Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

O7

ROLE OF CYTOKINES AS MEDIATORS OF THE LOCAL IMMUNE RESPONSE IN LUNG AND TONSIL OF PIGS INOCULATED WITH A EUROPEAN PRRSV FIELD ISOLATE

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Introduction: Porcine reproductive and respiratory syndrome (PRRS) is a significant economic burden. An erratic immune response to infection is characteristic of this syndrome. The aim of this research was to study the correlation between the expression of PRRSV antigen and the expression of cytokines in lung and tonsil of PRRSV-inoculated pigs.

Materials and Methods: Twenty-eight, 5-week-old pigs were randomly distributed into groups of four, inoculated with PRRSV field isolate 2982 and killed at 3, 7, 10, 14, 17, 21 and 24 days post-inoculation (dpi). Four other pigs, used as controls, were inoculated with sterile medium and killed at the end of the study (24 dpi). Samples from the lung and tonsil were fixed in 10% neutral buffered formaldehyde and in Bouin's solution.

Results: Viral antigen and all cytokines studied were expressed mainly by macrophages in lung and tonsil. All antigens displayed a higher and earlier expression in the tonsils than in the lungs, always following a similar trend in both tissues. The expression of IL-10 was correlated in both organs with the expression of PRRSV antigen.

Conclusion: PRRSV may modulate the immune response by inducing the expression of IL-10, which might lead to lower levels of other cytokines important for viral clearance.

O8

NOVEL GROUP A ROTAVIRUS G8 P[1] AS PRIMARY CAUSE OF AN OVINE DIARRHOEIC SYNDROME OUTBREAK IN WEANED LAMBS

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Introduction: Ovine group A rotavirus (OVgAR) is a primary cause of ovine diarrhoeic syndrome (ODS), mainly in neonates. An outbreak of ODS was reported in 40–60-day-old Rasa Aragonesa lambs, with a morbidity of 95% (192/203) and a mortality of 17% (35/203).

Materials and Methods: Twenty-five lambs were grouped according to severity of clinical presentation (healthy [$n = 5$], mild [$n = 10$], moderate [$n = 4$] and severe [$n = 6$]). Rectal faeces were analyzed by culture (aerobic and anaerobic bacteria, and fungi), zinc sulphate flotation test and one-step OVgAR immunochromatography. Severely affected lambs were subjected to necropsy examination ($n = 30$) and OVgAR immunohistochemistry was performed. Faeces from these lambs were used for serotyping and genotyping of isolated *Escherichia coli* strains (LT, STa, STb, K88, P987, K99, F41, VT1, VT2, eae and F17), and for genotyping of detected OVRgA strains (VP4, VP6 and VP7 genes).

Results: A new OVgAR G8 [P1] strain was sequenced. Among all potential studied causes of ODS, only OVgAR detection (14/30) was significantly correlated with clinicopathological findings (ANOVA, $P = 0.026$). Concurrently detected pathogens, not statistically associated with ODS, were *Campylobacter* spp. ($n = 7$), *C. parvum* ($n = 4$), *Coccidium* spp. ($n = 4$), *C. perfringens* ($n = 3$), *P. mirabilis* ($n = 3$) and *E. coli* eae+ (5 positive/ 8 cultured strains).

Conclusion: A new OVgAR strain was apparently the major cause of ODS in these lambs and therefore should be considered within the ODS differential diagnosis.

O9

INFLUENCE OF CANINE DISTEMPER VIRUS INFECTION ON CORTACTIN EXPRESSION AND DISTRIBUTION IN CANINE HISTIOCYTIC SARCOMA CELLS

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Introduction: Cortactin is a cytoskeletal protein that is commonly overexpressed in cancer. Infection of canine histiocytic sarcoma cells (DH82 cells) with the Onderstepoort strain of canine distemper virus (CDV) leads to morphological and functional modifications suggestive of a less malignant biological behaviour. The aim of this study was to evaluate the potential underlying mechanism of this effect by investigating cortactin expression as a critical mediator of tumour cell migration and invasion.

Materials and Methods: For immunofluorescence and immunoelectron microscopy, non-infected and persistently CDV-infected DH82 cells were incubated with an anti-cortactin (H-191) antibody. The cellular morphology, including cytoplasmic processes, and the cortactin distribution were analyzed.

Results: 100% of both cell types displayed cortactin expression. However, persistently CDV-infected DH82 cells showed only a diffuse expression of cortactin in the cytoplasm (82%) or an additional accentuation in the cell membrane (12%). In contrast, non-infected cells exhibited diffuse cytoplasmic labelling only (32%) or an increased expression in cell membrane and cytoplasmic projections (62%).

Conclusions: A CDV-mediated reduction in expression of cortactin in tumour cell processes may contribute to reduced cellular migration and may therefore be associated with a less malignant behaviour of canine histiocytic neoplasms.

O10

PYOGRANULOMATOUS PLEUROPNEUMONIA AND MEDIASTINITIS IN FERRETS ASSOCIATED WITH *CHRYSEOMONAS*-LIKE BACTERIA

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Introduction: This abstract reports a new infectious disease of ferrets.

Materials and Methods: In 2009, three ferrets (aged 1–2 years) from different sources, presented with an acute episode of dyspnoea, lethargy, hyperthermia, anaemia, hyperproteinaemia and leucocytosis with neutrophilia. Pleural exudate was obtained by thoracocentesis. Cytological examination revealed severe purulent inflammation with clusters of rod shaped to serpentine microorganisms (5–6 μm in length) with a clear halo. Medical treatment with antibiotics and oxygen supplementation was ineffective and the animals died.

Results: Two ferrets were subjected to necropsy examination and pyothorax, mediastinal lymph node enlargement and multiple 1–2 mm white nodules were observed in the lung parenchyma. Histopathological examination revealed multifocal necrotizing pyogranulomatous or suppurative bronchopneumonia, pleuritis and mediastinitis with intralesional, similar microorganisms. In-situ hybridization for *Pneumocystis* spp., staining by Ziehl-Neelsen, Gram and periodic acid–Schiff and immunohistochemistry for distemper virus, coronavirus and influenza antigen were negative in all cases. Culture of pleural exudate from one ferret yielded a pure growth of gram-negative bacteria identified phenotypically as *Chryseomonas luteola*. By electron microscopy these organisms appeared as 2–3 μm long with a thick electrolucent halo. Molecular identification is in progress.

Conclusions: These bacteria are the cause of a fatal respiratory disease of ferrets.