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TITLE

EFFICACY OF INGELVAC PRRSFLEX® EU AGAINST EXPERIMENTAL CHALLENGE WITH PRRSV AUT15-33 (“ACRO” PRRSV)

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CONTENT

Background and Objectives:Porcine reproductive and respiratory syndrome virus (PRRSV) is still one of the economically most important viruses often combatted by the use of modified live virus vaccines (MLV).The aim of the present study was to test the efficacy of a PRRS MLV against a virulent PRRSV-1 isolate (PRRSV AUT15-33) causing severe clinical problems in the field.Material and Methods:Vaccinated (Ingelvac PRRSFLEX® EU) and non-vaccinated piglets (4 groups, n=16 per group) at four weeks of life (D0) were intranasally infected with a low dose (1x10^3 TCID50) or a high dose (1x10^5 TCID50) of PRRSV (AUT 15-33) at D28. One additional group of ten vaccinated piglets served as vaccination control group (vacc ctrl).Body weight was recorded on day of vaccination (D0), day of challenge (D28) and two weeks after challenge (D41) for calculating average daily weight gain (ADG).Serum samples were collected at different time points throughout the study to assess the viremia levels by qRT-PCR. Piglets were euthanized on D42 and lungs were examined macroscopically and histologically.Results:ADG from D28 to D41 was highest in vacc ctrl (0.74 kg). ADG of vaccinated infected pigs (low dose: 0.64 kg; high dose: 0.61 kg) differed numerically from non-vaccinated infected pigs (low dose: 0.48 kg; high dose: 0.41 kg). The intranasal infection with AUT15-33 led to long lasting viremia in all inoculated piglets. Delayed titer increase was measured in vaccinated infected pigs compared to non-vaccinated infected pigs. Nevertheless, on D39 all infected pigs reached approximately same viremia levels. Macroscopic and histologic lung lesions were significantly lower in vacc ctrl pigs compared to all infected groups and even lower in vaccinated compared to non-vaccinated pigs.Conclusion:Vaccination of piglets with PRRS MLV had a positive effect on ADG and reduced severity of lung lesions after experimental PRRSV infection in our study. AUT15-33 reproducibly causes clinical disease and viremia.