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

APRIL 2015

Single vs paired measurement of eACTH for diagnosis of PPID

Pituitary pars intermedia dysfunction (PPID) is an endocrine disease of aged horses that is commonly diagnosed by a single measurement of endogenous ACTH (eACTH) concentration.

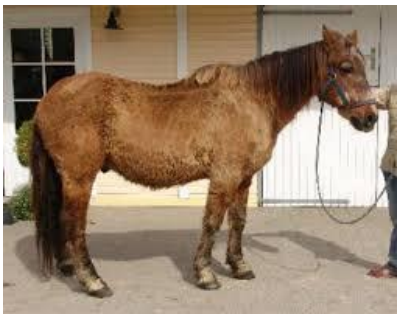
The overnight dexamethasome suppression test is also available, however the protocol requires almost 24 hours for completion. In addition, a single eACTH concentration is a cheaper test than three cortisol concentrations.

However, there is some debate about whether a single measurement of eACTH is a reliable method of diagnosing PPID. eACTH is released in pulses and therefore a single measurement may not accurately reflect the average secretion from the pituitary gland.

A recent study published in JVIM evaluated the diagnostic utility of a single measurement of eACTH compared to two measurements. The study found that a paired measurement of eACTH did not provide any diagnostic benefit over a single measurement of eACTH.

Using the mean of two eACTH measurements would have changed the clinical interpretation in 2.8% of the cases. However, these patients had eACTH concentrations that were close to the cutoff value for diagnosis (29 pg/ml), and other studies have reported that some diagnostic uncertainty exists for eACTH concentrations between 19 pg/ml and 40 pg/ml. These results should be interpreted in light of the other clinical features of the case (eg signalment and clinical signs).

EDTA anticoagulated blood is required for measurement of eACTH. A minimum of 1ml should be collected into a plastic EDTA tube and then immediately refrigerated. eACTH is stable for approximately 48 hours if the sample is kept cold. Do not centrifuge the sample unless it can be kept frozen during transit to the laboratory.



References:
Rendle DI et al. JVIM 29; 2015: 355-361.
Copas VEN and AE Durham. EVJ 44; 2012: 440-443.
McGowan TW et al. EVJ 45: 2013:74-79.

Biochemical evaluation of liver disease vs. liver dysfunction

Assessing a patient for hepatic disease is a common reason for running a biochemistry panel in veterinary species.

As pathologists, we assess biochemistry panels for patterns of abnormalities. Common abnormalities in patients with hepatic disease include elevations in serum enzymes including hepatocellular leakage enzymes (ALT, AST and GLDH) and cholestatic enzymes (ALP and GGT).

While elevated liver enzymes provide information about hepatocellular injury and cholestasis, these changes do not define how much functional liver is present. Assessing liver function requires tests that evaluate the capacity of the liver to perform a single or multiple functions.

Measurement of pre- and post-prandial bile acids is a common method of assessing portal blood clearance. Assessment of bile acid concentrations is thought to be the most sensitive liver function test, and can detect 40% - 50% liver function.

Other tests of hepatic function include measurement of urea, cholesterol, glucose and albumin concentrations (which assess hepatic synthesis), and bilirubin concentration (which tests uptake and excretion of bilirubin by the liver). These tests are much less sensitive methods of evaluating liver function; requiring 80% - 90% liver dysfunction before the parameters are outside of the reference intervals.

The protocol for paired serum bile acids is as follows:

1. Fast the patient for 8 – 12 hours.
2. Collect a baseline sample.
3. Feed a moderately fatty meal.
4. Collect another blood sample in 2 hours.

Formalin and cytology smears

Vetpath still regularly receives cytology slides that have been adversely affected by formalin fumes.

Exposure to formalin liquid or fumes prevents the cells on the smear from absorbing the stain. This results in an amorphous blue appearance to the smear with little cell morphology visible. The background blood also has a very distinctive green appearance.

Always submit cytology smears in a separate bag to histopathology samples in formalin. This will help preserve with diagnostic potential of your cytology smears.

Meet your pathologist!

Dr Jenny Hill graduated from the University of Pretoria in 1990 and spent 7 years in private practice. Jenny trained in clinical pathology at her alma mater, and has worked as a clinical pathologist in New Zealand and Australia. Jenny joined Vetpath in 2007 and become board certified in clinical pathology in that same year. She has a special interest in endocrinology and clinical chemistry. In her spare time, Jenny enjoys keeping fit and spending time with her family.

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