriology and virological investigations. Histological (H&E, Van Gieson), immunohistochemical (rabbit anti-PCV-2 1:200 and mouse mAb anti-PRRSV SDOW17 1:400) standard ABC peroxidase were performed. PCR detection (PRRSV RT-PCR 398 bp from ORF-7 region; PCV-2 PCR 494 bp from ORF-2 region), virus isolation (pseudorabies, PPV) on pool of fetal tissues and placenta were also performed.

Results

Bacteriology for *Streptococcus* spp., *E. coli*, and *Erysipelothrix rhusiopathiae* was constantly negative as well virological investigations for pseudorabies, PPV and serological test on pleuric fluid for *Leptospira* spp infection. PRRSV RT-PCR assay was positive in only one outbreak, negative for PCV-2.

PCV-2 viral DNA was extracted in homogenate tissues in three abortion outbreaks. Histopathology has shown no lesions in any tissues collected. PCV-2 transplacental infection have been observed and confirmed by immunohistochemistry.

Discussion

Fetal tissues immunohistochemistry was constantly negative for PRRSV, while PCV-2 was detected in lymph nodes in fetuses aged 106 days and in one outbreak also in the placenta. Results demonstrate fetuses infection confirmed by immunohistochemical and PCV-2 PCR detection. The results could also suggest that PCV-2 may cross the placenta barrier and cause abortion after fetal infection. Further studies should be performed for understanding the route of fetal infection, in particular the natural route.

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