



Allen D. Leman Swine Conference



Volume 39
2012

Published by: Veterinary Continuing Education

Sponsors

We thank the following sponsors:

Platinum

Bayer Animal Health
Pfizer Animal Health

Gold

Novartis Animal Health

Silver

Boehringer Ingelheim Vetmedica, Inc.
National Pork Board
Newport Laboratories

Bronze

Merck Animal Health

Copper

AgStar Financial Services
Elanco Animal Health
GlobalVetLINK
IDEXX
Novus International, Inc.
PIC USA
USDA PRRS CAP

University of Minnesota Institutional Partners

College of Veterinary Medicine
University of Minnesota Extension
College of Food, Agriculture and Natural Resources Sciences

Evaluation of injection site lesions following PCV2 vaccination

¹Charles Wiedmeyer DVM, PhD, ²Tom Fangman, DVM, MS, ¹Kim Lonneman DVM ³Kent Schwartz, DVM, MS

¹Univ of MO, Columbia, MO ²Boehringer Ingelheim Vetmedica Inc St. Joseph, MO, ³Iowa State University, Ames, IA,

Introduction

Vaccines are widely used in the swine industry to prevent infectious diseases. Occasionally, tissue reactions occur at the injection site. The types of tissue reactions that typically occur are a granulomatous response to the adjuvant, or suppurative inflammation (i.e. abscess) due to unsanitary injection technique. Defining the type of reaction is useful to institute control measures to prevent tissue damage. The goal of this study was to correlate gross and histopathological findings to cytological findings obtained via needle aspirate from injection site reactions.

Materials and Methods

Alternating pens of clinically normal weaned pigs (3 weeks of age, n=2991) were injected intramuscularly in the right cervical region with either a licensed single-dose vaccine (Treatment A) or with a licensed two-dose vaccine (Treatment B). The second dose of Treatment B was injected on D17 post-weaning and the pigs receiving the one dose vaccine were injected with saline on the same day. Treatment administrators were blinded to treatment group. Twelve pigs with grossly visible swelling at the site of vaccine injection were randomly chosen for further analysis on D24 post-weaning. Each injection site lesion was measured using a digital caliper. A 22g and an 18g needle were used to collect two separate aspirates and prepared for routine cytology. All slides were examined by a board-certified veterinary clinical pathologist. Pigs were then humanely euthanized and lesions sampled for histopathologic examination.

Results

All 12 randomly selected pigs were from the vaccine B treatment group. The diameter of lesions from all pigs ranged from 4.8-10.7cm (mean=7.4cm). Cytology consistently demonstrated a granulomatous to mixed inflammatory response characterized by macrophages, small lymphocytes and very low numbers of non-degenerate neutrophils. No differences in interpretation or specimen quality were observed between 22g or 18g needle collections. Histopathology revealed subacute to severe mononuclear cell infiltrations within muscle and connective tissue. Neutrophils, foreign material or bacteria were not a prominent feature in all lesions.

Conclusions

Based on similar cytology and histopathology findings of the tissue reaction sites, it can be concluded that cytology is a viable option to characterizing these types of lesions. This will provide herd management personnel a technique to adequately characterize tissue reaction lesions in order to alter vaccination protocols without the need for pig loss. Under the conditions of this observation, the injections site lesions were deemed to be granulomatous responses.

References:

Taphorn et al. 2012. AASV Proc. P351
Menard. Can Vet J 1986. Vol27 no12.P504