6th Congress of the European College of Equine Internal Medicine

EQUINE SPORTS MEDICINE

FEBRUARY 7-9, 2013
LE TOUQUET, FRANCE

Scientific Programme

Friday 8th of February - Morning Session

8.30  The horse as an athlete  
       K.W. Hinchcliff

9.00  Equine exercise immunology  
       T. Art

9.45  Understanding upper airway disorders  
       N. Ducharme

11.00 Strain variations might determine the effectiveness of multiple high doses of imidocarb dipropionate treatment in T. equi carrier horses  
       C.M. Butler

11.15 Equine herpesvirus type 5 in bronchoalveolar lavage fluid of horses with equine multinodular pulmonary fibrosis (EMPF) and with other chronic respiratory disorders  
       O. Kutasi

11.30 Inhalative gelatin nanoparticle-bound CpG-ODN Study in RAO-Affected Horses  
       J. Klier
11.45 Endoscopical evaluation of the external ear canal
G. Schusser

12.00 Lateral thoracotomy for management of recurrent or refractory thoracic abscesses associated with equine pleurpneumonia
M.K. Chaffin

12.15 Supraventricular premature beat associated QRS morphology varies with RR coupling interval: preliminary results
B. Broux

14.00 Cardiac function and dysfunction in elite athletes
A. La Gerche

14.45 Cardiac remodelling in Horses: Echocardiographic and clinical perspectives
L. Young

16.00 Tissue doppler based measurements of right ventricular function correlate with arterial hypoxemia in horses
A. Decloedt

16.15 Paroxysmal atrial fibrillation in exercising horses
S. Franklin

Saturday 9th of February

9.00 Assessing fitness and health. Exercise testing in humans
A. La Gerche

9.45 Assessing fitness and health. Exercise testing in horses
A. Couroucé-Malblanc and E. van Erck-Westergren

11.00 Comparison of the efficacy of omeprazole as a powder paste and as an enteric coated formulation in healing of gastric ulcers in horses - Preliminary results
K. Birkmann

11.15 Novel mechanisms underlying insulin resistance
A. Waller

11.30 Upregulation of 11 beta-hydroxysteroid deshydrogenase type 1 in adipose tissue of horses with equine metabolic syndrome
R. Morgan

11.45 The effect of soaking hay in the dietary management of equine metabolic syndrome
S. Mack

12.00 Factors involved in variation of ACTH measurement and response to thyrotropinreleasing hormone (TRH) stimulation test in healthy horses
E. Diez de Castro

12.15 Cellular mislocation and aggregation of PSSM1-associated mutant glycogen synthase in response to extracellular glucose
C. Maile
14.00  Overtraining in human athletes
        J.-C. Chatard

14.45  Overtraining in horses
        C. McGowan

16.00  Validation of a new version of the Equine Acute Abdominal Pain Scale (EAAPS)
        G. Sutton

16.15  Evaluation of a gastro-intestinal pill (Equivital system®) to measure the core temperature in exercising horses
        E. Verdegaal

16.30  Assessment of an oral direct factor Xa inhibitor and two subcutaneous low molecular weight heparin (LMWH) formulations in horses
        M. Rodriguez Pozo

16.45  A practical protocol for the clinical use of mytomycen-C in the treatment of sarcoids in horses
        S. McKane

17.00  Efficacy of bloodroot ointment for the treatment of equine sarcoids
        S. Wilford

17.15  Ultrasonographic assessment of the atlanto-occipital space in healthy foals and in foals with perinatalasphyxia syndrome
        C. MacKenzie

17.30  Neurological syndromes in horses grazing pastures rich in white clover (Trifolium repens)
        R. Conwell

POSTER SESSION

1  Abdominal abscesses in adult horses: 61 cases (1993-2008)
        M.K. Chaffin

2  Risk factors of incisional wound infections after laparotomies. Proposal of a clinical post-operative follow-up.
        A. Benamou-Smith

3  Dysphagia – A retrospective study of 285 equine cases (2001 – 2011)
        S. Berger

4  Evaluation of hematologic and ultrasonographic screening methogs for predicting subsequent onset of Rhodococcus equi pneumonia in foals
        M.K. Chaffin

5  Multicenter, retrospective study of vertebral osteomyelitis and diskopondylytis in horses
        M.C. Coleman

6  Heterobilharzia Americana as a cause of systemic granulomatous disease in horses
        M.K. Chaffin
7 Imaging findings in twelve horses with lymphoma: a retrospective study of cases

V. Busoni

8 Predictive value of laryngeal ultrasonography in comparison to resting endoscopy regarding laryngeal function during overground endoscopy in 59 performance horses

A. Barton

9 Classification of seizures by type and predictive factors in horses

V.A. Lacombe

10 Risk factors for atrial fibrillation and ventricular tachyarrhythmias in 2499 hospitalized equids between 1994 and 2011.

A.A. Leroux

11 Diagnostic performance of a point-of-care equine fibrinogen assay.

E. Maischberger

12 Correlation between cardiac troponin I and lactate levels in critically ill horses.

M. Martín-Cuervo

13 Development of a conditionally-immortalised equine skeletal muscle cell line.

N.J. Naylor

14 Interrater reliability of the modified Mayhew ataxia grading scale.

E. Olsen

15 Changes in mmp-2, mmp-9 and il-8 in BALF of RAO and IAD horses before and after therapy

A. Barton

16 Desmaizieres L.M., Marguet C., Birague M. Lyazrhi F. Efficacy of omeprazole paste in the prevention of gastric ulcers in high level endurance horses

Y. Tamzali

17 Use of combination of tazarotene cream and imiquimod 5% cream in the treatment of equine sarcoids: a 20 case retrospective study.

Y. Tamzali

18 The use of fractional excretion of electrolytes in urine to identify horses with renal disease

R. van den Boom

19 Training induced decrease of cytokines production by equine alveolar macrophages.

I. Waldschmidt

20 Prevalence and effect on future performances of upper respiratory tract diseases in Thoroughbred yearlings in Italy

S. Busechian
ABSTRACTS ORAL PRESENTATIONS

STRAIN VARIATIONS MIGHT DETERMINE THE EFFECTIVENESS OF MULTIPLE HIGH DOSES IMIDOCARB DIPROPIONATE TREATMENT IN T. EQUI CARRIER HORSES. C.M. Butler1, A.H. Werners2, O.B. de Haseth3, C. van Maanen1, 1St. George’s University, School of Veterinary Medicine, Large Animal Medicine and Surgery, True Blue Campus, St. George, Grenada, West-Indies, 2St. George’s University, School of Veterinary Medicine, Anatomy, Physiology and Pharmacology, True Blue Campus, St. George, Grenada, West-Indies, 3Veterinary Services, Parera, Curacao, Netherlands Antilles, the Netherlands, 4Animal Health Service (GD Deventer), PO Box 9, Deventer, the Netherlands

Aim: To clarify if T. equi strain variants influence the effectiveness of multiple high dose imidocarb treatment in carrier horses.

Materials & Methods: The study presented here concerns three T. equi carrier horses of which two were positive for the sp. Moritio strain on the PCR-RLB. Two horses (1 Teqii and 1 sp. Morito) were treated with Imizol® (4.7 mg/kg) intramuscularly once every three days for five times and one (pregnant) horse (sp. Moritio) served as untreated control. Full blood and serum were collected until 165 days after treatment and tested with a PCR-RLB, cELISA and IFAT respectively.

Results: The T. equi positive horse became PCR-RLB negative 3 days after the first dose of imidocarb and remained negative until day 165 after treatment. The sp. Morito infected horses remained PCR-RLB positive until day 165 after treatment but showed a decline in antibody titters 27 days after the first treatment in the IFAT and cELISA, becoming negative in both tests approximately 135 days after treatment. The PCR-RLB remained equally positive for this horse despite the decrease in antibody titters. The untreated control horse remained PCR-RLB, cELISA and IFAT positive throughout the testing period.

Conclusion: Serology alone might not detect imidocarb treated carrier horses infected with T. equi strain variants.

Practical significance: Not all naturally infected T. equi infected horses can be cleared using high dose imidocarb dipropionate treatment and PCR should be included as an additional diagnostic test to avoid import of carrier horses based on negative serology alone.

EQUINE HERPESVIRUS TYPE 5 IN BRONCHOALVEOLAR LAVAGE FLUID OF HORSES WITH EQUINE MULTINODULAR PULMONARY FIBROSIS (EMPF) AND WITH OTHER CHRONIC RESPIRATORY DISORDERS. O. Kutasi1, L. Moravszki1, S. Sardi1, Z. Bohak1, P. Mikó1, N. Bálog6, K. Nagy1, T. Bakonyi1, 1Szent István University Faculties of Veterinary Sciences, Clinic for Large Animals, Óbuda University, Budapest, Hungary, 2PraxisLab Kft, 3036 Budapest, Hungary

The aim of the study was to estimate the prevalence and the potential role of equine herpesvirus type 5 (EHV-5) in the bronchoalveolar lavage fluid (BALF) samples of horses with chronic respiratory signs.

Altogether 60 horses with chronic respiratory signs of minimum of 2 weeks duration were involved in the study. Horses were clinically examined, respiratory endoscopy, thoracic radiography, ultrasonography, tracheal culture and evaluation of BALF were performed. EHV-5 PCR assay was carried out on BALF samples of 15 horses in a commercial laboratory (IDEXX-VetMedLab Germany), 54 BALF samples were tested in the research laboratory of Szent István University, Faculty of Veterinary Science and samples of 9 horses were tested by both laboratories.

PCR testing by the two different laboratories gave homogeneous results. Altogether there were 7 horses (prevalence: 11.6%) with positive PCR results. Three of them were diagnosed with EMPF based on histologic results of lung biopsy specimens or post-mortem tissue samples. These three horses were genetically closely related warmbloods. Two other horses suffered of suspected EMPF based on thoracic radiography with nodular interstitial pattern, EHV-5 positivity and intranuclear inclusion bodies but pulmonary biopsy was not performed on any of them. One positive horse was diagnosed with inflammatory airway disease and one with systemic granulomatous disease. Presence of EHV-5 in BALF significantly (Fisher test, p < 0.001) correlated with the diagnosis of EMPF.

BALF testing for EHV-5 is an important examination when establishing the diagnosis of EMPF. Genetic predisposition might render the patient more susceptible to EMPF or viral infection.

INHALATIVE GELATIN NANOPARTICLE-BOUND CPG-DNA STUDY IN RAO-AFFECTED HORSE. J. Kiler1, B. Lehmann1, S. Fuchs2, A. Hirschmann1, C. Coester2, G. Winter1, H. Gehlen1, 1Ludwig Maximilians University, Department of Veterinary Medicine, Equine Clinic, Munich, Germany, 2Ludwig Maximilians University, Department of Pharmacy and Pharmaceutical Technology, Munich, Germany, 3Free University of Berlin, Department of Veterinary Medicine, Equine Clinic, Surgery and Radiology, Berlin, Germany

Aim: To study the effectiveness of multiple high dose imidocarb treatment in carrier horses.

Materials & Methods: Two mild to severe RAO-affected horses received inhalations every second day for a total of five times. Horses were examined with respect to clinical, endoscopic, cytological and blood-chemical parameters before and after inhalation regimen.

Practical significance: Inhalation of verum showed statistical significant decrease of pro-inflammatory IFN-γ and pro-allergic IL-4 as well as pathological parameters of tracheal secretion, nasal discharge, neutrophil percentage, breath type, expression of bifurcation, viscosity of tracheal mucus, breathing rate and increase of partial oxygen pressure of arterial blood gas. Administration of GNP-bound CpG-ODN formulation demonstrated a potent effect on allergic and inflammatory clinical parameters in RAO-affected horses. It provides a new, promising, and well-tolerated therapeutic approach based on conventional symptomatic therapy.
The objectives of this study were to describe case selection, pre-operative assessment, intra-operative methods, findings and complications, post-operative management and long-term outcome and return to athletic function of horses with refractory or recurrent thoracic abscesses (associated with pleuropneumonia) that were treated with thoracotomy.

The results of this study were that 27 cases in 26 horses met inclusion criteria. Pre-operative sonographic mapping revealed a compartmentalized abscess in all cases. Surgical approach included partial rib resection (24) and intercostal myectomy (3). Bronchial communications were identified in 17 cases, and dead-end tunnels were identified in 9. Pneumothorax developed intraoperatively in 3 cases, but was managed effectively. All post-operative complications were resolved effectively, and all horses were discharged alive. Two-year survival rate was 92%. 22 of 25 cases (88%) were discharged alive. Two-year survival rate was 92%. 22 of 25 cases (88%) were discharged alive.

Our conclusions are that thoracotomy is a valuable method of managing refractory thoracic abscesses. Proper case selection and pre-operative assessment is important for successful outcome. Complications are manageable with proper care. Long-term outcome is good with most horses returning to their previous occupation.
COMPARISON OF THE EFFICACY OF OMEPRAZOLE AS A POWDER PASTE AND AS AN ENTERIC COATED FORMULATION IN HEALING OF GASTRIC ULCERS IN HORSES - PRELIMINARY RESULTS. K. Birkmann, H. Junge, H. E. Maischberger, M. Wehrli Eser, C. C. Schwarzwald. Equine Department, Vetuisse Faculty, University of Zurich, Zurich, Switzerland

Equine gastric ulcer syndrome is associated with recurrent colic, weight loss, and poor performance. Gastrozol® and omeprazol powder paste formulation, is the standard treatment and is highly effective. Gastrozol®, an enteric coated omeprazole formulation, has recently become available. It is less expensive, but its use is poorly established. The aim of this study was to compare the efficacy of Gastrozol® and Gastrozol® at labeled doses (4 and 1 mg/kg bwt PO once daily) in healing of gastric ulcers in horses.

Thirty-five horses with an ulcer score ≥1 (PSS, Practitioner’s simplified score by gastroscopy) were randomly divided into two groups that received a treatment course of 2 weeks of Gastrozol® followed by 2 weeks of Gastrozol® (A) or vice versa (B). After 2 and 4 weeks, follow-up examinations were performed and scoring was repeated with the observer blinded to treatment. At 2- and 4-week follow-up, PSS had significantly decreased in both groups, independent of treatment course (2-way mixed model ANOVA with Holm-Sidak post-hoc test). The proportion of horses in which PSS had improved from baseline was not different between groups at 2 weeks (A: 14/18, B: 6/17; p = 0.338, Fisher’s exact test) but was different at 4 weeks (A: 12/17, B: 6/16; p = 0.023).

In conclusion, both omeprazol formulations appear to be effective in improving gastric ulcer scores in horses. Nonetheless, some differences between formulations may be present. Further studies including the use of more sophisticated scoring systems and different study designs will be required to establish the true efficacy of Gastrozol® compared to Gastrozol® in horses.

NOVEL MECHANISMS UNDERLYING INSULIN RESISTANCE. L. Huehner, A.P. Waller, M. George, K. Kohler, V.A. Lacombe. Center for Veterinary Health Sciences, Oklahoma State University, Stillwater, OK, United States

College of Pharmacy, The Ohio State University, Columbus, OH, United States.

Although insulin resistance (IR) has been increasingly recognized in horses, the underlying mechanisms are still not well understood. The purpose of this study was to determine the early pathologic changes underlying IR in horses by characterizing key inflammatory mediators and by identifying potential interactions with glucose homeostasis.

Biopsies of skeletal muscle (SM) and visceral (VIS) subcutaneous adipose tissue were collected from horses, which were classified as insulin-sensitive (IS) or IR based on the results of an insulin-modified frequently sampled intravenous glucose tolerance test. Protein expression of tumor necrosis factor alpha (TNFα), suppressor of cytokine signaling 3 (SOCS3) and Toll-like receptor 4 (TLR4) were quantified by Western blotting. To characterize the potential role of inflammation on altered glucose transport observed during IR, we correlated active cell surface glucose transporter 4 (GLUT4) content (measured by a biotinylated assay) with individual- and tissue-specific data related to inflammation.

We observed a significant increase in TNFα in VIS, but not in SM, tissue of IR vs. IS horses. IR was associated with a significantly increased expression of SOCS3 and TLR4 in SM and VIS tissue, without a change in SC depot. We further observed a significant positive correlation between TLR4 and SOCS3 content, and a significant negative correlation between SC depot content and GLUT4 trafficking.

Collectively, these data suggested that, similar to humans, IR induces an inflammatory state in muscle and visceral, but not subcutaneous, adipose depot. In addition, we identified a novel cross-talk between inflammation and impaired glucose transport underlying IR in horses.

UP-REGULATION OF 11 BETA-HYDROXYSTEROID DEHYDROGENASE TYPE 1 IN ADIPOSE TISSUE OF HORSES WITH EQUINE METABOLIC SYNDROME. R. Morgan, P. Hadoke, B. Walker, J. Keen. Queen’s Medical Research Institute, University of Edinburgh, 47 Little France Crescent, Edinburgh, EH16 4TJ, Royal (Dick) School of Veterinary Studies, University of Edinburgh, Easter Bush Campus, Midlothian, EH25 9RG

Equine Metabolic Syndrome (EMS) is characterised by obesity, insulin resistance and a predisposition to laminitis. The role of glucocorticoids in the pathogenesis of EMS is unclear though the syndrome has many similarities to Equine Cushings’s disease, crucially the predisposition to laminitis. In humans regulation of cortisol at the level of the tissue, and in particular adipose tissue, is altered in obesity resulting in increased cortisol concentrations in the adipose. 11β-hydroxysteroid dehydrogenase type 1 (11β-HSD1) acts as a ketoreductase enzyme converting inactive cortisone into active cortisol in tissues where it determines the availability of cortisol to the glucocorticoid receptor. This study aimed to investigate tissue cortisol regulation in horses with EMS. Adipose tissue (neck crest, peri-retrial and linear alba) and liver samples were collected from 12 horses/ponies with EMS and 12 healthy controls at post mortem. Diagnosis of EMS was based on a hyperglycaemia in the presence of a reduced hyperinsulinaemia, a history of recurrent laminitis and a body condition score of greater than 4/5 as well as a normal baseline ACTH. RNA was extracted for real time PCR to quantify the transcript levels of 11β-HSD1 and glucocorticoid receptor. Transcript levels of 11β-HSD1 were significantly increased in peri-retrial (p < 0.01) and linear alba (p = 0.007) adipose deposits in horses with EMS compared to healthy controls. There was no significant difference in transcript levels of 11β-HSD1 in neck crest fat or liver. There were no significant differences in transcript levels of glucocorticoid receptor in any of the tissues. These data show that there is up-regulation of adipose 11β-HSD1 in EMS and further investigation of the role of 11β-HSD1 in this disease is warranted. Tissue cortisol dysregulation may play a role in the development of endocrinopathic laminitis.

THE EFFECT OF SOAKING HAY IN THE DIETARY MANAGEMENT OF EQUINE METABOLIC SYNDROME (EMS). S.J. Mack, A.H. Dugdale, C. McG. Argo, C.M. McGowan. The Philip Leverhulme Equine Hospital, University of Liverpool, Chester High Road, Neston, Wirral, UK, CH64 7TE

The restricted provision of soaked hay is commonly recommended for the corrective management of EMS. This study evaluated the effect of soaking on hay nutrient composition under controlled and field conditions.

Samples were collected from a single grass hay batch (4 fresh and 6 post-soaking [16 h]) under controlled conditions and 7 different grass hay batches (fresh and post-soaking) used to feed 7 EMS horses being managed under field conditions. Field soak times were uncontrolled, but within the recommendation of 8–16 hours. All samples were dried and complete analysis performed by NIR.

There were no significant differences between controlled and field samples. Post-soaking samples showed significant reductions (P < 0.001) in water soluble carbohydrates (from 17.4 ± 4.3% to 8.5 ± 3.3%; mean difference 52.1%), simple sugars (from 7.0 ± 1.9% to 3.3 ± 1.5%; mean difference 52.9%), and non-structural carbohydrate (from 19.2 ± 4.0% to 12.1 ± 3.9%; mean difference 37.3%) and ash (from 5.9 ± 1.7% to 3.5 ± 1.2%; mean difference 40.6%) with no significant reduction in crude protein (9.2 ± 1% and 9.0 ± 2.1%). Body mass, body condition score and insulin sensitivity (estimated by the combined insulin glucose tolerance test) were significantly improved in EMS horses following 12 weeks restricted soaked-hay feeding management.

In conclusion soaking hay produced consistent reductions in carbohydrate concentrations in both field and controlled conditions and can be recommended as an aid to the management of EMS clinical cases. However due to the loss of ash, predominantly as losses of water soluble minerals, appropriate supplementation is advised.
FACTORS INVOLVED IN VARIATION OF ACTH MEASUREMENT AND RESPONSE TO THYROTROPIN-RELEASING HORMONE (TRH) STIMULATION TEST IN HEALTHY HORSES. E. Diez de Castro, B. Cortes, I. Ortiz, A. Fernández, M. Martin-Cuervo*, C. Pineda, B. Garita, E. Aguilera-Tejero. Veterinary Teaching Hospitals, Universities of Cordoba and Extremadura, Spain.

ACTH measurement and the response to TRH stimulation are useful tests for diagnosis of pituitary pars intermedia dysfunction (PPID). Seasonal influences on these tests are well known. However, to our knowledge, circadian and food-related effects on baseline and stimulated ACTH have not been studied in horses. Our objective was to evaluate the influence of time of the day and fasting on ACTH measurement and the results of TRH stimulation test in healthy horses.

Plasma ACTH concentration was measured before (Baseline) and at 10 and 30 minutes after synthetic TRH (1 mg) administration to 6 adult healthy horses. This test was repeated 4 times for each horse at a different time of the day: 08.00 h (AM) and 20.00 h (PM) with the horses fasted for 12 h (FAST) and 2 h after being fed (FOOD).

Results (mean ± SE) are shown in the Table below:

|             | Baseline ACTH (pg/ml) | ACTH 10 min post TRH (pg/ml) | ACTH 30 min post TRH (pg/ml) |
|-------------|----------------------|-----------------------------|-----------------------------|
| FAST AM     | 17.1 ± 1.8           | 122.7 ± 36.7                | 38.9 ± 17.2                 |
| FOOD AM     | 36.7 ± 7.0           | 149.6 ± 41.4                | 62.6 ± 11.6                 |
| FAST PM     | 21.3 ± 5.1           | 130.3 ± 36.7                | 40.5 ± 8.8                  |
| FOOD PM     | 59.5 ± 14.3          | 252.8 ± 55.9                | 91.2 ± 29.0                 |

*p < 0.05 vs FAST

No differences were found in ACTH measurements or TRH stimulation tests performed at different time of the day. However, both baseline and stimulated ACTH values were consistently higher in horses after feeding. Baseline ACTH was more influenced by food ingestion than values obtained after TRH administration. These data suggest that feeding status should be standardized for evaluation of ACTH in horses.

CELLULAR MISLOCALISATION AND AGGREGATION OF PSSM1-ASSOCIATED MUTANT GLYCOGEN SYNTHASE IN RESPONSE TO EXTRACELLULAR GLUCOSE, C.A. Male,1 L. Livesey,1 J. Schumacher,2 M. Fernandez-Fuente,2 R.J. Percy1,1 Comparative Neuromuscular Diseases Laboratory, Royal Veterinary College, Royal College Street, London NW1 0TU, United Kingdom, 2Auburn University College of Veterinary Medicine, Auburn, Alabama, USA

Type 1 polysaccharide storage myopathy (PSSM1) is associated with a missense, gain of function mutation (R309H) in the equine muscle glycogen synthase gene (GYS1). Since previous reports suggest that glycogen synthase (GS) translocates within muscle cells in response to different glucose concentrations, we hypothesised that the R309H mutation results in aberrant glucose-associated cellular GS enzyme translocation.

The cytosolic vs. nuclear localisation of tagged mutant or wild type eqGS was assessed in transiently-transfected C2C12 myoblasts incubated in either glucose-free or high glucose media for 4 and 24 hours. Immunocytochemistry and immunohistochemistry were performed in primary cell lines and cryosections from wild type and homozygous mutant Belgian draught horses, using antibodies detecting total eqGS and an epitope surrounding phosphorylation site 3a. Localisation and expression of the enzyme within the fibres and primary cell lines were examined.

Unlike cells containing the wild type enzyme, mutant eqGS was more frequently (44.6% vs. 27.5% vs 13.8% ± 13.5% (mean ± SD) aggregated in the cytoplasm of C2C12 cells incubated in high glucose media than when in glucose-free media (p < 0.01). Primary cell lines and cryosections from homoyzgote horses showed aggregates of the enzyme within the cytosol/libre.

Mutant GS has a greater tendency to aggregate within the cytoplasm (especially in high glucose concentrations) than wild type GS. This suggests that increased equine GS activity in myopathy-affected horses may be associated with abnormal cytosolic localization of GS particularly when plasma glucose is elevated.

VALIDATION OF A NEW VERSION OF THE EQUINE ACUTE ABDOMINAL PAIN SCALE (EAAPS). G.A. Sutton, L. Bass, Koret School of Veterinary Medicine, Hebrew University of Jerusalem, POB 12 Rehovot, Israel 76100

Assessment of pain is vital for colic treatment. The purpose of this study was to validate a new version of the behavior-based Equine Acute Abdominal Pain Scale (EAAPS). Forty films of horses with colic were presented by computer-generated random order to two randomly-assigned groups of equine veterinarians. One group (n = 8) scored the severity of pain demonstrated in the films by utilizing the numerical rating scale (NRS) and the other group (n = 7) with the new version of the EAAPS. Intra-rater reliabilities of the EAAPS and of the NRS were comparable based on Limits of Agreement. The inter-rater reliability of the EAAPS was significantly better than NRS. Intraclass correlation (ICC) = 0.6 [95% CI; 0.5-0.8] and EAAPS; ICC = 0.68 (95% CI; 0.54-0.80). Face validity was 71% (95% CI; 29-96) in support of the EAAPS. The two scales showed very good convergent validity (weighted kappa of 0.73 (95% CI; 0.58-0.88). The predictive validity of the EAAPS scale was similar to the NRS (AUC of EAAPS; 0.75 vs NRS; 0.78 for mortality; AUC of EAAPS 0.76 vs NRS 0.83 for treatment modality) and the ability to discriminate between extreme groups of either control horses versus cases or by extreme groups defined by NRS scores of 0-2 vs 3-5 was very good (AUC 0.99 and 0.955, respectively). In conclusion, the new version of EAAPS was highly reliable and adequately valid. In comparison to the earlier version of the EAAPS scale, the newer version had a significantly higher inter-rater reliability [EAAPS-1; 0.8 (95% CI; 0.71-0.87)].

EVALUATION OF A GASTRO-INTESTINAL PILL (EQUIVITAL SYSTEM™) TO MEASURE THE CORE BODY TEMPERATURE IN EXERCISING HORSES. E.J.M.M. Verdeggaal, L.E. Folwell, C.G.B. Caraguel, S.H. Franklin. School of Animal and Veterinary Science, The University of Adelaide, Roseworthy campus, 5371 SA, Australia

The purpose of the study was to evaluate a method for monitoring real-time core body temperature of horses during exercise. The accuracy and precision of a gastrointestinal pill (Equivital) was examined by comparison with a NATA certified thermometer using isothermic water baths at set temperatures (37, 39 and 41°C). A rectal probe was evaluated for comparison. The pill was administered to 8 Standardbred horses (fed ad-lib hay) by nasogastric tube and data recorded telemetrically by external receiver attached to a girth strap. Measurements were recorded for 3 days. Comparisons between gastrointestinal temperature (GT) and rectal temperature (RT) were made during 20 minutes of lugged exercise and for 2 hours before and 1 hour after exercise. The agreement between GT and RT was assessed using the agreement between GT and RT was assessed using the intraclass correlation (ICC) = 0.6 [95% CI; 0.5-0.8] and EAAPS; ICC = 0.84 (95% CI; 0.54-0.90). Face validity was 71% (95% CI; 29-96) in support of the EAAPS. The two scales showed very good convergent validity (weighted kappa of 0.73 (95% CI; 0.58-0.88). The predictive validity of the EAAPS scale was similar to the NRS (AUC of EAAPS; 0.75 vs NRS; 0.78 for mortality; AUC of EAAPS 0.76 vs NRS 0.83 for treatment modality) and the ability to discriminate between extreme groups of either control horses versus cases or by extreme groups defined by NRS scores of 0-2 vs 3-5 was very good (AUC 0.99 and 0.955, respectively). In conclusion, the new version of EAAPS was highly reliable and adequately valid. In comparison to the earlier version of the EAAPS scale, the newer version had a significantly higher inter-rater reliability [EAAPS-1; 0.8 (95% CI; 0.71-0.87)].
elimination time was 5.1 days (± 1.0 SEM). In conclusion, the gastrointestinal pill proved to be a valid and practical method for real-time monitoring of core body temperature in horses during exercise. This method opens opportunities to investigate thermo-regulation during and after exercise under challenging environmental conditions.

ASSESSMENT OF AN ORAL DIRECT FACTOR X, INHIBITOR AND TWO SUBCUTANEOUS LOW MOLECULAR WEIGHT HEPARIN (LMWH) FORMULATIONS IN HORSES. M.L. Rodriguez-Pozo, L. Armengou, J. Vila, E. Jose-Cunilleras, C. Cesarini. Servei de Medicina Interna Equina i Unitat Equina, Hospital Clinic Veterinari, Departament de Medicina i Cirurgia Animals, Universitat Autònoma de Barcelona, Barcelona, Spain.

Recent studies in human medicine have shown beneficial effects of oral antithrombotic drugs. No information about oral anticoagulants in horses is available. The objectives were to assess whether one oral direct factor Xa inhibitor reached prophylactic plasma antifactor-Xa activity in a population of healthy adult horses, and to assess whether 4 days administration of either oral or subcutaneous (SC) antithrombocytes caused hemostatic alterations in healthy horses.

Ten healthy adult horses were included. Each horse received each one of the following treatments, with a 2 weeks wash-out period between therapies: an oral direct factor Xa inhibitor human formulation in fasting conditions, SC dalteparin, and SC enoxaparin. All treatments were given once daily during 4 consecutive days. Blood samples were collected at the beginning of the therapy period and 3 hours after each administration. Plasma antifactor-Xa activity was measured using a colorimetric technique, together with hemostatic and hemolologic parameters: clotting times (PT and aPTT), CBC, PCV, hemoglobin concentration, erythrocyte agglutination and platelet count.

Both SC LMWHs reached the minimum prophylactic plasma antifactor-Xa activity after the first injection. Administration of the oral anticoagulant did not reach the minimum prophylactic antifactor-Xa activity at any time point. No hemostatic alterations and erythrocyte-related complications were observed.

This direct factor Xa inhibitor formulation has probably a low gastrointestinal absorption in horses and does not reach the prophylactic plasma antifactor-Xa activity in adult healthy horses at the recommended dose for humans. Administration of either enoxaparin or dalteparin during 4 days does not cause adverse effects in healthy horses.

A PRACTICAL PROTOCOL FOR THE CLINICAL USE OF MITOMYCIN-C IN THE TREATMENT OF SARCOIDS IN HORSES. S.A. McKane, R.P. Coomer. Cotts Equine Hospital, Narberth, Pembrokeshire UK, SA67 8EY

Sarcoids are the commonest equine skin tumor. There are many available therapies, however several have unwanted side effects such as the caustic nature of AW4-Ludes cream or the radiation safety implications of Iridium-192 brachytherapy. Mitomycin-C, like radiation, is a DNA cross-linking agent used in human oncology due to its potent antitumor properties. This study describes the efficacy of intralesional Mitomycin-C on various sarcoid types when used at 8 weekly dosing intervals.

A total of 39 sarcoids were treated on 24 horses and 2 donkeys. 9 sarcoids were pericocular in location (7 nodular and 2 fibroblastic). Of the other 30 sarcoids, 6 were fibroblastic and 44 were nodular. Each sarcoid was injected with a 0.04% solution of Mitomycin-C, at 0.5-1.0 ml/cm² of tumor. The sarcoids were monitored and injections repeated every 8 weeks until resolution was achieved.

All 9 periocular sarcoids resolved with an average of 1.9 (range 1-4) injections. Of the other 50 sarcoids, 48 (96%) resolved after an average of 2.4 (range 1-5) injections. The remaining 2 sarcoids were surgically removed at the owners request after 2 and 3 injections respectively. A frequent side effect was the development of white hair around the treatment site, similar to brachytherapy. Infrequently mild swelling or necrosis and discharge from nodules was observed.

Recurrence rates at 6 to 30 months were zero for periocular sarcoids and 3/48 (6%) for other types. Additional injections were effective in cases of recurrence. Results show intralesional Mitomycin-C as a practical treatment for both nodular and fibroblastic sarcoids.

EFFICACY OF BLOODROOT OINTMENT FOR THE TREATMENT OF EQUINE SARCOIDS. S. Wilford, E. Woodward, B. Dunkel. Royal Veterinary College, Hawkshead Lane, Potters Bar, North Mymms, AL97TL, London.

Bloodroot (Sanguinaria canadensis), a herbaceous extract with cytotoxic and immunomodulating effects, has anecdotally been used successfully for the treatment of equine sarcoids. The object of this study was to evaluate owner’s perceptions of the efficacy of bloodroot for treating sarcoids through a questionnaire-based survey. Sarcoids were grouped based on owner’s descriptions according to location and size. Also duration and frequency of application were recorded. Response to treatment was classed as complete resolution, partial resolution, no response and increase in size/number. In total 49 horses with 125 sarcoids, treated between July 1999 and January 2012 with Newmarket Bloodroot Ointment®, were included in the study. Small and medium size sarcoids were most common (0.2-2.0 cm: n = 67; 2.1-4.0 cm: n = 41; >4.0 cm: n = 7; unknown size: n = 10). Horses had been treated for 0-21 days (n = 21), 22-42 days (n = 9), >42 days (n = 3) and an unknown duration (n = 10); 82 sarcoids (65.6%) showed a complete, 29 (23.2%) a partial, 7 (5.6%) no response and 7 (5.6%) worsened. Size of sarcoids and response to treatment was significantly associated (p < 0.001) with 86.6% of sarcoids <2.0 cm resolving completely (n = 58). A significant association between previous treatments and response was also found (p < 0.05) but not between duration of treatment and response. Localised adverse effects were noted in 16 horses (32.7%) with hair loss and soreness being most common. Out of the 82 sarcoids that showed a complete response, nine sarcoids (11%) recurred. Results suggest that, based on owner’s perception, bloodroot could be an effective treatment for small sarcoids.

ULTRASONOGRAPHIC ASSESSMENT OF THE ATLANTO-OCCIPITAL SPACE IN HEALTHY FOALS AND IN FOALS WITH PERINATAL ASPHYXIA SYNDROME. C. Mackenzie, E.F. Haggett, C.M. Marr. Rossdales Equine Hospital, Newmarket, Suffolk, CB87NN

Ultrasonographic measurements at the Alanto-occipital (AO) space and intracranial pressure have been shown to correlate in neonatal foals. Our aims were to establish reference ranges in healthy foals of comparable age and breed to our case populations, assess repeatability of the various US measurements in healthy foals, and to compare US measurements at the AO space in healthy foals with those in foals with Perinatal Asphyxia Syndrome (PAS). Longitudinal section measurements of the dorsal sub-arachnoid space, diameter of spinal cord (SC) and ventral spinal artery (VSA), and transverse section measurements of height and width of SCd and spinal canal (SCn), dorsal subarachnoid space and cross sectional areas of the SCd and SCn were made in 43 healthy 1-4 day-old foals, repeated within 10 days in 11 of these and in 11 PAS cases.

Paired, two-tailed Student T tests were used to compare the duplicate measurements and coefficients of variation were calculated. Cases were compared with healthy foals using unpaired, two-tailed Student T tests. Significance level was set at P < 0.05.

There were no differences between the duplicate measurements and co-efficients of variation were <20% except for the VSA. The longitudinal SCd and the VSA were different in PAS cases than healthy foals. We concluded US of the AO space showed promise as a non-invasive tool to assess PAS in foals.
NEUROLOGICAL SYNDROMES IN HORSES GRAZING PASTURES RICH IN WHITE CLOVER (TRIFOLIUM REPENS). R.C. Conwell1, K. Smith1, B. Summers2, J. East3, E. Tomlinson4, G. Terry5, M. Rafferty6, A. Nelson7, R.J. Piercy8, 1EquiMed Referrals Ltd, 75 York Road, Tadcaster, North Yorkshire, UK., 2Department of Pathology and Infectious Disease, The Royal Veterinary College, North Mymms, Hatfield, UK., 3Newcombe and East Veterinary Surgeons, Warren House Farm, Barnacks Lane, Brownhills, West Midlands, UK., 4Beaufort Embryo Transfer, Down Farm, Westonbirt, Tetbury, Gloucestershire, UK., 5Herefordshire Equine Veterinary Care, New House Farm, Pencombe, Bromyard, Herefordshire, UK., 6Department of Veterinary Clinical Sciences, The Royal Veterinary College, North Mymms, Hatfield, UK.

We describe neurological disease outbreaks investigated in adult horses grazing separate pastures heavily contaminated by White Clover (Trifolium repens) at different locations within the UK. Outbreak 1 involved 5 mares: three severely affected horses displayed pelvic limb ataxia and urinary incontinence, 2 horses were blind and dysphagic and 1 had tongue paralysis. A selective post-mortem examination in one horse did not identify pathology that could explain the neurological clinical signs. Outbreak 2 involved 3 horses. Clinical signs included head tilt, facial paresis, dysphagia and mania; one horse was ataxic. Outbreak 3 involved 4 horses; one horse (subsequently euthanised) presented with urinary incontinence and ataxia and all horses had persistent central blindness. Outbreak 4 involved 2 horses with pelvic limb ataxia, urinary incontinence, weak perineal reflexes and reduced tail tone. Extensive investigations across each of the outbreaks included clinical, haematological, biochemical testing, toxicology and equine herpes virus serology but results were uninformative. A controlled grazing trial in 2 horses revealed that serum thiocyanate concentration was markedly higher in the same horses grazing affected pasture compared to when stabled (8.9 mg/dl & 10.5 mg/dl vs. 1 mg/dl & 0.5 mg/dl respectively); horses grazing on affected fields had higher serum thiocyanate concentrations than horses on unaffected fields. These novel neurological syndromes in horses may be related to a similar syndrome recently described in sheep grazing White Clover: results are supportive of chronic cyanide toxicity reminiscent of Cassava toxicity in humans and Sorghum ataxia-cystitis syndrome in horses.

POSTERS

ABDOMINAL ABSCESES IN ADULT HORSES: 61 CASES (1993-2008). C.E. Arnold, K.M. Chuffin. Department of Large Animal Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University, College Station, Texas 77843-4475

The objective of this study was to determine the clinical signs, diagnostic methods, treatment and outcome for a series of adult horses with abdominal abscesses. This was a retrospective case series involving sixty-one adult horses. The medical records of adult horses with abdominal abscesses treated at Texas A&M Veterinary Medical Teaching Hospital (1993-2008) were reviewed. Information was recorded regarding signalment, history, clinical signs, diagnosis, treatment and short- and long-term outcome. Subsequently, risk factors for survival were determined. Clinical signs included colic (67%), fever (46%), anorexia (51%), signs of depression (57%), tachycardia (46%) and weight loss (30%). Results from the CBC indicated leukocytosis (44.5%) with a neutrophilia (66.0%), hyperproteinemia (26.8%), and hyperfibrinogenaemia (67.9%). The sensitivity of the following diagnostic modalities was as follows: rectal palpation 26.6%, percutaneous ultrasound 38% and cytology of the abdominal fluid 40.0%. Abscesses were variable in size, location and number and were categorized as primary (62%) versus secondary (38%). The majority of abscesses grew multiple bacterial isolates (71%). Treatment modalities included medical therapy, surgical therapy and a combination of both. Forty-nine percent of horses underwent exploratory laparotomy for the purposes of obtaining or confirming a diagnosis and providing treatment and prognostic information. Only 15 horses (24.6%) survived to discharge with long-term follow-up (3-8 years) available for 12. Risk factors for survival included age and heart rate at admission.

RISK FACTORS OF INCISIONAL WOUND INFECTIONS AFTER LAPAROTOMIES. PROPOSAL OF A CLINICAL POST-OPERATIVE FOLLOW UP. A. Benamou-Smith, S. Prevoteau, E. Gudi. Pole Equin, VetagroSup Lyon, 1 avenue Bourgelat, 69280 Marcy L’Etiole, France, + 33 4 78 87 26 77 (phone), + 33 4 78 87 75 75 (fax)

The purpose of this study was to determine factors that are predictive of incisional wound infection following laparotomy, and to set up a hospital procedure aimed at better controlling and assessing these risks. A 4 year retrospective study of surgical colecty yielded 48 cases of incisional infections, wounds and seclusions: usual pre- and post-operative blood work panels, bacterial cultures and ultrasonographic examinations of the wounds were performed. Risk factors were assessed by studying correlations (univariate and multivariate regression models) between infections and pre-operative, intraoperative and post-operative factors (R statistical software was used) with p < 0.01. Prevalence and type of infections were compatible with previous studies. Based on an univariate analysis, risk factors significantly associated with incisional infections were identified: fibrinogen levels at admission, presence of immediate post-operative seclusions, post-operative fever, leucocytosis and peritonitis. Multivariate analysis identified that post-operative leucocytosis, post-op fever and post-op peritonitis increased the likelihood of infection by 10.4 times, 2.9 times and 9.5 times respectively. 50% of cultures submitted were positive and all the bacterial isolates were resistant to classic antimicrobials used peri- and post-operatively, with a few multi-resistant strains. Ultrasonographic examination appeared to be a very sensitive and early detection tool, allowing 12.5% of infections to be diagnosed prior to clinical detection, as well as providing a precise follow-up of the infection. Due to the retrospective nature of the study, some data (stent and abdominal bandages, local treatments, hydrotherapy...) were incomplete. Based on these results, a hospital surveillance protocol is proposed.

DYSPHAGIA – A RETROSPECTIVE STUDY OF 285 EQUINE CASES (2001 – 2011). J. Berger, Equine Clinic, Clinical Unit of Equine Internal Medicine, University of Veterinary Medicine, Vienna

Purpose: Dysphagia, here defined as difficulty in prehension, mastication, swallowing and oesophageal transport, is a common and encountered problem in equine practice. A retrospective study was conducted to gain information about causes and outcome.

Method: Case records of all horses referred to the Clinical Unit of Equine Internal Medicine in Vienna between 2001 and 2011 were reviewed. Dysphagic cases were assessed for prepharyngeal, pharyngeal, postpharyngeal and neurological causes. Dental disorders were excluded.

Results: 285 cases were identified. Prepharyngeal causes (40%; median 10 years) included glossitis, foreign bodies, temporalmandibular arthropathies, neoplasia, cranial nerve dysfunction and others. 85% were healed, 5% improved and 10% had to be euthanized. Among the patients with pharyngeal causes (61%; 21.4%; median 10 years) neoplasia and retropharyngeal swellings were the most common causes beneath others. 58% did not survive, 39% recovered and 3% were not treated. Postpharyngeal causes (78%; 27.4%; median 15 years) comprised of choke, oesophageal diverticula, cyst, rupture and stricture, oesophageitis, IMHO and cardia stenosis. 73% were healed, 5% not treated and 22% euthanized. Neurological causes (106; 37.2%; median 8 years) involved grass sickness, botulism, tetanus, meningoencephalitis, enteral and hepatic hyperammonemia, trauma, neoplasia and others. 74% died, 24% recovered and 2% remained untreated.

Conclusions: Horses with postpharyngeal problems were older and included disproportionally higher numbers of Friesians. Neurological causes implied the worst prognosis.
EVALUATION OF HEMATOLOGIC AND ULTRASONOGRAPHIC SCREENING METHODS FOR PREDICTING SUBSEQUENT ONSET OF RHODOCCUS EQUI PNEUMONIA IN FOALS. M.K. Chaffin1*, M.K. Chaffin2, J. Griffin1, W.V. M.K. Chaffin2. 1Texas A&M University, College of Veterinary Medicine & Biomedical Sciences, Department of Large Animal Clinical Sciences, 4475 TAMU, College Station, TX, USA, 77843-4475; 26666 Ranch, Guthrie, TX, USA

The objective of the study was to estimate the sensitivity and specificity of 3 hematologic (white blood cell [WBC], neutrophil [NEUT], and fibrinogen [FIB] concentrations) and 3 ultrasonographic (total maximal diameter [TMD], total cross-sectional area [TCSA] and total number [TNC] of consolidations) screening methods for predicting subsequent onset of clinically-apparent *R. equi* pneumonia.

The methods used were as follows: 270 foals were studied at an *R. equi*-endemic farm. Foals were screened every 2 weeks from 3 to 19 weeks of age. Farm personnel were blinded to screening results. Foals were not treated with antimicrobials unless they demonstrated clinical signs of pneumonia. Tracheobronchial aspirates were obtained from all pneumonic foals.

Cumulative sensitivities for WBC (using threshold [TH] ≥ 13,000 cells/ul), NEUT (using TH ≥ 10,000 cells/ul), FIB (using TH ≥ 200 mg/dl) were 59%, 50% and 59%, respectively. Respective cumulative specificities were 37%, 55%, and 33%, respectively. Cumulative sensitivities for TMD (using threshold [TH] ≥ 200 mm), TCSA (using TH ≥ 200 mm2) and TNC (using TH ≥ 2) were 89%, 83%, and 78%, respectively. Respective cumulative specificities were 62%, 64%, and 64%. 216 (80%) foals developed sonographically visible pulmonary consolidations, and of those, 46 (21%) foals progressed to clinically apparent *R. equi* pneumonia.

We conclude that hematology screening was not useful for screening. Ultrasonographic screening was reasonably sensitive, but had limited specificity for predicting onset of clinically-apparent *R. equi* pneumonia. We also conclude that subclinical pulmonary consolidation was prevalent; in over 75% of foals with sonographic consolidations, pulmonary lesions resolved without treatment.

MULTICENTER, RETROSPECTIVE STUDY OF VERTEBRAL OSSEOMYELITIS AND DISKOSPONDYLITIS IN HORSES. M.C. Coleman1*, M.K. Chaffin1, J. Griffin1, W.V. Corapi1, T.E. Norman1, N.M. Slovis2, A.L. Johnson3, K.G. Magdeusian4, C.C. Clark5, M. Syndergaard2. 1Texas A&M University, College of Veterinary Medicine & Biomedical Sciences, Department of Veterinary Pathobiology, 4467 TAMU, College Station, TX, USA, 77843; 26666 Ranch, Guthrie, TX, USA

There are several cases reports in the literature of vertebral osteomyelitis and/or diskospondylitis in horses, but there are no large studies evaluating the clinical features and outcome of this disease. The objective of this study was to describe the signalment, clinical signs, results of diagnostic imaging and necropsy examination, results of microbiologic testing, location of lesions, treatment, and outcome of horses affected with vertebral osteomyelitis and/or diskospondylitis.

Cases with radiographic and/or necropsy findings consistent with osteomyelitis were included. Records from 3 horses, from 5 referral centers were retrospectively evaluated. Horses ranged in age from 2 weeks–24 years. There were 22 males, 12 females, and a variety of breeds represented. The most common clinical signs included stiffness, fever, tachycardia, tachypnea, anorexia, and lethargy. Spinal ataxia was noted in less than half the cases. The most common clinical signs included stiffness, fever, tachycardia, tachypnea, anorexia, and lethargy. Spinal ataxia was noted in less than half the cases. Lesions in the cervical vertebral body were most common. Twenty horses survived to discharge. In conclusion, vertebral osteomyelitis and diskospondylitis are rare in foals. Clinical signs and clinical-pathologic features are variable. Prognosis is guarded for affected horses.

HETEROBILHARZIA AMERICANA AS A CAUSE OF SYSTEMIC GRANULOMATOUS DISEASE IN HORSES. W. Corapi1*, K. Snowden1, M.K. Chaffin1, T. Texas A&M University, College of Veterinary Medicine & Biomedical Sciences, Department of Veterinary Pathobiology, 4467 TAMU, College Station, TX, USA, 77843; 2Texas A&M University, College of Veterinary Medicine & Biomedical Sciences, Department of Large Animal Clinical Sciences, 4475 TAMU, College Station, TX, USA, 77843-4475

*Heterobilharzia americana* is a trematode (family Schistosomatidae) wildlife pathogen found in raccoons and other mammals in the southeastern United States. Infection occurs when larval cercaria released from fresh-water snails penetrate intact skin of the mammalian host. The adult worms localize in mesenteric veins and shed eggs that migrate through intestinal mucosa to be passed out in feces, or are carried hematogenously to the liver and other organs. The eggs in tissues result in multiple random micro- to macroscopic parasitic granulomas with varying degrees of inflammation, fibrosis and sometimes calcification. These parasites have been documented in horses using antemortem ultrasound or biopsy or at necropsy, and parasite identity has been confirmed using molecular methods. Attempts to identify eggs using fecal sedimentation methods have been uniformly unsuccessful. A “starry sky” ultrasound pattern has been described in at least 18 horses with liver lesions ascribed to the parasite. At least 13 additional cases have been identified histopathologically by biopsy or at necropsy, and 9 cases were confirmed as *H. americana* using PCR and sequencing. In most cases, the parasite was an incidental finding, but other causes of clinical disease or euthanasia were identified. However, congestive heart failure due to parasite granulomas in cardiac muscle was confirmed in two horses. This parasite is under-recognized as a pathogen in horses in this region, and improved diagnostic methods are needed for epidemiologic studies to clarify the range and prevalence of this trematode.

IMAGING FINDINGS IN TWELVE HORSES WITH LYMPHOMA: A RETROSPECTIVE STUDY OF CASES. L. Evrard1*, R. Fonseca1, G. Bolen1, S. Cerri2, L. Borde2, A. Gougnard2, V. Busson3, 1Imaging Section and, 2Equine Clinical Unit - Department of Clinical Sciences - Faculté de Médecine Vétérinaire - Université de Liège – Belgium Bvd de Colonster, 20 - Bât B41, 4000 Liège, Belgium

Horses with lymphoma are often referred for weight-loss or chronic/recurrent colic and often undergo diagnostic imaging examinations. The aim of this retrospective study is to describe imaging findings in a series of clinical cases with cytologically or histologically confirmed lymphoma.

Medical records were reviewed for horses with a final diagnosis of lymphoma which had undergone ultrasonographic (US) examination of the abdomen with or without additional radiographic and/or US examination of the thorax. Twelve horses responded to the selection criteria. All of them had received a transabdominal US examination of the abdomen (including a ventral thoracic window) and 4 had received a radiographic and/or US examination of the thorax. A transrectal US approach was used in 1 horse and an ultrasound of the deep cervical lymphnodes was realized in 3 horses.

Imaging abnormalities detected were abdominal in all horses and thoracic in 5 horses. The most common abdominal US abnormalities were abdominal lymphadenopathy (7 horses), peritoneal effusion (6 horses), hepatic (5 horses) and splenic (4 horses) abnormalities. Intrathoracic abnormalities included pleural effusion (3 horses), mediastinal masses (3 horses) and lung parenchymal abnormalities (3 horses). Lymphadenopathy of the cervical lymphnodes was detected in the 3 horses that had undergone US examination of that region.

Ultrasonography was an easily applicable imaging modality to rapidly explore several anatomical sites in horses with suspected lymphoma. The presence of cervical lymphadenopathy in all horses that had undergone ultrasound of that region suggests a potential interest of this anatomical site to obtain FNA samples for cytodiagnostic examination.
PREDICTIVE VALUE OF LARYNGEAL ULTRASONOGRAPHY IN COMPARISON TO RESTING ENDOSCOPY REGARDING LARYNGEAL FUNCTION DURING OVERGROUND ENDOSCOPY IN 59 PERFORMANCE HORSES. B. Riond1, C. Schwarzwald1, B. Karlheim2, A. Barton1, B. Ohnesorge1. 1Clinic for Horses, University of Veterinary Medicine Hannover, Bünteweg 9, 30559 Hannover, Germany, 2Equine Clinic, Free University of Berlin, Oertzenweg 19b, 10169 Berlin

Purpose of the study: To compare the predictive value of ultrasonography in comparison to resting endoscopy regarding laryngeal function during overground endoscopy.

Methods: 59 warmbloods were examined clinically, ultrasonographically, endoscopically at rest and during overground endoscopy. The ultrasonographic examination was performed using a standardized preset and a linear probe (L8-18i, General Electrics, Connecticut, USA). Production of bilateral transversal images of the lateral cricoarytenoid muscle (CAL) was feasible in all horses. Endoscopic laryngeal functions at rest and during overground endoscopy, as well as ultrasonographic findings were scored by three experienced, blinded observers. Additionally, grey-scale analysis of CAL muscle tissue was performed.

Results: Laryngeal ultrasonography proved to be a sensitive diagnostic technique for the diagnosis of recurrent laryngeal neuropathy (RLN) in warmbloods, in particular in young horses. A high correlation of ultrasonographic and endoscopic findings at rest with and without sedation was found (sensitivity up to 100% in horses ≤ 5 years). Sensitivity and specificity were 73% and 88% for transversal measurements compared to overground endoscopy (p = 0.0025). Results of grey-scale analysis exceeded subjective scoring with a sensitivity of 66% and specificity of 100%. Nevertheless, ultrasonography did not have a higher predictive value for laryngeal function during exercise compared to resting endoscopy.

Conclusions: Dynamic RLN cannot be surely predicted by resting endoscopy. Laryngeal ultrasonography can be recommended as an additional diagnostic tool, but cannot replace overground endoscopy. In cases of doubt during resting endoscopy of for decision about surgical treatment, endoscopy during exercise remains the gold standard.

CLASSIFICATION OF SEIZURES BY TYPE AND PREDICTIVE FACTORS IN HORSES. V.A. Lacomb, M. Mayes, T.H. Hou, S. Mosseri, S.M. Reed. Center for Veterinary Health Sciences, Oklahoma State University, Stillwater, OK, United States. Department of Veterinary Clinical Sciences, College of Pharmacy, The Ohio State University, Columbus, OH, The University of Michigan College of Pharmacy, Ann Arbor, MI, USA, United States.

Although many studies have been performed to classify seizures in humans and small animals, similar epidemiologic study is lacking in horses. The purpose of this study was to characterize seizures based on their type (generalized vs. partial) in horses presented for seizure disorders at OSU Veterinary Teaching Hospital in a retrospective case series over 22 years.

Seizures were classified in 104 horses based on ictal phenology and seizure type according to the definitions in human and small animal epileptology. History, clinical and neurological observations, diagnostic investigations and postmortem examinations, when available, were recorded for univariate and multivariate logistic regression analyses.

Seizures were categorized as primary generalized in 23% of horses, simple and complex partial without secondary generalization in 42% of cases, secondary generalized in 24% of cases and unclassified in 11% of cases. Seizure type was not associated with etiology (symptomatic vs. unknown cause). Significant univariate correlations were found between seizure type and: 1) gender; 2) frequency of seizures; and 3) presence of seizures during hospitalization. For a horse with recurrent seizures (i.e., epilepsy), the odds of having partial seizures was higher (P < 0.05) compared to a similar horse with generalized seizures, in the final logistic regression model.

The majority of the seizures described were partial seizures with or without secondary generalization. Seizure types in horses and their predictive factors were similar to those reported in other species. The establishment of a standardized classification in equine epileptology could assist clinicians to develop a common terminology and to successfully establish a diagnosis.

RISK FACTORS FOR ATRIAL FIBRILLATION AND VENTRICULAR TACHYARRHYTHMIAS IN 3499 HOSPITALIZED EQUIDS BETWEEN 1994 AND 2011. A.A. Lerous1, J. Detilleux1, C.F. Sanderson2, L. Borde1, R. Houben1, T. Art3, H. Amory1, 1Equine Teaching Hospital, Department of Companion Animals and Equids Clinical Sciences, 2Quantitative Genetics Section, Department of Animal Production Clinical Sciences, 3Equine Sports Medicine Centre, Department of Functional Sciences, Faculty of Veterinary Medicine, University of Liege, Boullevard de Colonster 20, B41, 4000 Liege, Belgium

Risk factors for atrial fibrillation (AF) and pathological ventricular tachyarrhythmias (VTA) have been suspected in equids, however little epidemiologic data exists. The aim of this study was to determine risk factors for AF and VTA in a large equine population. Case files of 3499 equids admitted to the internal medicine department of the Liege University Equine Teaching Hospital between 1994 and 2011 were reviewed. Amongst them, 495 horses with a suspicion of a cardiac abnormality underwent ECG and echocardiography. After calculation of prevalence of AF and VTA, we tested whether breed (chi-square test) or gender, age, body weight (BW) and presence of other cardiac diseases (logistic regressions) were risk factors (significance set at p < 0.05). In the studied population, prevalence of AF was high (2.3%), whereas prevalence of VTA was low (0.7%). Warmbloods and standardbreds were significantly overrepresented in AF cases. High BW was a risk factor for AF (OR=3.54; CI=1.67-7.49), whereas age was not. No effect of breed, age or BW was demonstrated for VTA. AF was observed significantly more frequently in horses presenting with moderate to severe mitral regurgitation (MR), tricuspid regurgitation, and pulmonary hypertension, and VTA was significantly more frequent in horses with MR. Several previously suspected but not statistically demonstrated risk factors of AF were confirmed in this study and horses presenting valvular disease could be at increased risk of developing AF and VTA.

DIAGNOSTIC PERFORMANCE OF A POINT-OF-CARE EQUINE FIBRINOGEN ASSAY. E. Maischerberger1, M. Sacks2, B. Ripnd3, C.C. Schwarzwald1, 1Equine Internal Medicine Section, 2Clinical Laboratory, Vetsuisse Faculty, University of Zurich, Winterthurerstrasse 260, 8057 Zurich, Switzerland.

Fibrinogen is an acute phase protein that is widely used as an inflammatory biomarker. The aim of this study was to establish the use of a point-of-care (POC) equine fibrinogen analyser (QuickVet®) and compare its results to two other commonly used methods.

Plasma fibrinogen concentrations ([Fib]) of 76 diseased and 15 clinically healthy horses were measured using the POC assay (Ellis-Stransky turbidimetry method), the heat precipitation method, and the Clauss method ( clotting time). Method agreement was assessed using Bland-Altman analyses. The measurements obtained by the POC fibrinogen analyser and by the heat precipitation method were generally higher than those obtained by the Clauss method ([Fib]POC/[Fib]Clauss mean bias 1.5, 95% limits of agreement (LOA) ±2.2; [Fib]HeatPrec/[Fib]Clauss mean bias 1.2, 95% LOA 0.1-2.3), and the degree of disagreement was positively related to [Fib] Agreement between the POC analyser and the heat precipitation method ([Fib]POC/[Fib]HeatPrec) was characterised by a mean bias of 0.9 g/l and 95% LOA of -2.9 to 4.7 g/l, the degree of disagreement was independent of [Fib]. The wide limits of agreement observed when the POC assay and the Clauss assay are compared to the heat precipitation method were probably related to methodological limitations of the latter method. However, the POC assay was in fair agreement with the Clauss method, which is considered to be a gold standard. In conclusion, the POC analyser can be used for measurement of plasma fibrinogen concentrations in emergency situations, but method reliability and specific reference intervals need to be established.
Elevated levels of cardiac troponin I (cTnI) have been reported in various populations of critical human patients not affected by coronary syndromes. Plasma lactate (Lact) concentration is a useful and commonly measured biomarker of hypoxia in critically ill horses. The recent emergence of in-house analyzers that can provide results of cTnI in a few minutes may encourage the routine use of cTnI in equine emergency medicine.

To evaluate cTnI and Lact in a population of horses with colic,
cTnI was measured by chemiluminescence with an in-house analyser (Radiometer AQT90 FLEX POC) in plasma samples obtained at admission from twenty one horses with signs of severe colic and endotoxemia (Critical) and from ten normal horses (Control). Lact was also measured in these samples by automatic biochemistry analyser (Saturno 100).

Both cTnI (Control: 0.46±0.21 μg/L, p<0.05) and Lact (Critical: 4.8±0.59 mmol/L, Control:1.25±0.13 mmol/L, p<0.05) were significantly elevated in horses with colic. No correlation was found between cTnI and Lact. The higher concentrations of cTnI were measured in horses with inflammatory disease (enteritis and colitis).

cTnI increases in colics due to inflammatory diseases but not due to strangulating lesions. The relationship between intestinal inflammation and increased cTnI should be further explored since it could be related to decreased myocardial perfusion secondary to endotoxemia. Possible clinical applications of these findings should be explored in the future.

Development of a clonal, conditionally-immortalised equine skeletal muscle cell line. R.J. Naylor, R.J. Piercy. Comparative Neuromuscular Diseases Laboratory, Royal Veterinary College, Royal College Street, London, UK.

Cell-culture models are valuable tools for investigating physiological and disease processes. However, in vitro studies using primary muscle cultures are problematic: they are usually heterogenous (containing mixtures of fibroblasts and myoblasts) and their derivation is time consuming and unreliable. Furthermore, myoblasts often senesce after a limited number of divisions.

Development of a clonal, conditionally-immortalised equine myoblast cell line would overcome these disadvantages and provide a valuable in vitro tool for the evaluation of muscle physiology and disease, reducing the need for live animal experimentation and repeated muscle biopsy. We hypothesised that transfecting primary equine skeletal muscle cultures with a plasmid (pNIT-TAg) expressing the temperature-sensitive SV40 T-Antigen driven by a Tet-off responsive promoter would enable generation of a clonally-derived, myogenic cell line that would be able to differentiate into myotubes under permissive conditions. A primary, equine skeletal muscle cell-culture was transfected with the pNIT-TAg plasmid via Nucleofection®. Cells with stably-integrated transgenes were selected by incubating at 33°C in 5% CO2/95% air G418 (400mg/ml). Transfected cells were clonally selected and stained for desmin, to identify myogenic lines that were subsequently differentiated by incubating with doxycycline (1ug/ml) at 37°C. Expression of SV40 Tag was determined by immunocytochemistry. Unlike un-transfected control cells, a myogenic, desmin-positive clone expressed the SV40TAg and could be differentiated into a pure population of multi-nucleated myotubes in permissive conditions. Nucleofection® of primary skeletal muscle cultures with the pNIT-TAg plasmid resulted in successful stable transfection of myogenic cells that expressed the immortalising transgene. This conditionally-immortal equine skeletal muscle cell line will provide a valuable model for future in vitro work.

INTERATTER RELIABILITY OF THE MODIFIED MAYHEW ATAXIA GRADING SCALE. E. Olsen 1, C. Aguirre Pascasio 1, L.A. Gracia Calvo 1, J. Perkins 2, E. Finding 3, W. Barker 4, P.H. Andersen 5, R.J. Piercy 6. 1Department of Large Animals Sciences, Faculty of Health and Medical sciences, University of Copenhagen, Tastrup, 2Institute of Veterinary Clinical Sciences, The Royal Veterinary College, Hawkshead Lane, North Mymms, Herts, AL9 7TY, Hatfield, United Kingdom., 3Department of Clinical Sciences, Swedish University of Agricultural Sciences, 7054, SE-750 07 Uppsala, Sweden.

Recognising and determining the severity of ataxia in horses is important for rider safety, in diagnosis and when determining response to treatments; furthermore, accurate and repeatable assessment is crucial for any clinical decision making, but is especially important when human safety and horse retirement or euthanasia are considerations. However, despite general acceptance of the modified Mayhew ataxia grading scale in horses, its reliability has never formally been tested. The aim of this study was to evaluate the inter-rater agreement of the modified Mayhew ataxia grading scale. The same group of four board-certified medicine and surgery clinicians and two residents at the Royal Veterinary College’s Equine Referral Hospital graded horses on a scale from 0 to 5 where 0 is non-ataxic and 5 is recumbent. The average of 4.7 (SD 0.6) raters evaluated 21 horses of mixed breeds and sex. A two-way intraclass correlation coefficient (ICC) derived from ataxia scores in a mixed model with random effect of horse and rater was computed using R. The ICC across all ratings was 0.74. The ICC for grade 0 to 2 (n = 11) was 0.019 and 0.40 for grade 2 to 4 (n = 10). If grade 3 and 4 (n = 5) were evaluated separately, the ICC increased to 0.49. We conclude that the overall inter-rater agreement of the modified Mayhew ataxia grading scale, although good, is insufficient for the lower grades. Agreement for the lower grades is poor which emphasizes the need for more objective assessment tools or alternative grading scales.

CHANGES IN MMP-2, MMP-9 AND IL-8 IN BALF OF RAO AND IAD HORSES BEFORE AND AFTER THERAPY. T. Sherty1, A. Barton1, A. Bondzio2, R. Einspanier2, H. Gehlen2. 1Equine Clinic, Free University of Berlin, Oertzenweg 19b, 14163 Berlin, 2Institute of Veterinary Biochemistry, Free University of Berlin, Oertzenweg 19b, 14163 Berlin

Purpose of the study: To compare the results of clinical examination, bronchoalveolar lavage fluid (BALF) cytology, measurements of metalloproteinases (MMP)-2, MMP-9 and interleukin (IL)-8 between healthy individuals and horses affected by Inflammatory Airway Disease (IAD) and Recurrent Airway Obstruction (RAO) before and after therapy and environmental dust-reduction.

Methods: Clinical examinations including exercise tests, blood gas analysis (BGA), endoscopy, cytology of BALF, measurement of interpleural pressure and radiographs of the thorax were performed in 20 horses. Horses affected by RAO or IAD were treated with inhaled beclometasone (1500 μg), prednisolone (1.5 mg/kg PO) and stabled in a dust-reduced environment. Zymography of BALF supernatant was performed before and after therapy to detect MMP-2 and MMP-9, IL-8 was measured using an ELISA.

Results: 6 horses were affected by RAO in exacerbation (group A, severely affected), 6 were affected by IAD or RAO in remission (group B, moderately affected), 4 served as healthy controls (group C) and 4 horses suffered from other respiratory disease (group D). BALF after therapy was available from 5 horses. Whereas MMP-2 was detected in all horses, MMP-9 could only be detected in patients affected by respiratory disease, in particular RAO exacerbation. If treatment success was achieved, MMP-9 was no longer detectable. A correlation between quantitative IL-8 measurements and findings of clinical and cytological examinations could not be found.

Conclusions: MMP-9 can be used as a marker of acute respiratory disease, in particular RAO, and may be suitable as a marker of successful therapy and stabilising in a dust-free environment.
Efficacy of Omeprazole Paste in the Prevention of Gastric Ulcers in High Level Endurance Horses. Y. Tamzali, L.M. Desmaizieres, C. Marguet, M. Birague, F. Lyazrhi, Equine Internal Medicine, INP-Ecole Nationale Vétérinaire, 31076 Toulouse, France. ‘École nationale vétérinaire de Toulouse, Toulouse, France.

In the published first part of study, 30 elite endurance horses (Group 1) were submitted to two gastroscopic examinations, firstly during interseason and secondly after a ride of 90-160 km. A high EGUS prevalence was shown with 48% during interseason period compared to 93% during the competition season with a significant influence of training and performance level on the gastric score.

The aim of second part of study was to evaluate the preventative effect of omeprazole on gastric scores in elite endurance horses. Twenty six similar horses (Group 2) were submitted to two gastroscopic examinations, firstly 4 weeks before a ride of 90-160 km followed by 28 days administration of 1 mg/kg bwt SID omeprazole paste (Gastrogard) and secondly after the ride. The pre-competition gastric ulcer severity scores and prevalence did not differ significantly (p = 0.815) between Group 1 and Group 2 which then assumed that the two groups were homogenous. The Group 2 (omeprazole treated) post-ride gastric scores (0.88 ± 0.15) and prevalence (0.73 ± 0.08) did not differ significantly from the pre-ride gastric scores and prevalence of both Group 1 and Group 2 while the difference was highly significant (p = 0.005) when compared to non-treated horses post-ride gastric scores (0.88 ± 0.15 vs. 1.60 ± 1.15) and prevalence (0.73 ± 0.08 vs. 0.93 ± 0.05). There was no influence of age breed or gender on the gastric scores.

Omeprazole paste, 1 mg/kg bwt per os once daily for 28 days did efficiently prevent EGUS gastric scores worsening before endurance rides.

Use of Combination of Tazarotene Cream and Imiquimod 5% Cream in the Treatment of Equine Sarcoids: A 20 Case Retrospective Study. Y. Tamzali, M. Boudot, INP-Ecole Vétérinaire de Toulouse, Université de Toulouse, France.

Topical tazarotene cream has been tested successfully in the treatment of equine sarcoids as a valuable alternative to radiotherapy, chemotherapy, or electrochemotherapy which biosafety constraints restrict their use to qualified equine structures.

The aim of study was to confirm if a prior treatment with tazarotene which is used for its keratolytic activity on verrucous lesions such as sarcoids would improve the results compared to previous studies. Twenty cases totalizing 83 sarcoids (T0 to T3 according to Owen’s classification) met the criteria for inclusion in the study including full treatment compliance, complete medical records and a minimum of 18 months follow-up. Tazarotene 0.1% cream was applied daily for two weeks prior to imiquimod 5% cream which was applied every other day until complete tumours resolution.

The complete response rate was 63% at 12 weeks, 87% at 16 weeks and up to 100% at 21 weeks. There was no influence of tumour size on treatment duration (p = 0.153). Alopecia persisted in 35% of lesions but was significantly correlated (p = 0.0001) with keratinization. Hair regrowth and leucotrichia were observed in respectively 53% and 12% of treated tumours. The major side effects were inflammation and pain at the treatment site. It was controlled with NSAIDs administration but was also the cause of some treatments lack of compliance.

This study provides additional evidence of the effectiveness of imiquimod on superficial sarcoids and suggests that the combination of tazarotene and imiquimod topical treatments may improve the results compared to previous studies.

The use of Fractional Excretion of Electrolytes in Urine to Identify Horses with Renal Disease. R Van den Boom, Department of Equine Sciences, Faculty of Veterinary Medicine, Utrecht University, NL.

Horses with renal disease tend to be presented late in the course of disease progression, often when they are suffering end-stage kidney disease and clinical symptoms are often not very specific. The fractional excretion (FE) of electrolytes in urine can be used to assess renal function and reference values have been established for horses, although little has been published on their clinical application. In this study the fractional excretion of sodium, potassium, chloride and calcium in the urine of horses with histologically proven renal disease (n = 4) was compared with values obtained from horses presented for disorders not affecting the kidneys (control group, n = 4). The mean urinary electrolyte FE values were within the reference range for the horses in the control group and above reference values for the renal patients, for all electrolytes. The mean FE values for all electrolytes were higher in the horses with renal disease than in the control group, although the difference was smallest in the horse with the shortest duration of clinical signs, and the difference reached statistical significance for potassium, chloride (P < 0.05) and calcium (P < 0.01). These results show that urine FE of electrolytes can help establish a diagnosis of renal disease in the horse. The horses included in the present study had (fairly) chronic signs and it would be interesting to determine FE values in horses with more acute symptoms, as well as to assess the effect of (fluid) therapy and time on electrolyte FE values.

Training-Induced Decrease of Cytokines Production by Equine Alveolar Macrophages. Waldschmidt, F. Audigé, F. Bureau, Paul, F. Lekeux, MC. Dupuis-Truic, CIRALE-National Veterinary School of Alfort, Goustranville, France, Equine Sports Medicine, University of Liège, Liège, Belgium, Laboratory of Cellular and Molecular Physiology, GIGA, University of Liège, Liège, Belgium, Hippolia Foundation.

A higher sensitivity to respiratory diseases is frequently observed in horses after competition, suggesting an impairment of innate immunity induced by strenuous exercise. Alveolar macrophages (AMs) are, via toll-like receptors (TLRs), major actors of pulmonary innate immunity. They also represent the link between innate and adaptive immunity. The aim of this study was to evaluate cytokines production by AMs stimulated with TLR ligands at rest and post-exercise, in untrained and trained horses.

Eight standardbred horses were trained during four months. Bronchoalveolar lavages (BALs) were performed on horses at rest and 24 hours after a treadmill exercise up to fatigue, before and after the training period. AMs were isolated from BALs and stimulated by different TLR ligands to mimic bacterial and viral exposure. Equine ELISA kits were used to quantify their response through IFNβ and TNFα production. A global linear mixed model was used for statistical analyses. Results show a significant decrease of TNFα (p = 0.0002) and IFNβ (p = 0.0002) production by AMs of resting trained horses compared to untrained horses. No significant modification of TNFα (p = 0.5220) or IFNβ (p = 0.8489) production could be observed after a strenuous exercise. After training, TLR3 stimulation was significant altered, as assessed by a lower release of IFNβ (p = 0.0009) and TNFα (p = 0.0030). TNFα release was significantly lower following TLR2 stimulation (p = 0.0005) but unchanged after TLR4 stimulation (p = 0.7555).

This study showed that training leads to a decrease of cytokines production by equine AMs after specific stimulations, which could partly explain the increased susceptibility of athletic horses to respiratory diseases.

Prevalence and Effect on Future Performances of Upper Respiratory Tract Diseases in Thoroughbred Yearlings in Italy. F. Zappulla, S. Bussacca, S. Orvieto, M.M. Sartor, F. Audigé, C. Pieramati, M.C. Marchesi, F. Racea. Sport Horse Research Centre – Faculty of Veterinary Medicine – University of Perugia, Perugia, Italy, Private practitioner, Perugia, Italy, Private practitioner, Roma, Italy.

Resting endoscopies were performed one month before National Sales on 192 Thoroughbred Yearlings (104 males and 88 females) to evaluate upper respiratory tract diseases. The aim of the study was to find statistical correlations between disease, genetics, number of races per year, length of the career, earnings and age of debut. The horses were bred in different breeding...
farms in Italy, but some farms were tested repeatedly during the study. We evaluated the prevalence of the different grades of Pharyngeal Lymphoid Hyperplasia (PLH: grade 1, 1.04%; grade 2, 9.38%; grade 3, 38.35%; grade 4, 30.73%) and left Recurrent Laryngeal Neuropathy (RLN: grade 1, 8.58%; grade 2, 30.73; grade 3, 7.29%; grade 4, 3.13%; grade 5, 0%). We assessed the presence of Dorsal Displacement of Soft Palate (DDSP, 22.92%) and Inflammation of Guttural Pouches (2.60%). From a statistical point of view, these diseases do not decrease the probability of the horse to make its debut and do not influence the career results. Year of birth and breeding farm have significant effects on the grade of RLN (P < 0.05) and of PLH (P < 0.001), but no difference was found between the genders. Using two generations of ascendants, we estimated a heritability of 0.67 ± 0.33 for PLH and 0.50 ± 0.32 for RLN. Based on these results, it is not possible to give a definitive diagnosis and to express a prognosis about the future performances before the start of the training.