No evidence of enteric viral involvement in the new neonatal porcine diarrhoea syndrome in Danish pigs - DTU Orbit (16/12/2018)

No evidence of enteric viral involvement in the new neonatal porcine diarrhoea syndrome in Danish pigs
The aim of this study was to investigate whether the syndrome New Neonatal Porcine Diarrhoea Syndrome (NNPDS) is associated with a viral aetiology. Four well-managed herds experiencing neonatal diarrhoea and suspected to be affected by NNPDS were included in a case-control set up. A total of 989 piglets were clinically examined on a daily basis. Samples from diarrhoeic and non-diarrhoeic piglets at the age of three to seven days were selected for extensive virological examination using specific real time polymerase chain reactions (qPCRs) and general virus detection methods. A total of 91.7% of the animals tested positive by reverse transcription qPCR (RT-qPCR) for porcine kobuvirus 1 (PKV-1) while 9% and 3% were found to be positive for rotavirus A and porcine teschovirus (PTV), respectively. The overall prevalence of porcine astrovirus (PAstV) was 75% with 69.8% of the PAstV positive pigs infected with PAstV type 3. No animals tested positive for rotavirus C, coronavirus (TGEV, PEDV and PRCV), sapovirus, enterovirus, parechovirus, saffoldvirus, cosavirus, klassevirus or porcine circovirus type 2 (PCV2). Microarray analyses performed on a total of 18 animals were all negative, as were eight animals examined by Transmission Electron Microscopy (TEM). Using Next Generation de novo sequencing (de novo NGS) on pools of samples from case animals within all herds, PKV-1 was detected in four herds and rotavirus A, rotavirus C and PTV were detected in one herd each. Our detailed analyses of piglets from NNPDS-affected herds demonstrated that viruses did not pose a significant contribution to NNPDS. However, further investigations are needed to investigate if a systemic virus infection plays a role in the pathogenesis of NNPDS.

General information
State: Published
Organisations: National Veterinary Institute, Virology, Section for Bacteriology, Pathology and Parasitology, Bacteriology & Parasitology, Section for Virology, Diagnostic & Development, Danish Agriculture and Food Council, Swedish University of Agricultural Sciences, Statens Serum Institut, University of Copenhagen
Number of pages: 11
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: B M C Veterinary Research
Volume: 13
Issue number: 1
Article number: 315
ISSN (Print): 1746-6148
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.16 SJR 0.934 SNIP 1.108
Web of Science (2017): Impact factor 1.958
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.83 SJR 0.87 SNIP 1.011
Web of Science (2016): Impact factor 1.75
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.86 SJR 0.981 SNIP 1.009
Web of Science (2015): Impact factor 1.643
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.81 SJR 0.943 SNIP 1.018
Web of Science (2014): Impact factor 1.777
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.85 SJR 0.861 SNIP 0.853
Web of Science (2013): Impact factor 1.743
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes