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TITLE

IMPACT OF PCV2 CO-INFECTION ON REPLICATION LEVEL OF A FIELD VACCINE-LIKE PRRSV-1 STRAIN

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CONTENT

Introduction

In pig herds, PRRSV is often associated with PCV2, this co-infection being one key factor leading to post-weaning multisystemic wasting syndrome (PMWS). Worryingly, association of a PRRSV modified live vaccine of Type 2 (MLV2) with PCV2 infection was also shown to induce PMWS.

In a French pig farm presenting a clinical presentation of PMWS, we identified a MLV1-like strain in co-infection with PCV2. Through an in vivo experiment, we aimed at evaluating the impact of PCV2 co-infection on virulence level of these MLV1-like and parental MLV1 strains.

Material & Methods

Five groups of 6 SPF piglets were respectively inoculated with one of the 2 PRRSV strains or with PCV2 (MLV1; MLV1-like; PCV2 groups) or co-inoculated with both virus at the same time (MLV1/PCV2; MLV1-like/PCV2 groups). One day after inoculation, 6 contact piglets were added to each inoculated groups. All animals were clinically monitored daily. Blood and nasal swabs were collected twice a week to monitor PRRSV seroconversion and PRRSV genomic viral load. During necropsy, tissues samples were collected for viral quantification.

Results

No clinical signs were detected, whatever the group. Viral loads from MLV1-like and MLV1-like/PCV2 groups were higher in sera, nasal swabs and tonsils in comparison with MLV1 and MLV1/PCV2 groups. No difference was found between MLV1 and MLV1/PCV2 groups; whereas co-infected animals with MLV1-like/PCV2 showed increased viremia and shedding compared to pigs from MLV1-like group. Accordingly, seroconversion was detected early for single or co-infected animals with MLV1-like strain. Finally, PRRSV transmission from inoculated to contact pigs was faster in MLV1-like and MLV1-like/PCV2 groups.

Discussion

Our study showed that the MLV1-like PRRSV-1 strain was able to replicate at a higher level, presenting increased excretion and transmission in comparison to the MLV1 strain. No impact of PCV2 was demonstrated on MLV1 viremia, whereas PCV2 seemed to promote MLV1-like replication.