

Circovirus disease – what have vets been seeing?

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Porcine circovirus type 2 disease (PCVD) has a curious history in North America. The initial descriptions of a PCV2 associated wasting syndrome (PMWS) were made in Canada in the mid 1990s. Over the next few years, although PCVD was recognized throughout North America, it was rarely a dramatic disease. Meanwhile, PCVD ‘exploded’ across Europe causing devastating epidemics in various countries (e.g. Spain, France, UK, Denmark). The North American picture changed suddenly in late 2004, when a severe PCVD epidemic struck Quebec. About a year later, outbreaks of very severe PCVD occurred in some pockets of the USA, notably in North Carolina and Kansas. Lots of questions remain about why the disease unfolded in this unusual manner, after ‘simmering’ at a relatively low level for the best part of a decade. One enigma is that the PCV2 virus was already widespread in pig populations for decades preceding the recognition of PCVD, and some countries such as Australia have seen minimal evidence of disease although the virus is prevalent in the industry. As part of an ongoing investigation of severe PCVD in US swine herds, we conducted an email survey of US members of the American Association of Swine Veterinarians to obtain some general information about their experiences with the disease. The following findings are from 172 swine veterinarians who were working as clinicians and responsible for finishing sites during 2006. Of these, 146 vets (85%) based in 17 different states had diagnosed PCVD in finishing pigs during 2006, indicating the widespread nature of the disease. For the most part (approximately 90% of respondents), veterinarians typically relied on diagnostic laboratory support when diagnosing PCVD. In 4 of the 5 states where veterinarians had not observed PCVD (Georgia, Idaho, Michigan, and North Dakota) only one veterinarian responded to the survey. However, in the fifth state (Oklahoma) none of 4 veterinarians had diagnosed PCVD in 2006.

Vets were asked how frequently they observed different clinical features of PCVD (wasting, respiratory disease, diarrhea, dermatopathy-nephropathy (PDNS)) in the sites they serviced. The clinical patterns described varied among veterinarians. For each of these clinical features, individual veterinarians reported that they occurred in none of their cases or in up to 100% of cases. However, for both wasting (33% of vets) and respiratory signs (20% of vets), the most common response was that these features occurred in all outbreaks they had diagnosed. In contrast, vets most commonly (34% of vets) estimated PDNS occurring in 10% of PCVD cases, and a further 18% estimated PDNS was seen in 20% of cases. The most common estimation for diarrhea was 50% of cases (19% of vets). Veterinarians were also asked to estimate the number of finishing sites that they oversee, and the number of these sites that had experienced PCVD during 2006. Considering just veterinarians who mostly or always relied on laboratory confirmation for PCVD diagnosis, they estimated PCVD to have occurred on over 3700 sites (or about 50% of the sites they oversee). Furthermore, among the affected sites about 70% were considered to have experienced a threefold increase in mortality associated with PCVD outbreaks, and approximately 46% were estimated to have experienced finishing mortality of 15% or greater.

The severity of PCVD across the world has sparked an intense research effort in Europe and North America. Much attention is now being paid to the possible role of new strains of the PCV2 virus, but opinions about the importance of such strains remain divided. While many questions remain about PCVD at a biological level, the outlook for control looks to be more positive than has been the case with PRRS. In the USA, early reports of the efficacy of PCV2 vaccines for preventing PCVD have been extraordinarily positive, and a major challenge has been for companies to meet the demand for their products. However, in Europe many countries have had little or no vaccine available yet the incidence of PCVD appears to have dropped considerably in several countries. Given the frustration that many practitioners have expressed about the difficulty of controlling PCVD on individual farms, this apparent decline in incidence may reflect increased population immunity more so than alterations in management of production. Either way, it seems we have grounds for hoping that the worst may be behind us.