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COMPARISON OF THE EFFICACY OF CIRCOVAC® VACCINE WITH ANOTHER COMMERCIAL VACCINE IN THE PCV2D CHALLENGE MODEL

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Introduction

PCVD (Porcine Circovirus Diseases) remain a common problem in most of swine farms. Strains of different genotypes of PCV2 are circulating in the herds. Circovac® is a whole PCV2 virus inactivated vaccine. The aim of the study was to compare the efficacy of Circovac® against PCV2d genotype with other vaccine mostly used in EU.

Materials and methods

Conventional weaned piglets (21-23 per group) were vaccinated at 3 weeks of age (WOA) either with Circovac® 0.5ml or Vaccine A 1ml, a group of non- vaccinated pigs served as controls. All were challenged at 10 WOA (D0) with 6ml of the inoculum containing 9,7 $\log_{10}$ genomic copies/mL of a PCV2d isolate. Pigs were sampled weekly and sacrified 4 weeks (D28) post-challenge (pch). VN test to measure antibody response and qPCR to measure virus loads were used for efficacy evaluation.

Results

Both vaccinations induced significant neutralizing antibody responses compared to the unvaccinated controls by the time of challenge, i.e. 7 weeks after vaccination.The percentage of pigs with Ct>33.4 viraemia was lower in Circovac® vaccinated pigs already on D21pch compared to Vaccine A and the control: 0%, 10% and 96% respectively. Serum virus contents on D28 differed significantly among the groups with the median values 0; 4.36; and 6.01 of log10 copy number/mL for Circovac, Vaccine A and control respectively($p<0.05$). The amount of the virus in the lymphoid tissue was similar in the two vaccinated groups and significantly lower than in the control pigs.

Conclusion

Circovac® demonstrated good efficacy against the experimental infection with the most important genotype of PCV2 affecting currently swine herds. Circovac® vaccinated pigs cleared the virus from blood faster than Vaccine A. Viremia is an indicator relevant to the clinical outcome and economic losses. Fast reduction of viremia renders Circovac® a highly efficient tool in the control of PCVD.