Highlights of recent clinically relevant papers

Correlation of resting and exercising endoscopic findings for horses with dynamic laryngeal collapse and palatal dysfunction
This study was performed to correlate resting and exercising endoscopic grades of laryngeal function in horses undergoing high-speed treadmill endoscopy (HSTE) using the Havemeyer grading system and also to correlate dorsal displacement of the soft palate (DDSP) seen at rest with palatal function during exercise.

Records of 281 horses that underwent HSTE examination (1999–2009) were reviewed. Resting laryngeal function score and other abnormalities noted on resting endoscopy were recorded as were results of HSTE. Results of resting and exercising endoscopic findings were correlated.

There was significant correlation between grade of laryngeal function at rest (grades 1–4) and exercise (r = 0.53, P = 0.001) and between resting subgrades 3.1, 3.2 and 3.3 and exercising grades of laryngeal function (r = 0.43, P = 0.0017). DDSP was observed at rest significantly more often in horses that developed DDSP during HSTE than those without DDSP during HSTE (RR = 4.1, P = 0.001). The sensitivity and specificity of DDSP seen during resting endoscopy as a test for DDSP occurring during exercise were 25.5 and 95.1%, respectively (positive predictive value 0.57, negative predictive value 0.83).

The results of the current study support the use of the Havemeyer system for grading laryngeal function in the resting horse, and corroborate findings of previous studies correlating resting and exercising palatal abnormalities. Studies that use the presence of spontaneous DDSP during resting endoscopic examination as an inclusion criterion for investigating efficacy of treatments for DDSP are likely to have a low proportion of horses with false positive diagnoses.

Quantitative assessment of increased sensitivity of chronic laminitic horses to hoof tester evoked pain
This study was performed to evaluate quantitative sensory testing (QST) of the feet of laminitic horses using a power-assisted hoof tester.

The hypothesis was that Hoof Compression Thresholds (HCTs) can be measured reliably and are consistently lower in horses with chronic laminitis than in normal horses.

Hoof Compression Thresholds of chronic laminitic (n = 7) and normal horses (n = 7) were repeatedly measured using a hydraulically powered and feedback controlled hoof tester. Data from 2 tests, at 3 sites in both forefeet, during 3 sessions were collected and statistically analysed using linear mixed models.

The mean ± s.e. HCT for the laminitic horses was 29.6 ± 3.5 kg/cm² and for horses in the normal group was 59.8 ± 4.3 kg/cm². Residual variance was the largest of the error components and was greater (P < 0.001) for the normal horses; none of the other components significantly differed between the 2 groups. Averaging of HCTs from each foot could produce a test with intraclass correlation coefficients of 0.83 for the normal group and 0.87 for the laminitic group, with an estimated sensitivity of 0.94 and a specificity of 0.93. This test would permit detection with 80% power and 95% confidence of a reduction of over 40% in the difference in mean HCTs between laminitic and normal horses following effective treatment provided that the experimental groups are of 9 or more horses.

It was concluded that HCTs can be safely and reliably measured experimentally using this hoof tester. The level of variability found indicates that, under these conditions, treatments may need to produce at least a 40% improvement to be detected. Simplification of the hoof tester, training of the horse and repeated testing may permit the method to be used clinically to detect changes in the HCTs of individual laminitic horses but these potential improvements will require further investigation. Measurement of HCTs can provide an additional means for assessing the effectiveness of treatments for alleviation of chronic equine laminitis.

Contemporary use of acepromazine in the anaesthetic management of male horses and ponies: A retrospective study and opinion poll
Current use of acepromazine in the anaesthetic management of male horses and ponies and associated risks are largely unknown. The objective of this study was to explore anaesthetic acepromazine use and related adverse effects in the male horse.

From the medical records of 8533 anaesthetised horses and ponies, male animals treated perianaesthetically with acepromazine were reviewed. Demographic data, time and dose of acepromazine administration, co-administered drugs, quality of induction and recovery from anaesthesia, arterial blood pressures and occurrence of penile dysfunction were recorded. Practising ACVA and ECVAA diplomates were polled on the use of acepromazine and its effects on blood pressure and penile dysfunction in the equine.

Of all animals, 12% females and 11% males (n = 575 including 42% stallions) received perianaesthetic...
acepromazine, predominantly for premedication. Anaesthetic induction was smooth in 566 animals. Lowest mean arterial pressures averaged 65 ± 9 mmHg. Recovery was good or very good in 70% of all animals and 74% stood after 1–2 attempts. In 14 horses (2.4%; 7 stallions, 7 geldings), penile prolapse occurred for 0.5–4 h and in one stallion (0.2%) for >12 but <18 h post recovery. Most surveyed anaesthesiologists use acepromazine in stallions (occasionally 63%, frequently 17%) but more frequently in geldings (occasionally 34%; frequently 59%) and mares (occasionally 38%; frequently 59%), primarily for premedication with other sedatives and analgesics. Persistent intraoperative hypotension was not frequently reported. Only 5% of surveyed anaesthesiologists recall penile prolapse post acepromazine administration lasting for >12 h and only one recalls 3 cases of irreversible penile prolapse in 20 years of anaesthesia practice.

It was concluded that the extremely low risk of permanent penile dysfunction (≥1 in 10,000 cases) does not justify more restricted use of acepromazine in the intact male vs. geldings and mares.

Association of owner-reported noise with findings during dynamic respiratory endoscopy in Thoroughbred racehorses


This study was performed to determine the association between owner-reported noise and findings during dynamic respiratory endoscopy (DRE) in a large case series. The hypothesis was that the sensitivity of owner-reported noise for dynamic upper respiratory tract obstructions in horses is low, and the specificity is high.

One hundred horses underwent DRE for the investigation of abnormal respiratory noise and/or poor performance. The association of abnormal noise with findings during DRE was evaluated.

Eighty-five horses underwent DRE for the investigation of abnormal respiratory noise. Of these, 82% were found to have one or more obstructive upper respiratory tract abnormalities during DRE. Forty-eight percent of horses reported to gurgle, rattle or make a rough noise were diagnosed with solitary palatal dysfunction. A further 24% with this history showed palatal dysfunction in combination with an additional abnormality. Twenty-seven percent of horses with a history of whistling or roaring showed some degree of recurrent laryngeal neuropathy. Seven percent of horses with a history of whistling or roaring had vocal cord collapse as a solitary condition, whereas 40% had vocal cord collapse and another abnormality. The sensitivity of abnormal respiratory noise for any obstruction of the upper portion of the respiratory tract was high (84%), while the specificity was low (25%). Characteristic owner reported noise patterns showed moderate to low sensitivity for specific conditions. Whistling and roaring showed the highest specificity (≥80%) for laryngeal dysfunction.

It was found that diagnosis of upper respiratory tract obstructions based solely on owner-reported noise and performance history may result in incomplete diagnoses. DRE should be performed in horses with abnormal respiratory noise to rule out complex conditions of the upper portion of the respiratory tract.

Intrauterine administration of plant oils inhibits luteolysis in the mare


The maternal recognition of pregnancy (MRP) signal in the mare has not been determined, although oestrogens have been proposed as a potential candidate.

The objectives of this study were to determine effects of intrauterine administration of oestrogen and various oils on cyclic luteolysis in the mare. The hypothesis was that intrauterine oestradiol or fatty acids may suppress luteolysis in the cycling mare when administered during late dioestrus.

A single 1 ml dose of slow-release oestradiol (10 mg/ml) in fractionated coconut oil was infused into the uterine lumen of cycling mares on Days 6, 8, 10, 12 or 14 post ovulation (n = 12 in each group). Four further groups, each of 12 mares, received an intrauterine infusion of either 1 ml of fractionated coconut oil, peanut oil, mineral oil or a slow-release preparation of oestradiol (10 mg/ml) in mineral oil on Day 10 post ovulation. Serial blood samples were assayed for progesterone concentrations to monitor luteal function.

Intrauterine administration of oestradiol in fractionated coconut oil showed peak efficacy at Day 10 when luteolysis was delayed in 11/12 (92%) mares. The ability of the treatment to delay luteolysis was not significantly different when administered on Days 8 (9/12; 75%), 12 (10/12; 83%) or 14 (6/12; 50%) of dioestrus, but declined significantly when given on Day 6 (3/12; 25%). Oestradiol was not needed to initiate luteolysis since fractionated coconut oil alone or peanut oil administered at Day 10 induced the same high rate of luteal persistence (11/12; 92% for both oils). In contrast, mineral oil did not prolong luteal lifespan, either when administered alone (2/12; 17%) or combined with oestradiol (3/12; 25%).

These results do not unequivocally rule out a possible involvement of embryonic oestrogens in MRP in the mare but suggest it is unlikely. The results demonstrate that plant oils can postpone luteolysis, suggesting they may modulate synthesis or release of prostaglandins from the mare’s endometrium.

Administration of fractionated coconut or peanut oil on Day 10 post ovulation provides an effective and practical method of prolonging luteal function (‘pseudopregnancy’) thereby suppressing unwanted oestrous behaviour. Further studies to elucidate the mechanism by which this is achieved may increase understanding of both luteostasis and MRP signal in the mare.