IMM-001

FIELD SAFETY STUDY OF A VAGINAL MUCOSAL VACCINATION FOR PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS (PRRSV) IN SOWS

G. Almond [1], C. Sexton [2], J. Bonin Ferreira [1], A. Smythe [3], J. Seate [3].

[1] College of Vet Med, North Carolina State Univ., Raleigh, United States; [2] Livestock Veterinary Services, Kinston, United States; [3] Aptimmune Biologics, Champaign, United States.

Introduction

Mucosal vaccines, specifically autogenous vaccines, offer a new method of immunization against PRRSV; however, intranasal vaccination of sows represents an obstacle for producers. Therefore, this study evaluated the clinical safety of a mucosal PRRSv vaccine administered intravaginally to sows.

Materials and Methods

The treatment (TMT) group included 10 pregnant sows (mid-gestation) and 10 open sows. Each sow received the killed vaccine (2 ml dose; Strain 1-7-3 [killed], Barricade PRRS®) as a small volume infusion into the anterior vagina. The control (CON) group included 10 pregnant sows and 10 open sows. The CON group received a placebo intravaginal infusion. Blood samples and oral fluids were collected from sows at day 0 (prior to vaccination), day 21, and day 50. Serum samples were tested for ELISA and neutralizing antibody responses (FFN) at Iowa State University. The IgA levels in oral fluid samples also were evaluated with ELISA testing. Results were analyzed by an ANOVA with treatment, reproductive stage, day and interactions as the independent variables. Means were compared with Tukey's test.

Results

Many sows had existing ELISA and FFN titers prior to the vaccine and placebo infusions. Few differences between TMT and CON sows were evident in open or pregnant sows. All other open sows (both CON and TMT) conceived at a subsequent mating (prior to Day 21), and all pregnant sows remained pregnant throughout the course of the study. At no time did the TMT sows become inappetant nor lose their pregnancies.

Discussion

The typical route of natural PRRSV infection is through mucosal membranes. Therefore, this method of vaccination appeared to be a logical and valid approach. To conduct whole-herd vaccinations, producers would have the option of vaccinating sows without the use of needles for IM injections. Studies with PRRSV-naïve sows are needed to show antigenic stimulation.