Allen D. Leman Swine Conference

UNIVERSITY OF MINNESOTA
College of Veterinary Medicine
Driven to Discover℠

Volume 39
2012

Published by: Veterinary Continuing Education

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A comparison of injection site lesions in nursery pigs vaccinated with commercial single dose PCV2 vaccine products

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Introduction

Safety and efficacy are measured by practitioners and results are evaluated in the decision process to recommend the proper vaccine for their clients' pigs. The objective of this study was to measure relative safety of two commercial, one-dose porcine circovirus type 2 (PCV2) vaccines by comparing injection site reactivity.

Materials and Methods

Three week old pigs (n=559) with no estheric or palpable lesions on their neck were weaned into a nursery facility. On day 0 (~21 days of age), pigs were tagged in the left ear with a radio frequency identification (RFID) tag and randomly assigned to one of three treatment groups (Table 1). All treatment groups were comingled in pens. For vaccination, all pigs were picked up, restrained, and injected in the right side of the neck with an 18g x 5/8" needle. Needles were changed every fifteen pigs.

Table 1. Vaccination Protocol

Treatment	n	Dosage	Day
Control/Saline	58	2ml	0
Vaccine A*	251	1ml	0
Vaccine B**	250	2ml	0

*Ingelvac CircoFLEX® (Boehringer Ingelheim Vetmedica, Inc, St. Joseph, MO)
** Fostera™ PCV (Pfizer, New York, NY)

Palpations of the right side of the neck were conducted on days 7, 14 and 21 post-vaccination. Pigs with palpable lesions were picked up, lesions were circumscribed with black ink, and the greatest diameter was measured with a digital caliper.

Results

The injection site reactions (palpable lesions) are shown in table 2.

Table 2: Palpable lesion rate by days post-injection (DPI)

	Percent of pigs with lesions, %		
DPI	Control	Vaccine A	Vaccine B
d7	0.0% [a] (0/58)	0.0% [a] (0/251)	3.2% [b] (8/250)
d14	0.0% [a] (0/58)	0.8% [a] (2/249)	12.1% [b] (30/248)
d21	0.0% [a] (0/58)	0.0% [a] (0/249)	2.0% [b] (5/248)

Rows with different superscripts differ significantly (Fisher's exact test) $P < 0.05$

The average diameter of lesions was 26.6mm, 50.1mm and 52.7mm on days 7, 14 and 21, respectively, for Vaccine B. On day 14 Vaccine A had an average lesion diameter of 29.9mm.

Discussion

Under the conditions of this study, there was no difference in injection site lesions between pigs vaccinated with Vaccine A compared to pigs injected with saline. Pigs vaccinated with Vaccine B had a significantly greater ($P<0.05$) number of injection site lesions at days 7, 14 and 21 post-vaccination as compared to both controls and pigs vaccinated with Vaccine A. Single dose PCV2 vaccines differ in the extent of injection site lesions induced post-vaccination. This study is consistent with previous studies[1,2].

References

1) Waddell, J, et al. 2012 IPVS, Jeju, Korea
2) Payne, B, et al. 2012. Submitted, Proceedings Leman Swine Conference, St. Paul, MN.