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A comparison of post-vaccination injection site lesions between single dose PCV2 vaccines

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Introduction

Porcine circovirus type 2 (PCV2) vaccines entered the marketplace in 2005. As new products enter the market, practitioners must evaluate the relative safety and efficacy of the vaccines available. The objective of this study was to compare injection site reactivity of two commercially available PCV2 vaccines.

Materials and Methods

Three week old pigs (n=999) were weaned into a nursery facility. Pigs included in the study had no esthetic or palpable lesions on the right side of the neck. On day 0 (weaning), pigs were tagged in the left ear with radio frequency identification (RFID) tag and randomly assigned to one of three treatment groups. The vaccination protocol is described in Table 1. All treatment groups were comingled in 37 pens (27 pigs/pen). All pigs were picked up, restrained, and injected in the right neck with an 18g x 5/8" needle. Needles were changed every pen to mimic standard field conditions.

Table 1. Vaccination Protocol

Treatment	n	Dosage	Day
Control/Saline	111	2ml	0
Vaccine A*	444	1ml	0
Vaccine B**	444	2ml	0

*Ingelvac CircoFLEX[®] (Boehringer Ingelheim Vetmedica, Inc, St. Joseph, MO)

** Foster[™] PCV (Pfizer, New York, NY)

Palpations of the right side of the neck were completed on days 1, 7 and 21. Pigs with palpable lesions were picked up, and lesions were circumscribed with black ink and measured with a digital caliper. Both the greatest diameter and diameter perpendicular to the greatest diameter of the lesion were measured.

Results

The rate of palpable lesions is shown in table 2.

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

DPI	Percent of pigs with lesions, %		
	Control	Vaccine A	Vaccine B
d1	0.0% (0/111)	0.0% (0/444)	0.0% (0/444)
d7	0.0% ^a (0/111)	0.0% ^a (0/444)	2.93% ^b (13/444)
d21	0.0% ^a (0/111)	0.0% ^a (0/444)	3.60% ^b (16/444)

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

No lesions were palpable one day post vaccination. The greatest diameter of lesions ranged from 28.6-59.8 mm and 32.0-77.0 mm on days 7 and 21, respectively, for Vaccine B.

Discussion

Under the conditions of this study, there was no difference ($P > 0.10$) 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 and 21 post-vaccination as compared to both Controls and pigs vaccinated with Vaccine A. This study did not evaluate day 14 but in another trial, the peak of injection site reactivity for Vaccine B is 14 days post injection.¹ Therefore, the percent of pigs with injection site lesions in the Vaccine B group may be underestimated in this trial. Single dose PCV2 vaccines differ in the extent of injection site lesions induced post-vaccination.

References

1. Sponheim et al. 2012. Leman Conference. Abstract submitted.