

**The association between transmission rate and disease severity for *Actinobacillus pleuropneumoniae* infection in pigs**

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Infections can lead to variable course of disease between individuals, with subsequent variable consequences for the infectivity. In general, improved understanding of the variation in infectivity helps to understand the behaviour of outbreaks of disease and design effective control measures. In pigs *Actinobacillus pleuropneumoniae* causes respiratory disease and infectivity is highly variable. While subclinical infections are most prevalent, outbreaks of clinical disease occur occasionally. Knowledge of the association between clinical disease severity and infectivity could aid to better means of control. Pairwise transmission experiments were performed to investigate the role of disease severity on the transmission of *A. pleuropneumoniae*. Ten Caesarean-derived, colostrum-deprived pigs were inoculated intranasally with  $5 \times 10^6$  cfu of *A. pleuropneumoniae* strain 1536 and housed together with a contact pig. Clinical disease was scored and the course of infection was observed by selective bacterial examination of tonsillar brush and nasal swab samples. In 6 of 10 pairs transmission was observed. While variable clinical disease scores (CS) was observed in all inoculated pigs, CS in contact exposed piglets were low. CS was significantly associated with bacterial load in *A. pleuropneumoniae* positive pigs. Results showed that transmission rate was positively associated with the bacterial quantity in nasal samples, but negatively associated to CS. Finally CS in contact pigs was not associated to CS in the inoculated pigs. With respect to the evolution of outbreaks of *A. pleuropneumoniae*, we conclude that clinical outbreaks are not due to increased transmission of *A. pleuropneumoniae*.