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Effect of an omeprazole (GastroGard™) treatment on cribbiting in horses suffering from gastric ulceration

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Cribbiting is a common stereotypy in domestic horses and is associated with stress and low fibre/ high concentrate diets, which are known to cause gastric inflammation and ulceration. Recent studies indicate that antacid supplements can reduce both gastric inflammation and cribbiting. However, stereotypies are also associated with altered brain functions and these are thought to be responsible for emancipation. Emancipation refers to a process by which stereotypies become increasingly independent of the causal factors and may therefore persist with age, regardless of the conditions. Emancipation complicates therapy and points to the importance of prevention.

To further examine the relationship between gastric health and cribbiting and its relation to age at onset, we examined the effect of the proton-pump inhibitor omeprazole (GastroGard™, Merial) on gastric inflammation/ulceration and on cribbiting in a double-blind placebo-controlled study. Thirty-one horses of different sex, breed and age were randomly allocated to treatment and placebo and divided into three groups depending on age: 0-5 years (n=11), 5-10 years (n=11) and >10 years (n=9), whereby age at onset of cribbiting was d“ 5 years for all horses. Treatment and placebo were administered orally by syringe once every day for 28 days by the horse owners. Treatment consisted of 4mg/kg omeprazole for the first four days and 1mg/kg for the following 24days.

Using scan sampling and behaviour sampling, general activity and the number of crib-bites were assessed in the home pens one day before and one day between day 21 and 28 of treatment. Observations were made for three hours each around morning and evening feeding times, respectively. Prior to pre-treatment observations and after post-treatment observations, the horses were transported to the clinic and endoscoped for signs of inflammation and ulceration in the oesophagus, the squamous area, the glandular area and the first part of the duodenum using a common scoring system (Andrews et al. 1999).

All 31 horses showed signs of gastric inflammation/ulceration which decreased significantly from a median score of 1,2 to 0,6 in the treatment group (Wilcoxon signed rank test, z=-3,186, p=0,001), while there was no change in the placebo group (z=-0,577, p=1.0). However, there was no significant difference in cribbiting before and after treatment, neither in the treatment group (z=-1,834, p=0,068), nor in the placebo group (z=-0,415, p=0,734). Moreover, there were no significant effects of age on gastric inflammation/ulceration (2-way ANOVA, F=1,112, p=0,345) or cribbiting (F=1,113, p=0,344).

These results contrast with the recent studies on the effects of antacids on gastric health and cribbiting. There are two possible explanations for this: First, cribbiting may become rapidly established and may thus have persisted even in the youngest age group. Second, omeprazole acts specifically by reducing gastric acid secretion into stomach, while antacids may also have an effect on the intestine. However, these results shed doubts on the hypothesis that cribbiting is caused by gastric inflammation/ulceration.

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