

Setting the Stage for Success in the Ring

Rider Pre-Competition Checklist

- ✓ Yoga
- ✓ Deep breathing
- ✓ Sports psychologist
- ✓ Pep talk from trainer
- ✓ Chamomile tea
- ✓ Motivational music

Horse Pre-Competition Checklist

- ✓ Rubber stall mat
- ✓ New shoes
- ✓ Apples
- ✓ Favorite stall toy
- ✓ Bran mash
- ✓ ULCERGARD®(omeprazole)

Competitive riders will use nearly any and all tools available to calm those pesky horse show nerves. Like most seasoned athletes, they are prepared, excited and passionate about competing, but their nerves can and do, sometimes, get the best of them.

Because they are human, riders have the opportunity to experiment with various methods of relaxation to relieve the stress of competition. But what about their equine partners?

Think of the possible sources of stress introduced to horses before, during and after a show:¹

- Increased training regimen.
- Travel, sometimes for long distances.
- Adverse environmental conditions such as high heat and humidity or very cold and windy weather.
- Insufficient rest between events.
- Lack of sleep due to late night events or activity at the show barn.
- Presence and activity of strange horses and people.
- Changes in the horse's daily routine.

Increased stress levels of the handlers and riders can also affect a horse.¹ The combination of those stress levels with the factors listed above has the potential to impact the horse's health. "The show environment can be very stressful to a horse, which can cause a number of problems, including the development of stomach ulcers," says April Knudson, DVM, Equine Specialist, Veterinary Services, Merial.

A horse's stomach can produce up to 16 gallons of acid each day.² While a high roughage diet results in a decreased level of acid due to a buffering effect of the grass itself and also the horse's own saliva, that opportunity isn't readily available in most show environments.³ Given that limitation and the other risk factors created by the nature of competition, ulcer prevention is critical to optimum performance.

"ULCERGARD reduces acid production by the acid pump," Dr. Knudson says. In studies, ULCERGARD prevented stomach ulcers in 82% of horses when given once daily, while 86% of untreated horses developed stomach ulcers.⁴

“Before I even go to a show, I start my horse on ULCERGARD as a way to prevent stomach ulcers from occurring,” says Kari Kemper Hickam, Blue Springs, Mo., a competitor on the Arabian horse show circuit for more than 30 years. “I continue with this prevention regimen at the show and follow up for a few days when I get back home. I do a lot of things so that I can perform at my best and want to do the same for my horses so they can, too.” Kemper Hickam is one of four winners in Merial’s Stay on Guard contest, which was held last year to identify several new ULCERGARD spokespeople.

The only proven, FDA-approved medication specifically for preventing stomach ulcers in healthy horses,⁵ ULCERGARD is widely available through veterinarians and dispensed as a once-daily oral paste formulation.

If a horse should develop stomach ulcers, GASTROGARD® (omeprazole) is the only product approved by the FDA to treat and heal them. It has been proven to heal or significantly improve stomach ulcers by up to 99% in treated horses.⁶ Administered as an oral paste, GASTROGARD can also be obtained from a veterinarian.

“For horse owners who compete, it’s important to think about preventing stomach ulcers before an unexpected veterinary visit is required,” says Dr. Knudson. Should a horse display signs of stomach ulcers, Dr. Knudson notes it is possible for a veterinarian to make a presumptive diagnosis without gastroscopy. In such a case, a 28-day regimen of GASTROGARD with one tube given once per day effectively heals or reduces the severity of gastric ulcers.⁶

Merial is a world-leading, innovation-driven animal health company, providing a comprehensive range of products to enhance the health, well-being and performance of a wide range of animals. Merial employs approximately 5,600 people and operates in more than 150 countries worldwide. Its 2010 sales were more than \$2.6 billion. Merial is a Sanofi company.

For more information, please see www.merial.com.

IMPORTANT SAFETY INFORMATION

Caution: Safety of GASTROGARD in pregnant or lactating mares has not been determined.

ULCERGARD can be used in horses that weigh at least 600 pounds. Safety in pregnant mares has not been determined.

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¹ King C. Stress, Performance and Adaptogenic Herbs, Horses Inc., January 2006. Available at <http://www.animavet.com/articles>. Accessed May 3, 2011.

² Kitchen DL, Merritt AM, Burrow JA. Histamine-induced gastric acid secretion in horses. *AJVR* 1998;59(10):1303–1306.

³ Mitchell RD, Prevalence of gastric ulcers in hunter/jumper and dressage horses evaluated for poor performance. Association for Equine Sports Medicine. September 2001.

⁴White GW, et al. Prevention of occurrence and recurrence of gastric ulcers in horses by treatment with omeprazole at 1 mg/kg/day. In *Proceedings. 49th Annual Convention of the American Association of Equine Practitioners* 2003:220-221.

⁵ULCERGARD product label.

⁶Freedom of Information Summary for GASTROGARD.

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GastroGard[®] (omeprazole) Oral Paste for Equine Ulcers

Oral Paste for Horses and Foals
NADA 141-123, Approved by FDA

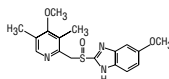
Caution

Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

Description

Chemical name: 5-Methoxy-2-[[[4-methoxy-3,5-dimethyl-2-pyridinyl] methyl]sulfinyl]-1H-benzimidazole.

Empirical formula: C₁₇H₁₉N₃O₃S. Molecular weight: 345.42. Structural formula:



How Supplied

GASTROGARD[®] (omeprazole) Paste for horses contains 37% w/w omeprazole and is available in an adjustable-dose syringe. Each syringe contains 2.28 g of omeprazole. Syringes are calibrated according to body weight and are available in boxes of 7 units or 72 units.

Storage Conditions

Store at 68°F – 77°F (20-25°C). Excursions between 59°F – 86°F (15-30°C) are permitted.

Indications

For treatment and prevention of recurrence of gastric ulcers in horses and foals 4 weeks of age and older.

Dosage Regimen

For treatment of gastric ulcers, GASTROGARD Paste should be administered orally once-a-day for 4 weeks at the recommended dosage of 1.8 mg omeprazole/lb body weight (4 mg/kg).

For the prevention of recurrence of gastric ulcers, continue treatment for at least an additional 4 weeks by administering GASTROGARD Paste at the recommended daily maintenance dose of 0.9 mg/lb (2 mg/kg).

Directions For Use

- GASTROGARD Paste for horses is recommended for use in horses and foals 4 weeks of age and older. The contents of one syringe will dose a 1250 lb (568 kg) horse at the rate of 1.8 mg omeprazole/lb body weight (4 mg/kg). For treatment of gastric ulcers, each weight marking on the syringe plunger will deliver sufficient omeprazole to treat 250 lb (114 kg) body weight. For prevention of recurrence of gastric ulcers, each weight marking will deliver sufficient omeprazole to dose 500 lb (227 kg) body weight.
- To deliver GASTROGARD Paste at the treatment dose rate of 1.8 mg omeprazole/lb body weight (4 mg/kg), set the syringe plunger to the appropriate weight marking according to the horse's weight in pounds.
- To deliver GASTROGARD Paste at the dose rate of 0.9 mg/lb (2 mg/kg) to prevent recurrence of ulcers, set the syringe plunger to the weight marking corresponding to half of the horse's weight in pounds.
- To set the syringe plunger, unlock the knurled ring by rotating it 1/4 turn. Slide the knurled ring along the plunger shaft so that the side nearest the barrel is at the appropriate notch. Rotate the plunger ring 1/4 turn to lock it in place and ensure it is locked. Make sure the horse's mouth contains no feed. Remove the cover from the tip of the syringe, and insert the syringe into the horse's mouth at the interdental space. Depress the plunger until stopped by the knurled ring. The dose should be deposited on the back of the tongue or deep into the cheek pouch. Care should be taken to ensure that the horse consumes the complete dose. Treated animals should be observed briefly after administration to ensure that part of the dose is not lost or rejected. If any of the dose is lost, redosing is recommended.
- If, after dosing, the syringe is not completely empty, it may be reused on following days until emptied.
Replace the cap after each use.

Warning

Do not use in horses intended for human consumption. Keep this and all drugs out of the reach of children. In case of ingestion, contact a physician. Physicians may contact a poison control center for advice concerning accidental ingestion.

Adverse Reactions

In efficacy trials, when the drug was administered at 1.8 mg omeprazole/lb (4 mg/kg) body weight daily for 28 days and 0.9 mg omeprazole/lb (2 mg/kg) body weight daily for 30 additional days, no adverse reactions were observed.

Precautions

The safety of GASTROGARD Paste has not been determined in pregnant or lactating mares.

Clinical Pharmacology

Mechanism of Action: Omeprazole is a gastric acid pump inhibitor that regulates the final step in hydrogen ion production and blocks gastric acid secretion regardless of the stimulus. Omeprazole irreversibly binds to the gastric parietal cell's H⁺, K⁺ ATPase enzyme which pumps hydrogen ions into the lumen of the stomach in exchange for potassium ions. Since omeprazole accumulates in the cell canaliculi and is irreversibly bound to the effect site, the plasma concentration at steady state is not directly related to the amount that is bound to the enzyme. The relationship between omeprazole action and plasma concentration is a function of the rate-limiting process of H⁺, K⁺ ATPase activity/turnover. Once all of the enzyme becomes bound, acid secretion resumes only after new H⁺, K⁺ ATPase is synthesized in the parietal cell (i.e., the rate of new enzyme synthesis exceeds the rate of inhibition).

Pharmacodynamics: In a study of pharmacodynamic effects using horses with gastric cannulae, secretion of gastric acid was inhibited in horses given 4 mg omeprazole/kg/day. After the expected maximum suppression of gastric acid secretion was reached (5 days), the actual secretion of gastric acid was reduced by 99%, 95% and 90% at 8, 16, and 24 hours, respectively.

Pharmacokinetics: In a pharmacokinetic study involving thirteen healthy, mixed breed horses (8 female, 5 male) receiving multiple doses of omeprazole paste (1.8 mg/lb once daily for fifteen days) in either a fed or fasted state, there was no evidence of drug accumulation in the plasma when comparing the extent of systemic exposure (AUC_{0-∞}). When comparing the individual bioavailability data (AUC_{0-∞}, C_{max}, and T_{max} measurements) across the study days, there was great inter- and intrasubject variability in the rate and extent of product absorption. Also, the extent of omeprazole absorption in horses was reduced by approximately 67% in the presence of food. This is evidenced by the observation that the mean AUC_{0-∞} values measured during the fifth day of omeprazole therapy when the animals were fasted for 24 hours was approximately three times greater than the AUC estimated after the first and fifteenth doses when the horses were fed hay ad libitum and sweet feed (grain) twice daily. Prandial status did not affect the rate of drug elimination. The terminal half-life estimates (N=38) ranged from approximately one-half to eight hours.

Efficacy

Dose Confirmation: GASTROGARD[®] (omeprazole) Paste, administered to provide omeprazole at 1.8 mg/lb (4 mg/kg) daily for 28 days, effectively healed or reduced the severity of gastric ulcers in 92% of omeprazole-treated horses. In comparison, 32% of controls exhibited healed or less severe ulcers. Horses enrolled in this study were healthy animals confirmed to have gastric ulcers by gastroscopy. Subsequent daily administration of GASTROGARD Paste to provide omeprazole at 0.9 mg/lb (2 mg/kg) for 30 days prevented recurrence of gastric ulcers in 84% of treated horses, whereas ulcers recurred or became more severe in horses removed from omeprazole treatment.

Clinical Field Trials: GASTROGARD Paste administered at 1.8 mg/lb (4 mg/kg) daily for 28 days healed or reduced the severity of gastric ulcers in 99% of omeprazole-treated horses. In comparison, 32.4% of control horses had healed ulcers or ulcers which were reduced in severity. These trials included horses of various breeds and under different management conditions, and included horses in race or show training, pleasure horses, and foals as young as one month. Horses enrolled in the efficacy trials were healthy animals confirmed to have gastric ulcers by gastroscopy. In these field trials, horses readily accepted GASTROGARD Paste. There were no drug related adverse reactions. In the clinical trials, GASTROGARD Paste was used concomitantly with other therapies, which included: anthelmintics, antibiotics, non-steroidal and steroidal anti-inflammatory agents, diuretics, tranquilizers and vaccines.

Diagnostic and Management Considerations: The following clinical signs may be associated with gastric ulceration in adult horses: inappetence or decreased appetite, recurrent colic, intermittent loose stools or chronic diarrhea, poor hair coat, poor body condition, or poor performance. Clinical signs in foals may include: bruxism (grinding of teeth), excessive salivation, colic, cranial abdominal tenderness, anorexia, diarrhea, sternal recumbency or weakness. A more accurate diagnosis of gastric ulceration in horses and foals may be made if ulcers are visualized directly by endoscopic examination of the gastric mucosa.

Gastric ulcers may recur in horses if therapy to prevent recurrence is not administered after the initial treatment is completed. Use GASTROGARD Paste at 0.9 mg omeprazole/lb body weight (2 mg/kg) for control of gastric ulcers following treatment. The safety of administration of GASTROGARD Paste for longer than 91 days has not been determined.

Maximal acid suppression occurs after three to five days of treatment with omeprazole.

Safety

- GASTROGARD Paste was well tolerated in the following controlled efficacy and safety studies.
- In field trials involving 139 horses, including foals as young as one month of age, no adverse reactions attributable to omeprazole treatment were noted.
- In a placebo controlled adult horse safety study, horses received 20 mg/kg/day omeprazole (5x the recommended dose) for 90 days. No treatment related adverse effects were observed.
- In a placebo controlled tolerance study, adult horses were treated with GASTROGARD Paste at a dosage of 40 mg/kg/day (10x the recommended dose) for 21 days. No treatment related adverse effects were observed.
- A placebo controlled foal safety study evaluated the safety of omeprazole at doses of 4, 12 or 20 mg/kg (1, 3 or 5x) once daily for 91 days. Foals ranged in age from 66 to 110 days at study initiation. Gamma glutamyltransferase (GGT) levels were significantly elevated in horses treated at exaggerated doses of 20 mg/kg (5x the recommended dose). Mean stomach to body weight ratio was higher for foals in the 3x and 5x groups than for controls; however, no abnormalities of the stomach were evident on histological examination.

Reproductive Safety

In a male reproductive safety study, 10 stallions received GastroGard Paste at 12 mg/kg/day (3x the recommended dose) for 70 days. No treatment related adverse effects on semen quality or breeding behavior were observed. A safety study in breeding mares has not been conducted.

For More Information

Please call 1-888-637-4251 and please visit our web site at www.gastrogard.com.

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