INTRADERMAL VACCINATION WITH UNISTRAIN® PRRS IN GILTS REDUCES VIRAEMIA AND VERTICAL/HORIZONTAL TRANSMISSION AFTER A HETEROLOGOUS CHALLENGE

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INTRODUCTION

The aim of this study was to demonstrate that UNISTRAIN® PRRS applied by the intradermal route (ID) with a Hipradermic® device in gilts controlled viraemia and vertical/horizontal transmission after heterologous PRRSV challenge.

MATERIAL & METHODS

Sixteen gilts, clinically healthy and free from virus and antibodies against PRRS, were randomly assigned to two different groups. One group was vaccinated intradermally with UNISTRAIN® PRRS (0.2 ml/dose; 10^{1.5} CCID_{50}/animal) 4 weeks before artificial insemination (AI). Animals in the non-vaccinated group received 0.2 ml of PBS (ID). At 90 days of gestation, all the gilts were challenged by intranasal route with a heterologous pathogenic strain of genotype I PRRSV (Italian strain; 89% ORF5 homology; 10^{5.0}CCID_{50}/gilt). Serum samples, nasal swabs and dead piglet tissues were analyzed by RT-PCR to determine the evolution of viaremia.

RESULTS

No clinical signs were observed resulting from the intradermal administration of UNISTRAIN® PRRS in gilts 4 weeks before AI.

Vaccination statistically reduced the length of viraemia (0.9±2.5 days vs 20.6±5.5 days) induced by the heterologous strain in gilts. In the vaccinated group, a statistically significant (p<0.05) reduction in the number of viraemic gilts was also observed (12.5% vs 100%).

DISCUSSION

The results obtained allow us to conclude that vaccination of gilts with UNISTRAIN® PRRS ID using a Hipradermic® device enabled the gilts to clear the virus and reduced its vertical and horizontal transmission to piglets. UNISTRAIN® PRRS, when administered via the ID route, is a safe and useful tool to reduce the transmission of PRRS virus within and between pig populations.

Figure 1. Length of viraemia after challenge.

Figure 2. Length of nasal shedding after challenge.

Figure 3. Vertical transmission after challenge.

Vaccination with UNISTRAIN® PRRS resulted in a statistical reduction in the nasal shedding period (0.9±2.5 days vs 22.3±13.0 days), decreasing the possibility of horizontal transmission during lactation.