

Abstracts

Leptospirosis: current challenges of an old disease

By Paula RISTOW. (lecture p. 267)

Leptospirosis is an infectious disease which affects man and animals, and is considered as the most common zoonosis worldwide. Every year, it is responsible for serious epidemics in tropical and developing countries. The pathogen is Leptospira interrogans, an extremely mobile and helicoidal spirochete. The clinical presentation of leptospirosis varies due to the diversity within the genus Leptospira and its complex epidemiology. Several mammal species may develop leptospirosis, mainly in its chronic form, and thus act as reservoirs for the disease. Human leptospirosis, or Weil's disease, has a high mortality rate and is caused by Leptospira interrogans serogroup Icterohaemorrhagiae. The vaccination of man and animals has limited effects because vaccines are specific to the serovar and induce only a short-term immunity. The microagglutination test (MAT) used for the diagnosis of leptospirosis also has limitations, such as the inability to identify the early stage of the disease. However, progress is expected in diagnostic procedures, as the recently sequenced genome of Leptospira and the development of specific genetic tools mark the beginning of the post-genomic era in research on spirochetes. Our efforts are currently turned towards the understanding of leptospiral virulence mechanisms, as well as the development of more effective vaccines and diagnostic tests. The Spirochetes' Biology Unit at Institut Pasteur, Paris, has just identified the first leptospiral virulence factor, Loa22, a protein of the OmpA family exposed on the cell surface of the bacteria. Loa22 is a candidate for the development of a vaccine.

Key words: leptospirosis, epidemiology, virulence factor, genetics, OmpA protein, Loa22.

News on emerging and resurging zoonoses

By Jeanne BRUGERE-PICOUX and Angeli KODJO. (communication p. 279)

Emerging and resurging zoonoses, with their sometimes dramatic medical and/or economic consequences, are becoming an increasing problem due to the intensification of human and animal movements, environmental changes, and the risk of bioterrorism. Veterinary surgeons play a key role in our improving understanding of these diseases, as over 70% of human infectious diseases have an animal reservoir.

The origin of these zoonoses may be food, e.g. infections caused by Shiga toxin-producing Escherichia coli or Cryptosporidium parvum, and bovine spongiform encephalopathy (BSE). Others have emerged in immunocompromised patients. Some zoonoses are more frequent among people working in animal husbandry (leptospirosis, brucellosis, avian chlamydophilosis, porcine streptococcal infection, Nipah and Hendra virus infections, hantavirus infection). The emergence or extension of tick-borne viral and bacterial infections (with vectors such as ticks and mosquitoes) is remarkable: West Nile fever, Japanese encephalitis, tick-borne encephalitis, Rift valley fever, bartonellosis, ehrlichiosis...

It is important to identify the animal reservoir of these emerging zoonoses: production animals (avian influenza due to the highly pathogenic virus of subtype H5N1, hepatitis E...),

pets (methicillin-resistant Staphylococcus aureus, leishmaniasis...), exotic animals (salmonellosis, tularemia, hantaviriosis), or wild animals (especially bats and rodents). Finally, some animal diseases may potentially become zoonoses (Borna disease, paratuberculosis, encephalomyocarditis...).

A close collaboration between veterinary and human medicines is essential to update regularly the priorities of the control programmes for these zoonosis.

Key words: *emerging and resurging zoonoses, update, review.*

Current review of Q fever diagnosis in animals

By Philippe NICOLLET and Aurèle VALOGNES. (*communication p. 289*)

Q fever is a zoonosis caused by the intracellular bacterium Coxiella burnetii, transmitted to man by the inhalation of contaminated dust or aerosols. Domestic ungulates (goats, sheep, cattle) constitute the main reservoir for C. burnetii, although other mammals such as dogs, cats and wild¹ rabbits have been known to transmit the bacterium.

In ruminants, abortion is the most important clinical manifestation, hence the close monitoring of this disease by the departmental veterinary laboratories, alongside the surveillance of Brucella-induced abortions.

The epidemiological surveillance of Q fever, which includes the official involvement of local authorities through their departmental Laboratories, is based either on an indirect detection of C. burnetii, generally by ELISA, or increasingly on its direct identification using methods such as PRC.

The staff of the departmental Laboratories, as well as all personnel in the agricultural and veterinary sectors, must be fully aware of the necessity to implement precautionary measures to avoid human contamination during exposure to sometimes heavily contaminated specimens.

Key words: *Q fever, Coxiella burnetii, ruminants, abortions, departmental laboratory, occupational disease.*

Human Q fever

By Hervé TISSOT-DUPON. (*communication p. 297*)

Q fever is a ubiquitous zoonosis due to Coxiella burnetii, a strict intracellular bacterium. Transmission to man occurs mainly through the inhalation of infected aerosols, arising mostly from livestock deliveries. The main characteristic of Q fever is its clinical variability, acute forms being associated with primary infection (flu-like syndrome, pneumopathy, hepatitis). The clinical expression also varies with age and sex. Chronic Q fever (mainly associated with endocarditis) may develop in people at risk (patients with valvular disease or immunosuppression or pregnant women), hence the importance of serological screening for Q fever in people at risk, and of the detection of valvular anomalies in patients with acute Q fever.

Key words: *Q fever, Coxiella burnetii, clinical expression, epidemiology, treatment, human.*

Canine and feline glaucoma: update on medical treatment and role of prostaglandins

By Jean-Pierre JEGOU. (*communication p. 303*)

Since the 19th century and the availability of pilocarpine, different classes of glaucoma medication have appeared. In chronological order they are cholinergics, adrenergic agonists, hyperosmotics, carbonic anhydrase inhibitors, alpha2 adrenergic agonists and more recently prostaglandins. With their original mechanism of action involving uveoscleral drainage of the aqueous humor, prostaglandins have substantially improved canine primary glaucoma medical treatment.

Key-words: *glaucoma, dog, cat, prostaglandins.*

Diagnosis and treatment of canine dysrhythmia: utility of Holter monitoring

By Jean-François ROUSSELOT. (*communication p. 311*)

Holter monitoring in dogs is used to study the electrocardiographic pattern over 24 to 48 hours. Electrodes are positioned on the thorax and connected to a recording device. The pattern is memorised on an « audio » tape or on a digital recorder. The pattern is then analysed in a specialist centre (analog data) or by an ordinary computer (digital data). In dogs, automatic analyses of the cardiac rhythm produce numerous errors and require a careful reading of the whole pattern. The main interest of Holter monitoring is the diagnosis and follow-up of rhythm disorders and their characteristics, as conventional electrocardiography is often inadequate due to its short period of recording. However, this examination does have its limits: despite the long period of recording, it is not always possible to establish a correlation between clinical signs and pattern anomalies.

Key words: *Holter, rhythmology, rhythm disorders, dog, electrocardiogram.*

Serum protein electrophoresis in ferret diseases (Mustela putorius furo)

By Didier BOUSSARIE. (*communication p. 319*)

Following a basic reminder on electrophoresis, we present the physiological values of serum protein concentrations in ferrets, as well as the variations observed in reported clinical diseases and their interpretation. This test is mostly used for the diagnosis of Aleutian disease.

Key words: *ferret, biology, blood sample, electrophoresis, Aleutian disease.*

Rehydration of calves: presentation of an expert system

By Hervé NAVETAT, Claude RIZET, André MEYUS, Gilles FOUCRAS and François SCHELCHER. (*communication p. 325*)

In addition to dehydration, diarrheic enteritis in calves is generally associated with acid-base disturbances and fluid and electrolyte imbalances. The evaluation of these disorders, based on the measure of blood pH and Na^+ , K^+ , Cl^- , HCO_3^- concentrations, and on the calculation of the serum anion gap (difference between the concentrations of the major cation and the major anions) and of the base excess, helps optimise the treatment and further refine the prognosis.

Acidosis is the most frequent disorder, with or without an increased serum anion gap depending on the etiology of the diarrhoea. This problem is corrected by the administration of bicarbonate or carbonate solutions. Less common disorders include alkalosis and dyskalemia.

An expert system, providing a clinical and therapeutic protocol, was developed to evaluate acid-base and hydroelectric disorders associated with diarrheic enteritis in calves.

Key words: calf, diarrhoea, dehydration, acidosis, fluid therapy.