

EquineReview

Introduction: this edition of Equine Review looks at a Chinese herbal supplement for gastric disease; medical-grade honey for wounds; primary hyperparathyroidism; and use of intravenous non-sterile fluids.

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Evaluation of a Chinese herbal supplement on equine squamous gastric disease and gastric fluid pH in mares

Equine gastric ulcer disease is a cause of morbidity in horses, with an incidence reported at greater than 80%. Wei Le San (WLS) is a Chinese herbal formula of nine herbs selected for putative anti-inflammatory effects. Munsterman et al (J Vet Intern Med 2019; 33:2280–2285) aimed to determine the efficacy of WLS for non-glandular gastric ulcers induced by an intermittent feeding regime, hypothesising that gastric ulceration scores would be reduced compared to controls. Ten horses underwent a 5-week trial on two occasions (treatment and placebo), to serve as their own controls. For the first week, horses were given an intermittent feeding regime, designed to induce or worsen existing ulcers. Treatment or a placebo was given from day 7. Gastroscopy was performed on days 0, 6 and 34. Gastric juice pH was measured and ulcers scored. On day 6, 8 control horses and 9 treated horses had squamous gastric ulceration, following feed deprivation. After 4 weeks of treatment 5/10 control and 4/10 treated horses had gastric ulceration. Ulcer number and severity was not different between groups ($p=0.81$ and 0.85 respectively). There was no difference noted in gastric pH after 4 weeks of treatment with WLS and untreated controls compared to baseline ($p=0.46$). The authors concluded that WLS was not effective at reducing gastric ulcer severity in horses, caused by intermittent feed deprivation.

Intralesional application of medical-grade honey improves healing of surgically treated lacerations in horses

Dehiscence is a common complication following wound repair in horses (reported rates as high as 74% on lower limbs). Honey has broad antimicrobial activity, anti-inflammatory actions and re-

duces healing time. Medical grade honey (MGH) is sterilised using gamma irradiation to eradicate any bacteria/bacterial spores in raw honey. Mandel et al (Equine Vet J. 2020; 52: 41–45) hypothesised that incorporating MGH into primary lacerations would reduce wound dehiscence incidence. A prospective, open label block randomised controlled clinical study was performed. Horses were enrolled if the practitioner decided to repair a wound by primary closure and the owner consented. In the treatment group, MGH was applied before skin closure. Questionnaires were completed by practitioners at the time of wound closure and at suture removal. In all, 127 cases treated by 11 practitioners were included (69 MGH treated, 58 controls). Complete healing was seen in 35/69 (50.7%) MGH treated horses vs 18/58 (31%) controls. There were no signs of infection in 82.6% of MGH treated horses vs 64.9% of controls. The authors concluded that treatment with MGH significantly improved healing, prevented infection and resulted in more satisfactory outcomes.

Diagnosis and treatment of confirmed and suspected primary hyperparathyroidism in equids: 17 cases (1999–2016)

Primary hyperparathyroidism (PHPT) results from parathyroid gland hyperplasia or neoplasia, causing excessive production of parathyroid hormone (PTH) unresponsive to negative feedback mechanisms. It is rare and historically difficult to treat. Hyperparathyroidism is characterised by derangements in calcium and phosphorous homeostasis. Clinical signs include anorexia, weight loss, facial bone osteodystrophia fibrosa, osteopenia and lameness. Gorenberg et al (Equine Vet J. 2020; 52: 83–90) aimed to characterise findings of PHPT; evaluate ultrasonography (US) and scintigraphy as diagnostic modalities; and document potential surgical complications and treatment efficacy. Cases (17) were identified retrospectively.

Inclusion criteria were persistent hypercalcaemia, normal renal function and high serum PTH concentration or histopathologic identification of parathyroid adenoma. Abnormal parathyroid tissue was suspected by US in 7/13 horses and in 10/11 horses examined by scintigraphy. Surgical excision was attempted in 10/17 cases, with 6/10 being confirmed as PHPT. Hypocalcaemia was seen in 2/6 cases after removal of a parathyroid adenoma. Medical therapy was used in 7 horses and was unsuccessful in 2 cases. Sixteen horses survived to discharge. The authors found a 50% PHPT cure rate after attempted surgical excision of parathyroid adenoma and 100% cure rate for surgical excision of single gland adenomas at the thoracic inlet. All cases treated surgically either had high PTH concentration or definitive histopathologic diagnosis, suggesting surgical failure was more likely due to inadequate identification of abnormal tissue than to misdiagnosis.

Outcome and complications in horses administered sterile or non-sterile fluids intravenously

Obtaining commercial fluids for intravenous administration (IVF) was challenging during a recent shortage, necessitating use of non-sterile fluids (JUG) in some hospitals. A limitation of IVF is that most commercially-available products are replacement solutions with electrolyte concentrations similar in composition to ECF, suitable for short-term replacement but not necessarily to replace ongoing fluid losses. Kopper et al (J Vet Int Med. 2019; 33:2739–2745) aimed to retrospectively evaluate death, complications, blood pH and plasma electrolyte concentrations of horses that received JUG versus IVF. Inclusion criteria included age >6 months and receiving IVF or JUG for >24 hours. Blood work was evaluated. Survival to discharge, development of fever, jugular vein phlebitis/thrombosis, arrhythmias, and laminitis were endpoints of interest. Three custom-made JUG formulations were used. The final analysis included 186 IVF and 37 JUG horses. There was no difference in survival. Jugular vein phlebitis was more common in JUG horses (3/37 vs 1/186). There was no difference in other complications. Treatment with JUG resulted in lower blood pH and HCO_3^- , and higher Cl^- compared to IVF. In conclusion, client consent should be obtained to use JUG, due to the increased risk of thrombophlebitis. **EQ**