EQUINE

Z. Makra, G. Bodó: Usage of different keratoplasties for the surgical treatment of the cornea in horses. Literature review


RUMINANTS

Á. Spitzner, T. Németh, I. Egerszegi, O. Balogh, L. Kern, Gy. Gábor: Occurrence of twin pregnancy and calving and its effect on reproduction in ruminants. Literature review

SMALL ANIMALS

B. Tánczos, O. Liptai, B. Szántó, O. Papp, I. Kucsera, É. Fok, R. Farkas: A novel case of imported canine leishmaniosis in Hungary

Á. Szabára, P. Gálfi, Cs. Jakab: Immunohistochemical examinations of canine myocardium. 2. Cell adhesion markers

WILD ANIMALS

L. Molnár, A. Beregi, M. Gyurkovszky, R. Farkas, L., M. Heltai: Coccidiosis in wild boars shot in the south region of Mátra in Hungary
EVENTS

Derzsy’s day (Gy. Nagy)

ACADEMIC REPORTS

Veterinary research in 2012, in the light of academic reports. Part 4

BOOK REVIEW

L. Merényi: Report from Angola (L. Visnyei)

ALMA MATER

About the 11th practical semester

Z. Makra – G. Bodó: USAGE OF DIFFERENT KERATOPLATIES FOR THE SURGICAL TREATMENT OF THE CORNEA IN HORSES. LITERATURE REVIEW

Corneal transplantation is a viable and successful surgical technique in the horse. Full thickness penetrating keratoplasty (PK) may be performed for melting ulcers, iris prolapse, descemetocele, and full thickness stromal abscesses. Deep lamellar endothelial keratoplasty (DLEK) and posterior lamellar keratoplasty (PLK) are split thickness penetrating keratoplasties utilized for deep stromal abscesses with clear overlying anterior stroma. The majority of equine keratopathies affect just individual layers of the cornea at the beginning of the disease. In those cases rather targeted lamellar keratoplasty than full thickness penetrating keratoplasty is the treatment of choice. Selective lamellar replacement of only the diseased corneal layer(s) while retaining unaffected normal corneal layers represents a new paradigm shift in the field of corneal transplantation in the horse. Frozen donor
grafts are most suitable for this purpose. The graft site vascularises and some degree of opacity is unavoidable, however this treatment option provides good visual outcome (>80%), and shorter reconvalescence when compared to medical treatment alone.

**RESPIRATORY RESPONSES TO EXERCISE – VENOUS BLOOD GAS ANALYSIS**

Respiratory system output cannot be improved with any training; the respiratory system of the horse is the major limiting factor of athletic performance. Although ventilation increases during exercise, the respiratory response is insufficient to prevent the development of arterial hypoxemia. The degree of hypoxemia can be an indicator of the performance, but arterial blood collection is complicated and impractical on the race track. The aim of the present study was based on the need to have an appropriate method to assess respiratory function during exercise under field conditions. This study was established to explore the usefulness of venous blood gas measurements in exercise tests.

Eleven clinically healthy thoroughbred horses were used in the experiment. The same incremental exercise test was performed by each of the horses. Between each steps venous blood was collected from the left jugular vein. Blood samples were placed in special syringes under anaerobe conditions and stored on ice cubes until
analyzes were performed. The time between collection and the analysis was less than five hours.

Testing the hypothesis, a linear mixed model was fit to the pvO2 data. The analysis was carried out in R 2.15.1 statistical software.

The venous partial pressure of oxygen (pvO2) increased parallel with increasing exercise as was expected based on arterial blood gas values described in the literature. During the suspected period of arterial hypoxia (highest level of exercise), the pvO2 was significantly higher, compared to low level exercise values in the venous blood.

The pvO2 value did change oppositely to paO2, which reflect the physiologic limitation of equine ventilation during exercise. Venous blood gas parameters are not completely reliable to evaluate respiratory function in a resting horse but can be useful during exercise. The authors prove that some respiratory changes can be detected with simple sampling methods being appropriate on race tracks.


In the last 50 years the increasing of milk production, the intensive genetic selection, improved feeding and technological advancements induced the appearance of other problems. Views and opinions on the advantages and disadvantages of twin pregnancy have constantly been changed over the last 50–60 years. Most professionals believe that twin
pregnancy is not desirable due to several disadvantages (dystocia, retained foetal membranes, abortion, early pregnancy loss, higher culling rate, etc.) caused by twin calving. The extremely high physiological stress around calving leads to decline of fertility rates and prolonged number of open days, which are risk factors of rentability. Incidence of twin pregnancy sometimes reaches 23.9%, however, the proportion of twin calving is much less due to late embryonic and early pregnancy loss. It means that beside the physiological/production disadvantages twin pregnancy/twin calving also can cause economic losses.

However, in sheep there is a strong need to improve the reproduction potential (progeny per ewe). The principal aim in sheep farms is the lamb production, which is limited because of the seasonality of reproduction.

The main factor of economic production is to exploit maximally the reproduction performance of ewes.


The authors present a novel case of imported canine leishmaniosis in Hungary. Dermatitis accompanied by pruritus, lymphadenopathy and nephropathy manifested on a two years old male labrador succeeding by months its return from years long residence in Greece. Thorough clinical and laboratory investigations however remained inconclusive,
only a specific molecular diagnostic method gave evidence of the *Leishmania infantum* infection of the dog. The dog of deteriorated condition was euthanized and *post mortem* pathological, parasitological and molecular examinations proved the infection with the *Leishmania* undoubtedly. In relation to this recent case the authors give an explanation to the epidemiological situation in Hungary, a country that is, despite the fact that autochthonous canine leishmaniosis has been already described, is thought to be non-endemic for that parasitosis. However imported cases of canine leishmaniosis represent a major epidemiological risk because the occurrence of phlebotomine sandflies, vectors of *Leishmania infantum* have already been demonstrated in some regions of Hungary.

Á. Szabára – P. Gálfí – Cs. Jakab: IMMUNHISTOCHEMICAL EXAMINATIONS OF CANINE MYOCARDIUM. 2. CELL ADHESION MARKERS

The aim of the present study was to analyse the immunreactivity of twelve cell junction markers including claudin-1, -2, -3, -4, -5, -6, -7, -8, -10, -18, occludin, and β-catenin in canine cardiac muscle cells in routinely processed formalin-fixed paraffin embedded tissues. In the course of their work, the authors separated the heart from 10 adult dogs which died due to non-cardiac origin. The following anatomical samples were taken from the heart: (I) right atrium, (II) right ventricle free wall, (III) left atrium (IV), left ventricle free wall, and (V) interventricular septum. All samples were transmural necropsy sample, which contained the epicardial and endocardial surfaces, as well.
During the immunohistochemical analysis the subepicardial, the intermediate and the subendocardial cardiomyocytes were negative for all cell junction proteins. Perineural epitheloid cells of the subepicardial and intramyocardial nerves showed intense claudin-1 membrane positivity. Endothelial cells of vasculature of the heart showed intense claudin-5 immunreactivity. In the myocardium the discus intercalaris was positive for β-catenin.


The authors examined coccidia infection from faecal samples of wild boars shot in the south region of Matra in Hungary. All animals were harvested in 2009–2011 hunting season. 71 (43.82%) positive results were found from the 162 wild boars tested for coccidia oocyst. The Eimeria spp. were indentified in 44 cases and Eimeria perminuta in 41 cases (93.18%), E. debliecki in 21 cases (47.72%), E. scabra in 11 cases (25.0%), and E. neodebliecki were found in 6 cases (13.63%). In case of the wild boars younger than 1 year 21 positive samples (29.57%) were found and in case of wild boars older than 1 year 50 (70.42%) animals were tested positively. The coccidia oocyst infection occurred more frequently in males - 42 (59.16%) were tested positively - as for the females 29 (40.84%) positive samples were found.