

Is Gastric Hyperacidity Significant In Horses?

Allison Stewart, The University of Queensland –One Year Grant

By investigating rebound acid hypersecretion in horses, this research would fill a critical knowledge gap and set foundations for improvement of management and anti-ulcer treatment practices.



The aim of this study is to determine if there is a significant increase in acidity in the stomach of horses, beyond normal levels after the discontinuation of an anti-ulcer treatment, omeprazole. Several studies have demonstrated that under normal conditions the equine stomach is an acidic environment, with the pH recorded often below 4. This acidic environment is maintained due to a constant secretion of acid into the stomach. The lining of the stomach is protected under normal conditions by the feed within the stomach. As horses, in non-domesticated environments, continually graze pasture throughout the day, there is always feed in the stomach protecting the lining from the stomach acid.

Equine Gastric Ulcer Syndrome (EGUS) is a term used to describe stomach ulcers in horses. Equine Gastric Ulcer Syndrome is the most common condition of the equine stomach, and is reported to affect 47 to 100% of Thoroughbred racehorses in training. Stomach ulcers in horses have been attributed to exposure of the lining of the stomach to the acidic contents. Treatment of stomach ulcers is aimed at decreasing acid secretion, and therefore increasing pH within the stomach. Omeprazole is the most common treatment for stomach ulcers and has been widely demonstrated to effectively increase the gastric pH and treat stomach ulcers.

Due to the common occurrence of stomach ulcers in the equine population, particularly in racehorses, omeprazole is often used to prevent and treat EGUS without confirmation of the disease. This indiscriminate use of omeprazole is very common in equine practice, and often results in horses being treated with omeprazole for long periods of time. Omeprazole is considered a safe drug, with no reports of adverse effects in horses.

However, in human medicine, concerns have emerged regarding long-term use of omeprazole. One of these concerns is a sudden increase in stomach acid secretion and a resultant decrease in stomach pH beyond the levels that are considered normal when the medication is discontinued. This rebound hyperacidity leads to a high recurrence rate of stomach ulceration especially after long-term treatment. Within the human healthcare system there are now stewardship programs set up in some hospitals in order to reduce unnecessary use of anti-ulcer medications and decrease the risks associated with long-term administration.

In horses, there has been some investigation of the impact of administration of omeprazole on the hormonal control of gastric acid secretion, and these preliminary studies demonstrated that there is an increase in the hormones that stimulate acid production when omeprazole administration is stopped. However, there have been no studies investigating how the stomach pH is affected by the discontinuation of omeprazole. The aim of this study would be to document the stomach pH of horses prior to, during and after the administration of anti-ulcer medication (omeprazole). By demonstrating the presence of rebound gastric hyperacidity after administration of omeprazole in horses, this research would lay the groundwork for further investigation into management and treatment practices to minimize this phenomenon. The findings of this study may provide the foundation for further research into how the duration and dose of omeprazole impact hyperacidity, and if tapering the dose prior to discontinuing is advisable, or if using alternative acid-suppressive drugs would help avoid rebound gastric hyperacidity.