

Issue 69

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### Web Site

For an on-line version of this newsletter with additional links, and information go to:-

[www.nwllabs.co.uk](http://www.nwllabs.co.uk)

Where there is also an archive of back issues.

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## Equine Cushings Disease

***"Equine Cushings Disease is usually the result of adenoma of the pars intermedia of the pituitary gland."***

The subject of the diagnosis of Equine Cushing's Disease (ECD) was under discussion at the BEVA congress in Glasgow this year. ECD is usually the result of adenoma of the *pars intermedia* of the pituitary gland, which produces ACTH and other stimulating hormones including CLIP (corticotrophin-like intermediate lobe peptide), beta-endorphin and MSH (melanocyte stimulating hormone). These hormones are all produced in the *pars intermedia* from a common precursor, pro-opiomelanocortin (POMC) under the influence of two neurotransmitters from the hypothalamus, dopamine and serotonin. The *pars distalis* of the pituitary also contains POMC and produces some ACTH, beta-endorphins and alpha and beta lipoproteins. This is largely under the control of hypothalamic corticotrophin releasing hormone and arginine vasopressin.

In the case of an adenoma of the *pars intermedia* there is an excess of all the hormones produced there, including ACTH but particularly the CLIP, MSH and beta-endorphins, in variable proportions, resulting in varying signs. In this, horses differ from humans and dogs.

The average age for presentation for Cushing's disease in horses is 19 - 21 although it has been reported in horses as old as 40. Affected horses may have a weak and pendulous abdomen with loss of dorsal muscle mass. They may be prone to repeated infections and severe, chronic laminitis. Bulging of the supraorbital fat pads has also been noted and polyuria and

polydipsia together with the well-known hirsutism are also seen.

Regarding confirmatory testing, the result of the discussions involving the experience of clinicians from three continents was very interesting.

The urine cortisol creatinine ratio was not in favour. Already known to be only a general screening test it was felt that the information gained was so vague as to be of no benefit.

The resting cortisol and insulin assay (NWL code ECD) is another screening test which was felt to be misleading in the case of fat laminitic ponies, often suspected of having Cushing's syndrome, because adipose tissue leads to insulin resistance, leading to significant increases in plasma insulin for reasons other than the effect of PIA. It may be helpful in thin horses to distinguish Cushing's disease from other causes of poor doing.

The overnight dexamethasone suppression test (NWL code DSUE) was well regarded as a reliable test. A basal cortisol is taken at 5.00 pm followed by injection of 40ug/kg of dexamethasone. The second sample is taken at noon the following day. In normal horses the cortisol is depressed to below 30 nmol/l, higher levels are considered Positive.

If there is an equivocal result, the following alternatives were suggested.

For the combined dexamethasone suppression/TRH stimulation test, a basal blood sample is taken for cortisol estimation followed by injection of 40 ug/kg Dexamethasone i.v. A three-hour post dexamethasone blood sample for cortisol estimation is taken, followed immediately by slow intravenous injection of 1.1 mg TRH Protirelin (Roche). Two further samples are taken, at 40 minutes and at 19-21 hours later for cortisol estimation.

Normal and PIA horses show dexamethasone related cortisol depression (usually >50% at 3 hours. At forty minutes after

TRH, normal horses depress cortisol further, whereas PIA horses show a significant increase in cortisol. (>50% compared to 3-hour sample).

At 19-21 hours, normal horses will depress cortisol to <30 nmol/l. In PIA horses cortisol levels remain increased, usually above the value of the 3-hour sample.

Endogenous ACTH (NWL code ACTE), which does require special sample handling, collecting the sample into cooled EDTA tubes, centrifuging and rapidly freezing the separated plasma for transport to Cambridge Specialist Laboratory Services. (Special packs are available on request to NWL). Affected horses usually have a level in excess of 50 pmol/l whereas normal horses should be less than this level.

One other point to come out of the discussion was that some clinicians have been looking at the level of bile acids to try to assess the prognosis for liver function. Bile acid testing has no prognostic value in any species and should not be used to decide the future of any creature.

Dr Geraldine Hale BVM&S PhD  
Cert PM MRCVS

**Test Name:** Endogenous ACTH

**Test Code:** ACTE

**Sample :** EDTA (special handling required, details on request)

**Price :** £35.00

**Turnaround :** 2 - 7 days

## Cats and Pregnancy

A frequently asked question is: "If my client keeps cats is there a risk of toxoplasma when pregnant?" Cats Protection have produced a useful leaflet to answer the question.

This is available by calling 01403 221919 or from [www.cats.org.uk](http://www.cats.org.uk)

# Would your Lab Results Stand Up in Court?

**“Those who have to rely upon laboratory test results, often the basis of a life or death decision, should have some form of assurance as to their accuracy and validity.”**

The Veterinary Times 22<sup>nd</sup> July contained a letter from a group of Veterinary Surgeons (Adams et al) expressing concern at the apparent disparity between the results obtained from their practice analyser and 7 replicate samples sent to commercial veterinary laboratories. The ensuing responses raised a number of issues, one of which was the need for the accreditation of commercial laboratories. It was rightly felt by a number of correspondents that those who had to rely upon laboratory test results, often the basis of a life or death decisions, should have some form of assurance as to their accuracy and validity. What if you had to defend your results in a court of law, how would they stand up to scrutiny?

A disturbing aspect of this correspondence is, both the users and the providers of laboratory services who contributed to this debate, appear to be unaware that an accreditation standard for testing laboratories, including veterinary laboratories, already exists and has since March 2000. This is the internationally recognised standard for testing laboratories, EN ISO/IEC 17025 *General requirements for the competence of testing and calibration laboratories*. In the UK, this standard is administered, under the auspices of the DTI by the United Kingdom Accreditation Service (UKAS). The standard contains all of the requirements that testing and calibration laboratories have to meet if they wish to demonstrate that they operate a quality system and are technically competent and are able to generate valid results. EN ISO/IEC 17025 is the only standard to address all of these issues. Laboratories accredited to this standard are able to provide their clients with exactly the assurance demanded in the correspondence. This is the standard to which all veterinary

laboratories should aspire and which all users should demand.

For those seeking to obtaining results from an appropriately accredited source there is room for confusion. Laboratories offering testing in a clinical context often infer operating to a quality standard, but this inference could be misleading. For example certification to ISO 9001 and or ISO 9002; these standards specifically exclude the laboratory from claiming the competence to produce technically valid data and results. You may see reference to GLP (Good Laboratory Practice) compliance. Although this may sound like a general description of proper laboratory conduct it should be noted that GLP is a quality system concerned with the organisational process and the conditions under which non-clinical studies are planned, performed, recorded and archived. GLP does not concern itself with the technical validity of the studies themselves or the competence of the laboratory.

It is interesting to note that following the mix up at the Institute of Animal Health in Edinburgh between the ovine and bovine brain material used in a BSE research project, DEFRA is considering using only UKAS accredited laboratories in future. As far as results standing up in court is concerned; it is probably not a coincidence that all Forensic Science laboratories are UKAS accredited.

There have been efforts in the past to interest the veterinary profession and associated organisations of the need for establishing a standard for veterinary laboratories. A working party was set up some time ago to address the matter but has yet to deliver a credible standard. As is often the case when diverse interests are involved the original high ideals often become diluted by compromise. If veterinary practitioners require reassurance that their laboratory results meet a recognised standard the solution is simple, use an EN ISO/IEC 17025 UKAS accredited laboratory. A list of accredited laboratories can be found on the UKAS web site, [www.ukas.org](http://www.ukas.org).

It may be worth pointing out that whilst talk is cheap accreditation comes at a price. North Western Laboratories has been UKAS accredited since 1999 and our current schedule of accreditation includes over 90% of the tests offered by the laboratory. To maintain our

UKAS accreditation costs in the region of £25,000 per annum over and above our normal external quality assurance costs. Food for thought.

Alistair J Parker AIST

Based on reply to Veterinary Times 30<sup>th</sup> September 2002

## CLIN PATH CLUB

### Next Meeting

Thursday 14th November 2002  
The Clin Path Club is free and open to all vets and vet nurses

#### Venue

Swallow Hotel, Salmesbury, Preston. Directions: Junction 31 M6, follow A59 Blackburn, 1 mile.

#### Speaker

Dr A Coughlan BVSc Cert VA DSAS (Orth) PhD FRCVS *Working up the lame dog "Tricks and Traps"*  
Tea & coffee available, refreshments will be served after the meeting

To book your place, request further information or a location map call Joanne Kenyon on 01253 899215 or visit the web site.

## Diagnosis and Treatment of Canine Cushings Disease

A large turnout of Veterinary Surgeons and Nurses attended the North Western Clin Path Group meeting at the Swallow Hotel near Preston on 12th September. The speaker was Dr Ian Ramsey BVSc PhD Dip ECVIM MRCVS who gave an illustrated talk entitled *Recent advances in the diagnosis and treatment of Canine hyperadrenocorticism*. The talk addressed this complex condition in some detail. There was considerable interest in current therapy, particularly regarding the use and control of Vetoryl, the new treatment for Cushings Disease. A transcript of the talk is available on the NWL web site, [www.nwllabs.co.uk/cushings](http://www.nwllabs.co.uk/cushings) or from Client Services on 01253 899215.

The North Western Clin Path Group is organised by North Western Laboratories Ltd and this meeting was sponsored by Arnolds Veterinary Products Ltd.

## Tail End

### “Rabies in Lancashire Bat”

Bats in the UK may be carrying a strain of rabies that can affect humans, the government has warned.

The Department for the Environment, Food and Rural Affairs (DEFRA) said tests carried out on a bat from Lancashire revealed the presence of the rabies strain European Bat Lyssavirus 2 (EBL 2) that in rare cases can be harmful to humans.

The Daubenton's bat was sent to the Veterinary Laboratories Agency in Weybridge, Surrey, to be analysed after it bit a woman on the hand in Lancashire on September 11.

The woman, a bat conservationist, has been examined by infectious disease specialists but did not have any rabies symptoms.

"There is more risk of being killed by a bee sting or a disease from one of your pets than coming across bats with rabies," said Amy Coyte of the Bat Conservation Trust.

Between 1977 and 2000, tests on dead bats confirmed 630 EBL cases in Europe, mainly in Denmark, the Netherlands and Germany.