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TITLE

A COMPARATIVE TRIAL EVALUATING IMMUNE RESPONSE, IL-10 AND PROTECTIVE EFFICACY AGAINST A SINGLE HP-PRRSV CHALLENGE OR IN CONJUNCTION WITH PRRSV TYPE 1 OF PIGS INTRADERMALLY AND INTRAMUSCULARLY VACCINATED WITH MODIFIED LIVE PRRSV TYPE 1

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CONTENT

The study was conducted to evaluate the protective efficacy of type 1 porcine reproductive and respiratory syndrome virus (PRRSV) modified live vaccine (MLV) when administered intramuscularly (IM) or intradermally (ID) in pigs against either a single challenge infection with highly pathogenic (HP)-PRRSV or in conjunction with PRRSV type 1. Antibody and IFN-? secreting (ISC) following vaccination in addition to IL-10, a parameter to evaluate safety of the vaccine, were characterized. Forty-two, 3 weeks-old, PRRSV-free pigs were randomly allocated into 7 groups of 6 pigs each. Groups 1 (IM/PRRS2) and 4 (IM/PRRS1+2), and groups 2 (ID/PRRS2) and 5 (ID/PRRS1+2) were intramuscularly and intradermally vaccinated with MLV type 1 (UNISTRAIN® PRRS), respectively. Dosage and route of vaccination were in accordance with manufacturer's directions. Groups 3 (NV/PRRS2) and 6 (NV/PRRS1+2) were left as challenge controls. At 35 days post vaccination, groups 1-3 and 4-6 were intranasally challenged with single HP-PRRSV and in conjunction with type 1 PRRSV, respectively. Group 7 was non-vaccinated and non-challenge control. Following vaccination, ID vaccinated pigs had shorter viremic phase and lower RNA level compared to IM vaccinated pigs. ID vaccinated pigs had significantly lower IL-10 level than IM vaccinated pigs, but ISC were significantly higher. There was no difference in antibody response. Following challenge, viremic phase and lung lesion score at 7 days post challenge were significantly lower in ID vaccinated pig compared to IM vaccinated pigs. In conclusion, the results of the study suggested PRRSV MLV administered, either by ID or IM, can provided protection against challenge with HP-PRRSV, either alone or in conjunction with PRRSV type 1 as demonstrated by reduced lung lesion and viremia. ID route might represent an alternative to improve vaccine efficacy as it provided lower IL-10 and higher ISC.