



The risk of influenza A virus transmission between piglets and nurse sows

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Background

Swine Influenza A Virus (SIV) causes reduced growth in piglets. Nursing piglets are often infected, despite the presence of colostrum antibodies from immune or vaccinated sows. Piglets may be infected from the mother or from retrograde infection from older piglets moved back, when mixing piglets of different age classes.

Objective

To observe the dynamics of SIV transmission in three herds, farrowing sows, nurse sows and movement of piglets between litters was followed. All litters were tested twice for SIV to monitor the transmission of SIV within the batches.

Materials and Methods

All litters (five piglets from each litter) from three batches in herds A, B and C (known SIV positive) were tested for SIV by real-time PCR on day 10 and day 21, on pooled nasal swabs. Sections were empty and disinfected when sows entered to farrow. No piglets entered the sections. Nurse sows introduced from other sections were tested for SIV by udder swabs. All samples were tested by qPCR using a high-throughput qPCR platform (Biomark HD).

Results

In one of the nine batches (C3), all litters were SIV negative on day 10 and day 21. In one batch (B1), all litters were SIV negative day 10. In three batches, more litters were tested positive on day 10 than on day 21, while in 5 batches, most litters were tested positive on day 21. In all three herds, some of the nurse sows carried SIV on their udders when they were introduced. Nine infected nurse sows entered batch C3, with no evidence of SIV in the entire batch.

Table 1. Number of litters and nurse sows and positive tests for SIV

Batch	Herd A			Herd B			Herd C		
	A1	A2	A3	B1	B2	B3	C1	C2	C3
No. of litters	27	36	29	48	47	47	41	42	42
No. litters with SIV day 10	10	23	1	0	11	39	9	4	0
% SIV pos litters day 10	37	100	3	0	23	83	22	10	0
No. litters with SIV day 21	5	6	28	24	46	25	40	30	0
% SIV pos litters day 21	19	17	97	50	98	53	98	71	0
No. nurse sows into section	3	5	4	31	27	30	21	24	23
No. nurse sows with SIV on udder	0	2	0	2	2	4	7	9	9

Conclusion

SIV infected most of the batches during nursing. The dynamics of SIV transmission varies within batches. This should be included in research and advice. Udder swabs taken when nurse sows were introduced often contained SIV.

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