Total adiponectin: A new marker of obesity and laminitis risk

Following 6 months of work with Randox and the Royal Veterinary College we are pleased to be able to offer measurement of total adiponectin concentration. Results of the validation studies have been now been submitted for publication and we are pleased to offer the assay commercially.

What?
Adiponectin is produced from white adipose tissue and gives a marker of obesity. Obesity is a functional as much as a phenotypical state and adiponectin provides a marker of the function of adipose tissue. Adiponectin has anti-inflammatory and insulin sensitising effects in other species.

Adiponectin can be measured as total adiponecitn or high molecular weight (HMW) adiponectin; in human medicine there is debate over which form provides the most useful clinical information. We have chosen to measure total adiponectin as at present only total adiponectin has been shown to correlate with clinical episodes of laminitis in the horse and the assay appears to offer higher levels of accuracy and precision.

Why?
Our results using this assay demonstrate an association between total adiponectin concentration and both previous and subsequent laminitis. Total adiponectin can therefore be used i) to confirm suspicions that an animal is obese and management change is required and ii) to provide an indication that the risk of laminitis is increased. Although there is a statistically significant difference in adiponectin concentration between laminitics (past and future) and non-laminitics there is overlap so the predictive value for laminitis in an individual is poor. Very low levels (<10 mg/ml) provide evidence of a high risk of laminitis, high levels (>24 mg/ml) a very low risk. Adiponectin results between these levels should be considered on a spectrum of risk and should be interpreted in conjunction with other information such as phenotype and markers of insulin dysregulation.

How?
Total adiponectin is unaffected by stress or feeding so samples can be collected at any time. Serum is preferred and levels remain more stable if the sample is frozen or chilled. However, results from the validation study demonstrate that interpretation is unlikely to be affected if samples are unchilled or are collected into EDTA or heparin tubes provided they are analysed within 24 hours.

For further information or to discuss your requirements please contact Rainbow Equine Lab:

t 01653 919000  e office@rainbowequinelab.co.uk  www.rainbowequinehospital.co.uk/equine-lab/