

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.

VN News

SEPTEMBER 2015

Faecal PCR for *Clostridium perfringens*

The faecal multiplex PCR panel is a highly sensitive method of identifying potential infectious gastrointestinal pathogens.

Clostridium perfringens is one of the GIT pathogens on the panel and is tested for by detection of the DNA sequence for the alpha toxin gene. However, Clostridial alpha toxin is of uncertain diagnostic significance. Not only is this gene found in all 5 major types of *C. perfringens*, alpha toxin is suspected to be of lower virulence compared to other Clostridial toxins such as enterotoxin.

Of the large number of faecal samples tested at Vetpath in the year since the PCR panel was introduced, *C. perfringens* alpha-

toxin gene was positive in 58% of dogs and 45% of cats with diarrhoea. The frequency of alpha toxin gene detection likely reflects the high prevalence of *C. perfringens* in healthy animals. A positive result does not indicate *C. perfringens* is the cause of the diarrhoea and should be interpreted in light of the clinical signs. Chronic diarrhea is less likely to be due to clostridial infection; however a positive result for the *C. perfringens* alpha toxin gene in a patient with acute, haemorrhagic diarrhea may be clinically significant.

Anti-Müllerian Hormones in horses

Anti-Müllerian hormone (AMH) is a hormone produced by the granulosa cells of the ovary and the Sertoli cells of the testicles.

A single measurement of AMH is a very effective method of differentiating between sexually intact and neutered patients. Vetpath has been offering AMH

measurement in dogs and cats, and this test is now available in horses.

AMH can be used to accurately differentiate between geldings and stallions. AMH can also be used to screen mares for granulosa cell tumours, with affected mares having AMH concentrations much higher than normal mares.

A 2ml blood sample collected into a plain red top tube is required for AMH measurement. AMH is present in plasma as a dimer; this dimer can dissociate during storage causing the concentration to increase. Transporting the sample on ice for analysis within 2 – 3 days of collection will help minimize this change.



Drug-associated blood cell reactions

Many drugs have been reported to cause adverse reactions affecting the haematopoietic system.

Awareness of these potential side effects can assist in targeted monitoring of CBCs in these patients.

Drug reactions are generally classified as Type A or B. Type A reactions are dose dependent responses that may be more severe in an individual patient. The most common examples of drugs causing Type A reactions affecting the haematopoietic system include chemotherapeutic agents, oxidative drugs and oestrogen. Chemotherapeutic agents can cause myelosuppression leading to neutropenia followed by thrombocytopenia and anaemia. Oxidants such as paracetamol damage erythrocytes causing premature removal from circulation and anaemia. Oestrogen is a known cause of myelosuppression and aplastic anaemia.

Type B reactions are unpredictable, idiosyncratic reactions that often relate to an individual's unique susceptibility to the drug. This be due to a genetic predisposition, or could reflect underlying disease leading to altered metabolism of the drug.

Drugs reported to cause Type B reactions affecting the bone marrow include carprofen, azathioprine, phenylbutazone, chloramphenicol, sulphonamides, cephalosporins, methimazole, griseofulvin and anti-parasitic drugs.

Serial monitoring of CBCs may be worthwhile in veterinary patients receiving these drugs with potential side effects, particularly chemotherapeutic drugs, phenylbutazone, methimazole in cats and azathioprine.

Reference: Weiss D. Drug-Associated Blood Cell Dyscrasias. Compendium. June 2012.



ACTH stim tests

ACTH stimulations tests are performed for a number of reasons in veterinary medicine including diagnosis of adrenal disease and monitoring of treatment for Cushing's disease. Reference ranges for cortisol are dependent on the clinical reason for the test and are therefore not provided. Please include the relevant clinical history when submitting an ACTH stimulation test to ensure a helpful interpretation is provided.

Flow cytometry

Vetpath is now offering flow cytometry to help determine the lineage of blood cell populations.

Flow cytometry involves staining live cells with labeled antibodies that bind to proteins expressed on the cell surface. Different cell types express different proteins which are analyzed by the flow cytometer. This helps to determine the cell types present. Various antigens are tested for including those for B lymphocytes, T lymphocytes, myeloid cells, monocytes, stem cells and granulocytes.

EDTA blood samples need to be analysed within 48 hours of collection. Samples should therefore be submitted early in the week (Monday or Tuesday) to ensure the cells remain well preserved during transport to the referral laboratory.



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