23rd Annual American College of Veterinary Internal Medicine Forum, June 1-4, 2005

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In June 2005 I attended the 23rd Annual American College of Veterinary Internal Medicine Forum in Baltimore, USA. The forum has a comprehensive programme that covers all the specialties under the Internal Medicine Flag and deals with small animals, equine and farm animals. There is also an excellent veterinary technician's programme.

My first session was an interactive workshop on Equine Echocardiography (ultrasound of the heart). This was a great opportunity to learn from world authorities in equine cardiology including Virginia Reef, John Bonagura and Celia Marr. This session was run at a local horse facility to allow us to practice on live patients, with equipment provided by several ultrasound companies. We worked our way through ventricular septal defects (hole in the heart), aortic regurgitation (a condition of older horses that affects the valves of the aorta as blood leaves the heart) and atrial fibrillation (a rhythm disturbance of the heart) focusing on the best way to assess the significance of the lesions and the impact on each horse's cardiac function and exercise capabilities. Each cardiologist had different methods and it was great to be able to "practice what was preached." Cardiac disease is the 3rd biggest contributor to poor athletic performance in horses and is often under diagnosed. Echocardiography is the best tool available for investigating suspected heart disease. Attending this workshop has enabled me to bring new skills back to New Zealand, which boosts our ability to investigate all aspects of reduced performance in the equine athlete.

The ***Research Abstracts*** at the ACVIM forum provide a glimpse into the latest and greatest research in the field of equine medicine. I will summarise a few of the more interesting talks I went to during these sessions.

A COMPARISON OF THE CARDIOVASCULAR EFFECTS OF HYPERTONIC SALINE VERSUS PENTASTARCH IN HYPOVOLEMIC COLIC PATIENTS.
Hallowell, GD et al. Royal Veterinary College, UK.

This clinical trial investigated the use of an intravenous product, pentastarch for use in horses undergoing colic surgery.

The results of this study suggest that pentastarch has beneficial effects during anaesthesia and colic surgery in horses and that these effects can last up to three hours post-administration. Our ability to improve circulating blood volume during colic surgery is likely to improve the outcome for some colic patients.

A RETROSPECTIVE STUDY OF MYOPATHIES AND ASSOCIATED GAIT ABNORMALITIES IN 65 WARMBLOOD HORSES.
Hunt, LM et al. University of Minnesota, USA.

The purpose of this study was to evaluate the types of myopathies (often referred to as "Tying up") that occur in Warmblood (WB) horses and to determine their response to diet and exercise recommendations.

Sixty-five horses that were WB or WB crosses met the criteria for the study. A questionnaire was administered to owners to identify management factors, as well as compliance with recommendations and response to treatment. Fifty percent of owners responded.

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Significant improvement in original clinical signs was noted in 54% of horses. Within the remaining horses that did not show appreciable improvement, 67% only changed the diet and 8% made no changes. Signs of Shivers (see next abstract) did not resolve with the recommendations.

Results from this study suggest that in WB horses, myopathy frequently presents as muscle soreness without overt signs of tying-up and that improvement in clinical signs may be achieved by reducing the level of dietary starch and increasing fat in conjunction with daily exercise and turnout. Clinical signs of Shivers did not respond favourably to diet, turnout and/or exercise changes despite excellent owner compliance.

PREVALANCE OF POLYSACCHARIDE STORAGE MYOPATHY (PSSM) AND SHIVERS IN BELGIAN DRAFT HORSES.
Firshman AM et al. University of Minnesota, USA.

Shivers represents a common confounding disorder in Belgian Draft horses (BDHs) characterized by muscle tremors and hyperflexion of the hindlimbs, which may progress to weakness, muscle wasting and recumbency (NB Shivers affects a number of other Draft breeds). Some horses with Shivers have been diagnosed with PSSM (a type of myopathy). However, a high prevalence of PSSM has been noted in many draft breeds, which may confound the suggested causal relationship between Shivers and PSSM.

Thirty percent of BDHs were diagnosed with PSSM and 20% with Shivers. Seven percent of BDHs had both PSSM and Shivers, 24% had PSSM alone and 13% had Shivers alone. Statistical analysis indicated no significant association between PSSM and Shivers.

BDHs have a high prevalence of PSSM and Shivers within the general population. Both disorders may present with weakness, muscle wasting and abnormal gait, however, our results suggest that Shivers is a separate disorder from PSSM and the high incidence of PSSM in BDHs may have resulted in a mistaken assumption of a causal relationship.

The ***Invited Presentations*** covered a wide range of topics with some sessions aimed at advanced practitioners and others geared more towards the ACVIM diplomate/specialist. Most of the presentations covered recent advances and research in the field discussed and their goals were to have the attendees leave thinking “I have learned something new and I’m taking away something I can use”. I have summarised a few of these presentations below.

ENDOSCOPIC BRONCHIAL LAVAGE FOR THE TREATMENT OF FOCAL EQUINE PNEUMONIA.
McKenzie H. Leesburg, VA, USA

The treatment of bacterial pneumonia in horses primarily depends on the administration of broad spectrum antibiotics and anti-inflammatories, in combination with rest. The majority of cases respond well to this approach, but complications including pleuropneumonia and abscessation can occur. The prognosis for horses with complicated pneumonia is considered to be guarded, although those that survive and return to racing are reported to return to their previous level of performance.

Traditionally, bronchoscopy has been considered to be a purely diagnostic technique, having been utilised as a means of collecting samples from the airways. It can also help localise affected regions within the lungs. Additional indications of bronchoscopy in human medicine have included therapeutic interventions, such as removal of foreign bodies or respiratory secretions, or the placement of drugs or other therapeutic materials into the airways.

This presentation described the use of bronchoscopy in over 20 clinical cases with established focal lung infections that were poorly responsive to standard therapies. The tip of the endoscope was guided into affected airway(s) until wedged. Sterile saline solution was infused and then aspirated. In cases where the airways were occluded with plugs of mucous or pus, this was

dislodged with repeated lavage or by manipulation with endoscopic forceps. Following removal of exudates, therapeutic agents can be infused in order to achieve high concentrations at the site of infection. Clinically this technique has appeared to improve the response to treatment in the majority of cases, without appreciable side effects.

UPDATE ON ATRIAL FIBRILLATION IN HORSES

McGurrin MKJ. Guelph, Canada

This session addressed comparative considerations in the management of atrial fibrillation (AF). Atrial fibrillation is a relatively common heart rhythm disturbance seen in horses. The presentation addressed the options for therapeutic management, prognosis and clinical association, together with relevant current theories on causes and mechanisms influencing the expression of the disease.

The current treatment of choice in the horse is the administration, of the antiarrhythmic drug quinidine which acts to convert the heart back to normal electrical rhythm. This agent has a reported efficacy of 83-92%. However, older and larger horses and horses in which the arrhythmia has been present for greater than 4 months have decreased conversion rates. Return to adequate performance following successful treatment has been demonstrated. Quinidine has a narrow therapeutic range and variable bioavailability such that overt signs of toxicity are common and range from mild colic and nasal oedema, through tachypnoea, hypotension, severe tachycardia, collapse, laminitis, diarrhoea, and death.

Electrical cardioversion of AF involves the application of a direct current shock to the heart and is frequently used to treat human patients with AF. It has proved problematic given the large size of the horse. However, this presentation discussed a newly developed technique that uses transvenous electrical cardioversion, developed at the Ontario Veterinary College in Canada. Cardioversion catheters were placed through the right jugular vein and positioned at set locations over the heart. In the initial phase cardioversion was achieved in a horse with atrial fibrillation duration of 3.5 years. Subsequent to this a clinical trial was pursued. Modifications to catheter placement techniques and catheter design were made during the application of this procedure to 8 horses. Cardioversion was achieved in 7 of these animals. Further horses were then treated with the standardised technique. At the time of the submission of this manuscript, 38 client-owned horses had been treated. Cardioversion has been achieved in 37 horses. Recurrence of AF occurred in 4 horses, 3 of which were cardioverted again. Additionally, stable sinus rhythm has been established in one horse with AF duration of 7 years. AF has not recurred to date in 3 horses with AF duration greater than 1 year.

In conclusion, atrial fibrillation, a common performance-limiting arrhythmia in the horse, is not generally associated with evidence of underlying heart disease. The prognosis for response to treatment and return to previous level of athletic ability is very good, with a low and generally manageable rate of recurrence. The condition can be effectively managed with pharmacological agents or by electrical cardioversion.

EQUINE PITUITARY PARS INTERMEDIA DYSFUNCTION, A NEW LOOK AT EXISTING DIAGNOSTIC TESTING METHODS

McFarlane D & Donaldson M,Charlottetown, PEI, Canada

Equine Pituitary Pars Intermedia Dysfunction (PPID) is a condition affecting older horses and ponies. The diagnosis of PPID currently relies on a number of tests that have been the subject of recent evaluation. This presentation discussed the results of that evaluation.

The overnight dexamethasone suppression test (DST) has been considered the “gold standard” method of PPID diagnosis. However, a recent report suggests the reliability of the test has been over-estimated. Although it has not been critically assessed, the high sensitivity originally reported

may reflect a case selection bias towards horses with already advanced disease and fails to detect horses or ponies in the earlier stages of the disease.

Seasonal variation in dexamethasone suppression test results has been recently documented. Clinically healthy horses and ponies had a normal DST in January but when the same animals were tested in September, 40 percent of the horses and 21 percent of the ponies failed to suppress. Other diagnostic tests have also been shown to be affected by season (NB these are Northern Hemisphere findings and would represent July and March here in NZ).

In summary, diagnosis of **early** PPID is problematic. Season must be considered when interpreting results. It may be advisable to avoid testing in the autumn, as false positives are common. Diagnostic methods validated for use in early disease using histology as a gold standard must be viewed cautiously. All existing diagnostic test methods for PPID have major limitations. New and novel diagnostic methods are needed for identifying horses with early PPID.

The ACVIM forum contained a wealth of information across a wide range of equine medical conditions. Given the large volume of information presented, I have only been able to provide a small taste of what was on offer. This forum remains at the cutting edge of equine internal medicine and conveys much information relevant to our horses here in New Zealand. Many thanks to the **New Zealand Research Foundation** for their assistance with my travel costs.