Vetpath is a specialist veterinary laboratory dedicated to providing our clients with the finest laboratory diagnostic service. A team of veterinary pathologists and medical scientists with extensive experience in veterinary diagnostic pathology forms the core of the Vetpath team.

VNews

VETPATH LABORATORY SERVICES

MAY 2015

Diagnostic challenges with FIP

Feline infectious peritonitis (FIP) remains a difficult disease to diagnose ante-mortem. This is due to factors relating to both Coronavirus (CoV) and the host response to infection.

Diagnosis of FIP relies on combined assessment of clinical signs, blood parameters and antibody testing. A combination of supporting clinical signs and laboratory data help to determine the likelihood of FIP.

Blood parameters
Common blood abnormalities include lymphopenia, a mild non-regenerative anaemia, hyperglobulinaemia, and elevated α1 acid glycoprotein (AGP; an acute phase protein). However, these changes can also occur with other inflammatory or neoplastic diseases, and are therefore not specific to FIP.

Effusion analysis
The presence of an effusion ("wet" FIP) facilitates the diagnosis of FIP as tests on effusions have a higher diagnostic value compared to blood tests. Effusions associated with FIP often have a high protein concentration (>35 g/L) and a relatively low cell count (<10.0 x 10^9/L). The Rivalta test (indicating high globulin content) is often positive and has a high negative predictive value. However, a positive Rivalta test can also occur with other inflammatory or neoplastic conditions (low specificity).

Serology
Determination of the CoV antibody titre in serum can assist in diagnosis of FIP. A very high titre (>1:1600) in a cat with appropriate clinical signs indicate a higher likelihood of FIP. However, a high percentage of CoV carriers are antibody positive, particularly those that live in a multi-cat household. Serology is useful for screening and monitoring in multi-cat households and catteries since antibody titres correlate with degree of viral shedding.

Direct virus detection
Immunohistology is still considered the gold standard test for definitive diagnosis of FIP. This can be achieved by direct biopsy of granulomatous lesions. Identification of CoV within effusion macrophages by direct CoV IFA is also very specific; however this test has a relatively low sensitivity (75%). PCR testing of blood, tissue, faeces or effusion fluid for CoV is a sensitive method of detecting infection. However, PCR cannot differentiate between samples from CoV infected cats and those with FIP.

Reference: Veterinary Pathology 2014, 51 (2): 505-526.

Breed-specific haematology

Veterinary laboratories routinely create species-specific reference ranges for a particular haematology analyzer.

These reference ranges are generally not breed-specific; however, reference ranges for particular breeds are sometimes developed and published. The most common breed specific reference ranges used are for Greyhounds and other sight hounds.

Some of the common breed-specific changes seen include higher haematocrit (HCT) and lower total WBC and platelet counts in Greyhounds, breed associated macrocytosis in Poodles, and macrothrombo-cytopenia in Cavalier King Charles Spaniels. There has been some anecdotal evidence in the literature Dachshunds also have elevated HCT compared to mixed breed dogs, and a recent study published in Veterinary Clinical Pathology confirms this suggestion.

CBC data from 61 healthy Dachshunds was compared to 60 healthy mixed breed dogs. Dachshunds had significantly higher PCV (52% vs 50%), HCT (52% vs 48%), and RBC counts (7.7 x 10^{12}/L vs 7.1 x 10^{12}/L) compared to mixed breed dogs. The increase in PCV and HCT was due to higher RBC and not due to a higher MCV. The total solids were similar between the two groups indicating that the Dachshunds had a normal hydration status. Minimal differences were seen in the leukogram data.

While the difference in PCV, HCT and RBC count between Dachshunds and mixed breed dogs is only mild, the findings in this study serve as a reminder that breed differences do occur.

Reference: Veterinary Clinical Pathology 2014, 43(4): 525-537.

Which titre is higher?

1:16 or 1:256

Interpretation of antibody titres can be confusing. Titres are determined using a series of dilutions. The reported titre corresponds to the last dilution in which antibody can be detected.

1:256 is a higher titre than 1:16. The sample with a titre of 1:256 still had antibody detectable at the higher dilution and therefore had more in the original undiluted sample.

Meet your laboratory manager!

Deanne Broughton has been part of the Vetpath team for over 20 years. She has had several roles including lab tech and lab scientist. In addition to her current role as lab manager, Deanne is also the national coordinator for the veterinary group within the company. This role sees her regularly travel to the three other labs in Qld, NSW and Victoria. When at home, Deanne enjoys spending time with her husband and two children, and is a sci-fi fan.

NATA

NATA Accredited
Laboratory Number 14776

Vetpath Laboratory Services
RECEPTION DIRECT +61 8 9259 3600
LOCAL COURIER PICK-UPS +61 8 9259 3666
AFTER HOURS MOBILE 0418 916 436
FACSIMILE +61 8 9259 3627
EMAIL enquiries@vetpath.com.au
WEBSITE www.vetpath.com.au

VETERINARY PATHOLOGISTS
Jenny Hill BVSc (Hons) Dip ACVP
John Jardine BVSc MMedVet (Path) Dip ACVP MRCVS
Jon Meyer BVSc DVSc Dip ACVP
Jason Stayt BSc BVSc Dip ACVP
Leanne Twomey BSc BVMS (Hons) PhD Dip ACVP