

**TITLE**

**COMPARISON OF CONTEMPORARY STRAINS OF DIFFERENT PCV2 GENOTYPE VIRUSES BY EXPERIMENTAL INFECTION OF PIGS**

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**CONTENT**

Background and objectives.

Knowledge on the pathogenic characteristics of different genotypes/strains of PCV2 is important for evaluating vaccine efficacy. Our recent survey indicated that PCV2a, PCV2b, and PCV2d genotypes are circulating in Europe. The aim of this study was to evaluate and compare the infection characteristics of representative Belgian and Hungarian isolates of these strains in pigs.

Materials and methods.

Eight weeks old non-vaccinated pigs were inoculated with ~ 1g6 viral copy number/microliter of a PCV2a, two PCV2b (high/low passage, and having 8 amino acids difference), a PCV2d-1 and a PCV2d-2 isolate by nasal route. Throughout four weeks post-challenge viremia, fecal shedding, and humoral antibody responses were measured weekly. At the end of the study, viral load was determined in mediastinal and mesenteric lymph nodes.

Results.

One week pre-challenge, the pigs had no or very low levels of antibodies against PCV2. IgM response was first measurable two weeks post-challenge for the PCV2a, the low passage PCV2b, and the PCV2d-1 strains. IgG response was first detected three weeks post-challenge, for all isolates. Both viremia and fecal virus shedding was measurable already one week after challenge approximately in 20 percent of the animals in each group. The measured PCV2 copy numbers increased for both viremia and fecal excretion throughout the course of the trial. Before slaughter, the high passage PCV2b group excreted significantly lower amount of virus, and had lower viral load in the lymph nodes than the rest, which difference was significant in the case of the mesenteric lymph node.

Discussion and conclusion.

All five recent PCV2 strains evoked humoral antibody responses, induced viremia and were excreted by the inoculated pigs. The highest numerical figures were measured for the PCV2a, the low passage PCV2b, and the two PCV2d strains.