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Kobuvirus and Hepatitis-E virus infections in piglets: Epidemiology and possible zoonosis

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Material and Methods: The study was conducted in intensive porcine production units of northern Spain. A total of 132 samples were collected at random from piglets at different farms in the region. Animals were grouped into two groups suckling and weaning groups, 0-4 and >4-8 weeks, respectively. Body temperature was recorded and faecal sample consistency was scored as diarrheic or normal. Kobuvirus and Hepatitis-E were investigated by reverse transcription-polymerase chain reaction (RT-PCR). RT-nested PCR was used of HEV RNA detection, where as a real-time RT-PCR was carried out using TaqMan probes for porcine Kobuvirus (EU787450).

Results: Kobuvirus and Hepatitis-E virus were detected with an overall prevalence of 48.7% and 24.2%, respectively. Kobuvirus infections with mild increase in body temperature ($39+0.7^{\circ}\text{C}$) were associated only in piglets aged <5 weeks with odds ratios (ORs A statistically significant increase in body temperature in nursing piglets shedding Kobuvirus, indicates an active host response to natural infection occurring in lactating period.) equal to 2.6. HEV shedding in faecal samples was homogenously distributed in both ages, showing no significant association with age or faecal consistency (OR=0.87 and 0.99, respectively). A selection of HEV positive stools were further analyzed by partial sequencing for HEV capsid protein gene. A high nucleotide identity (91%) between human and swine sequences in genotype 3 were observed. Further studies involving farm personnel and more genomic sequencing are being planned.

Conclusions: a) The potential transmission of HEV to persons working in piglets intensive production units is to be considered seriously, and preventive measures are to be adopted.

b) A statistically significant increase in body temperature in nursing piglets shedding Kobuvirus, indicates an active host response to natural infection occurring in lactating period.