Primary infection protects pigs against re-infection with Lawsonia intracellularis in experimental challenge studies

In two separate trials previous term pigs next term were experimentally infected with previous term Lawsonia intracellularis next term at 5–6 weeks of age followed by antibiotic treatment and resolution of the previous term primary infection and then renext term inoculated at 12–13 weeks of age. A treatment-control group of previous term pigs next term received the previous term primary infection next term and antibiotic treatment only, and served as control for the antibiotic treatment of the previous term primary infection. next term A previous term challenge next term term-control group of previous term pigs next term received the second inoculation dose only at 12–13 weeks of age to control infectivity of the previous term challenge next term term-dose and susceptibility of previous term pigs next term to L. previous term intracellularis next term at this age. previous term pigs next term were monitored for shedding of L. previous term intracellularis next term in faeces by PCR, and for the development of antibodies and responses of acute phase proteins in serum. The presence of L. previous term intracellularis next term antigen in the intestinal mucosa was examined in post mortem samples by immunohistochemistry. In both trials previous term primary next term infected previous term pigs next term were protected from previous term infection next term after previous term challenge next term term inoculation as evidenced by absence of faecal shedding of L. previous term intracellularis next term, lack of changes in acute phase protein concentrations after previous term challenge next term and with low levels of bacterial antigen in the intestinal mucosa of previous term renext term inoculated previous term pigs next term comparable to that of the treatment-control previous term pigs next term. In contrast, previous term challenge next term term-control previous term pigs next term shed L. previous term intracellularis next term in faeces, had L. previous term intracellularis next term antigen extensively present within all layers of the intestinal mucosa and developed a significant acute phase protein response in serum after the previous term experimental infection. next term The acute phase protein response to L. previous term intracellularis infection next term was detected as an increased rise in the serum concentrations of C-reactive protein and haptoglobin from day-6 post previous term infection next term and increased serum concentrations of haptoglobin were generally seen 2–3 weeks after inoculation both at 5–6 and 12–13 weeks of age. In conclusion substantial protection previous term against next term L. previous term intracellularis infection next term was found in the previous term renext term inoculated previous term pigs next term in contrast to the development of previous term infection next term in age-matched control previous term pigs next term. The acute phase protein response reflected both the observed protection previous term against next term L. previous term intracellularis infection next term upon secondary previous term challenge next term and that increased resistance to the previous term infection next term develops with age.

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