

PHE signs become first visible only weeks after initial *Lawsonia intracellularis* infection



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INTRODUCTION

Porcine Hemorrhagic Enteritis (PHE) is the most dramatic clinical form of ileitis caused by *Lawsonia intracellularis* (Li) and is characterized by acute hemorrhagic diarrhea and sudden death of replacement animals and finishing pigs close to market². Clinical PHE is mainly related to a batch infection from about 16 weeks of age⁴. PHE has an on average low morbidity but a high mortality and over time usually occurs in outbreaks.

The objective of this study was to have an indication of the minimum time that passes between the initial Li infection and clinical signs of PHE and to elucidate whether the dramatic clinical signs are related to an acute infection with Li.

Picture 1: Part of the small intestine showing hemorrhagic enteritis and large blood clot in the lumen



MATERIALS AND METHODS

From May 2013 until August 2014 GD Animal Health received 48 ileitis suspected cases for necropsy. When gross lesions were in line with the clinical picture Li infection was confirmed by histology and PCR testing. From the heart blood was taken and tested for Li-IgG antibodies (IFAT). We used the IgG-positive test result as an indication for the minimal period that had passed between infection and death, having PHE signs.

RESULTS

Based on gross lesions (anemia, presence of blood/ blood clots in the small and/ or large intestines) 22 of the 48 ileitis suspected cases were defined as PHE. Of these PHE cases 82% were serologically IgG positive at necropsy.

Table 1: Li-IgG (IFAT) test results in PHE confirmed cases

IFAT test results	cases
negative	1
ambiguous	3
positive	18

DISCUSSION AND CONCLUSION

A previous study indicated that sero-positivity in gilts did not prevent them from having clinical signs due to PHE signs a few weeks later⁵, suggesting that PHE clinical signs were not a result from an acute primary infection. IgG-antibodies develop from 2 weeks after infection and peak around the end of the third week³. After an experimental challenge ($4 - 6 \times 10^9$) at 21 days post oral dosing 73% of the pigs were IFAT-positive and at 28 days 94%¹.

Given the fact that 82% of the serum samples in this study were IgG-positive at the time of necropsy, we conclude that the initial Li infection took place at least 2 weeks before the animals died and, therefore, that clinical signs of PHE were the result of pathological changes in the course of the infection. The factors that contribute to these pathological changes which result in the clinically acute hemorrhagic diarrhea, still have to be elucidated.

REFERENCES

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