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A case report on the dynamics of PCVAD in a PCV2-vaccinated herd over time

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Introduction and Objectives

Porcine Circovirus type 2 (PCV2) is the necessary etiologic agent of Porcine Circovirus Associated Disease (PCVAD).[1] The use of a single dose PCV2 vaccine (Ingelvac CircoFLEX®, Boehringer Ingelheim Vetmedica, Inc.) in weaned piglets has been shown to decrease combined finishing mortality and cull rates and improve rate of finishing weight gain.[2] The purpose of this case report is to describe the dynamics of clinical PCVAD after one year of vaccinating piglets at weaning and then temporarily ceasing vaccination.

Materials and Methods

A multiple site, 2400 sow system was used in this study. The system is negative for PRRS virus and for *Mycoplasma hyopneumoniae*. Historically the system has experienced PCVAD in pigs at 10-14 weeks of age with 12-15% combined finishing mortality and cull rates. In January 2006, a PCV2 weaned piglet vaccination program was implemented. Combined finishing mortality and cull rates decreased significantly to 2-3% after the Ingelvac CircoFLEX vaccination program was implemented.[2] In June 2007, a field trial was initiated in the herd (involving sow vaccination, piglet vaccination, both or neither) which resulted in the first group of non-PCV2 vaccinated pigs in the system in over a year. The specific group of non-vaccinated pigs reported here was derived from non-vaccinated sows.

Results

Prior to the implementation of the PCV2 piglet vaccination protocol, PCVAD had been consistently apparent with clinical onset at 10-14 weeks of age. After the initiation of the vaccination protocol, a cessation of clinical PCVAD occurred and finishing performance greatly improved. When vaccination was withheld from a single group of 483 piglets, the group developed clinical signs consistent with PCVAD at 18 weeks of age. Mortalities were confirmed to be due to PCVAD by histopathology and immunohistochemistry. The non-vaccinated group of pigs had a combined finishing mortality and cull rate of 12.17% (5.18% mortality and 6.63% cull rate), consistent with rates experienced prior to implementation of the PCV2 weaned piglet vaccination protocol

Conclusions

Mortality, cull, and weight gain rates were significantly improved by piglet Ingelvac CircoFLEX® vaccination for more than a year prior to withholding vaccination from a group of piglets. The year-long continuous piglet vaccination protocol apparently did not result in the elimination of the virus from the system since the first non-vaccinated group of pigs experienced mortality and cull rates similar to those observed prior to vaccination. However it appeared that clinical onset of PCVAD was delayed in this group of pigs compared to pre-vaccination groups. Clinical onset had historically occurred at 10-14 weeks of age but did not occur until 18 weeks of age in the later non-vaccinated group. It is unknown whether the vaccination protocol (year long piglet vaccination and temporary partial sow herd vaccination) altered the temporal dynamics of PCV2 infection and onset of clinical PCVAD or if this was a normal phenomenon associated with chronicity of herd infection. Temporary cessation of piglet vaccination resulted in significant reemergence of clinical PCVAD. Continuous piglet PCV2 vaccination appears to be necessary for the consistent control of PCVAD.

References

1. G. Allan et al. 2002. *Vet Rec* (150)255-256.
2. G Cline et al. 2008. *Vet Rec.* In press.