

MESSAGE FROM THE GRAYSON-JOCKEY CLUB RESEARCH FOUNDATION

EQUINE GASTRIC ULCER SYNDROME IN FOALS

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The Grayson-Jockey Club Research Foundation has funded several research proposals that have provided a large body of information regarding the medical management, the nutritional management, and the prevention of equine gastric ulcer syndrome in adult performance horses. Gastric ulceration also remains a significant medical problem in foals of all ages.

Four syndromes have been recognized in foals with equine gastric ulcer syndrome: (1) silent ulcers, which occur most often in the non-glandular stomach and are considered an incidental finding, identified during gastroscopy or at necropsy; (2) active ulcers, where foals frequently present with clinical signs such as abdominal pain, poor condition, poor coat, and excessive salivation; (3) perforating ulcers, which typically result in a severe, diffuse, and fatal peritonitis; and (4) pyloric or duodenal stricture, where a physical blockage of the terminal stomach or small intestine develops in association with ulcer healing.

The clinical signs a foal demonstrates with gastric ulcers vary and some of the signs are similar to other disease processes that cause gastrointestinal tract or abdominal pain. A poor coat, a pot-bellied appearance, and a lack of growth are common signs in a foal with gastric ulceration. Other clinical signs associated with equine gastric ulcer syndrome in foals include anorexia (complete or partial), lying on its back, rolling, flank biting, hypersalivation, and teeth-grinding. Unfortunately, many foals with perforating ulcers do not show clinical signs of gastric ulceration until the ulcer perforates; then they demonstrate signs of septic shock (shaking, sweating, high heart rate). In cases of pyloric or duodenal stricture, the foal will continue to demonstrate signs of severe pain until the stomach is decompressed via passage of a nasogastric tube.

Gastric ulcers have been diagnosed in foals as young as two days old and can occur throughout a young horse's life. Studies have identified that approximately 21%-51% of the general population of foals have silent ulcers. The highest incidence of gastric ulceration in foals occurs in foals less than 10 days of age or when a foal of any age contracts a disease, particularly a disease that results in diarrhea and decreased gastrointestinal tract motility.

Gastroscopy is considered the gold standard for the diagnosis of gastric ulceration at this time. The shortcomings of this diagnostic modality are the inability to define accurately the depth of the ulcer and to determine the degree of damage to the various layers of the gastric tissues. Currently, there are no accepted blood tests to identify biomarkers in foals with gastric ulceration. But, recently, a blood sucrose absorption test was evaluated as a screening tool for the presence of gastric ulceration in adult horses. The test appears to identify horses that have gastric ulcers, but the test has a significant number of false positive results. This test has not been studied in neonates, foals, or weanlings.

The treatment for foals with gastric ulceration is similar to that of adult horses in most cases. The hallmark of therapy is gastric acid suppression. Omeprazole is the most popular and effective oral medication used to decrease gastric acid formation in a foal's stomach. An intravenous medication, pantoprazole, has been

studied in foals and is a viable alternative medication to suppress acid formation in the foal's stomach if the stomach is not emptying normally. Sucralfate is an oral medication that will coat ulcers, provide comfort, and possibly aid in healing by enhancing blood flow to the ulcer and protecting the damaged tissue from further acid-induced injury. Misoprostol is a synthetic hormone analogue that is administered orally and may be useful in promoting blood flow to ulcerated regions in any part of the gastrointestinal tract, to promote ulcer healing. At this time, bacterial infection is not considered a primary component of equine gastric ulcer syndrome; therefore, antibiotics are generally not recommended for treatment of gastric ulceration. If a foal has developed a stricture in the terminal portion of the stomach or in the duodenum, surgery is indicated to bypass the constricted area.

The inciting cause of equine gastric ulcer syndrome in foals is not well understood; therefore, making recommendations to prevent the formation of gastric ulcers in foals is difficult. The administration of sucralfate is a safe and effective way to prevent ulceration in foals that are at a higher risk of developing ulcers, but if ulcers are already present, sucralfate alone will not effect ulcer healing. The use of omeprazole will likely prevent ulcer formation and will facilitate ulcer healing. Unfortunately, studies have demonstrated that acid suppression also will make a foal more susceptible to other gastrointestinal tract diseases. Currently the most popular recommendation is to treat a foal that has been diagnosed (via gastroscopy) with gastric ulceration only with drugs that suppress gastric acid formation. **BH**