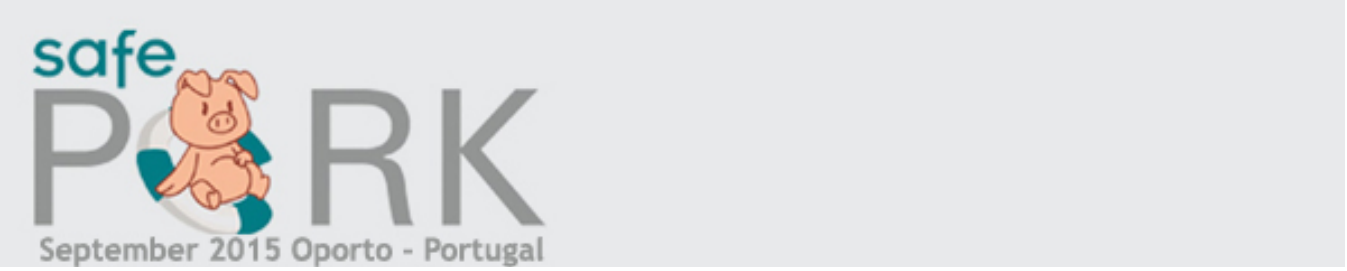

Characterisation of the clinical importance of porcine group C rotavirus in a swine nursery production network in Quebec

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Abstract

Enteric infectious diseases in swine have considerable economic impact on the industry due either to mortality, cost of treatment or reduced growth rates which can lead to extended production periods. The consequences can be catastrophic especially in nursery sites since young piglets are in a susceptible period associated with immature immune system and are often affected by rapid dehydration related to neonatal diseases. Pathogens such as enterotoxigenic *E. coli*, group A rotavirus or *Cl. perfringens* are known to cause clinical symptoms of diarrhea and have led to the development of vaccines. However, additional microbial agents, such as group C rotaviruses (RVC), are also suspected to be important in the development of diarrhea in piglets though few data are available. The objective of the present study was to characterise the clinical importance of porcine RVC in piglets from 11 nursery farms belonging to a single integration system in Quebec. Rectal swabs from 90 piglets with diarrhea and 138 clinically healthy piglets as well as fecal samples from their sows (n=104) were collected over a 15 month period. Within this group of animals, 20 piglets with diarrhea and 5 healthy piglets were euthanized and pathologic examination was conducted on intestinal segments. Viral detection of RVC by conventional RT-PCR showed a significant association between the presence of RVC and diarrhea ($p<0.0001$). Histopathological examination of some intestinal segments revealed lesions compatible with viral infection. Only a small portion of sows (17.3%) were found positive for RVC which suggests that contamination of piglets with RVC was not solely related to fecal excretion of the virus by sows. Overall, the results highlight the importance of RVC as a causative agent of diarrhea in nursing piglets. Further studies are needed to thoroughly understand the epidemiological dynamic of RVC within herds and propose specific preventive strategies against this virus.