Equi-Mast®
Gastric Formula
CLINICAL STUDY

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CLINICAL STUDY SUMMARY

Clinical study documenting the use of Equi-Mast® to access its assistance in maintaining a healthy equine gastrointestinal system and to support the control of stomach ulcers.

The only way to diagnose and verify stomach ulcers is through gastric endoscopy or gastroscopy, which involves placing an endoscope into the stomach and looking at its inner surface.

John Marcotte, DVM was the attending veterinarian for this two-part study, conducted to verify the positive effects of using Equi-Mast® in horses with significant and differing levels of Equine Gastric Ulcer Syndrome (EGUS); gastric erosions or lesions in the stomach. The gastric ulcers or lesions were verified through endoscopies on all horses in the initial phase of the study. The degree of severity was documented by Dr. Marcotte.

MATERIALS AND METHODS

- Equi-Mast® is a high quality supplement designed to support a healthy gastrointestinal system in all horses. This quality product is formulated with the key ingredient, mastic gum. The results of this study verify the positive effects of utilizing this product in horses with severe gastric ulcers.
- This study was conducted as a field trial at a quarter horse facility in northeast Oklahoma. All horses are privately owned and were treated with due regard to their welfare.
- Eight quarter horses were ultimately selected for the study. Inclusion criteria were horses specifically showing significant gastric ulceration and between the ages of 2-6 years. The significant gastric ulceration was confirmed by gastroscope and clinical observation by Dr. Marcotte. All gastroscope images were photographed for documentation purposes. Horses were mildly sedated, for endoscopies, utilizing 1 ml or 1.2 ml Dormosedan®.
- All horses selected were quarter horses in heavy training, most were young horses in race training. None of the horses received any drug therapy thirty (30) days prior to start of the study or during the study.
- After ten days of product supplementation, urine samples were collected from each horse and sent to an outside independent laboratory for testing. Testing was performed at University of Missouri-Vet Diagnostics Lab and Texas A & M Veterinary Medical Diagnostics Laboratory.
- After a minimum of thirty (30) days, all horses were examined and endoscopies performed by Dr. Marcotte to evaluate product results. All gastroscope images were photographed again for documentation purposes. Horses were also mildly sedated again for endoscopies, utilizing 1 ml or 1.2 ml Dormosedan®.

TERMS AND DEFINITIONS

Ulceration/Lesion Grading Scale

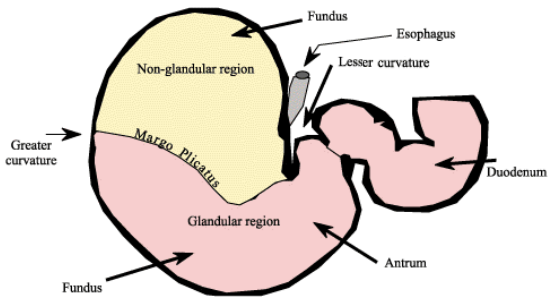
0	Normal
Grade I	Intact Mucosa with reddening or hyperkeratosis
Grade II	Mild ulceration - small single or multifocal lesions, mild hyperkeratosis
Grade III	Moderate ulceration - large single or extensive multifocal lesions
Grade IV	Severe ulceration – extensive lesions with areas of deep ulceration

Hyperkeratosis
Term often used in connection with lesions of the mucous membranes

Margo Plicatus
Cuticular ridge that separates the squamous mucosa from the glandular mucosa, in the equine stomach

Recumbency
Lying back or lying down, resting or leaning against something else

Equine Stomach Diagram



CLINICAL STUDY 1

OBJECTIVE

The objective of this trial was to assess the benefits of utilizing Equi-Mast in horses with established gastric ulcers or lesions.

This study documented the clinical analysis of utilizing Equi-Mast in eight quarter horses which were actively engaged in racing or race training. These horses were positively diagnosed with significant and differing levels of Equine Gastric Ulcer Syndrome (EGUS); gastric erosions or lesions in the stomach. The gastric ulcers or lesions were verified through endoscopies on all horses in the initial phase of the study. The degree of severity was documented by the attending veterinarian, Dr. Marcotte.

All horses in the study showed good acceptance of the product, no side effects were reported and all horses tested negative for NSAIDS.

After thirty (30) days of supplementation, all horses, except one*, showed significant improvement after supplementation with Equi-Mast. Improvement was observed, positively verified and documented through endoscopies performed on all horses and documented via photographs by the attending veterinarian, Dr. Marcotte. His statement of positive results is included in the "Results" section of this study.

In less than 60 days, Horse #12 had numerous Grade II and Grade III ulcers reduced to Grade I ulcer and Hyperkeratosis. Horse #9 was diagnosed with Grade I and Grade II ulcers on 70% of the stomach wall. In less than 60 days this improved, revealing Grade I ulcers and diffuse hyperkeratosis. See the chart below for additional detailed information.

This table represents the individual horses, the initial completed gastroscope (positively diagnosing the severe ulceration) and the follow-up gastroscope documenting the results, after product supplementation for 30-60 days.

HORSE	DAY 1 - Initial Diagnosis	DAY 30-60	Results
#2 - 4 yr. old QH stallion	Blister Formation	Hyperkeratosis	Blisters healed - Number of Grade I ulcers reduced
	Hyperkeratosis	Grade I ulcers on Greater Curvature	
	Multiple Grade I ulcers		
#3 - 6 yr. old QH gelding	Hyperkeratosis	Hyperkeratosis Improved	Hyperkeratosis greatly improved
	Grade II ulcers	Grade II ulcers remain	Number of Grade II ulcers reduced
#4 - 2 yr. old QH gelding	Hyperkeratosis	Hyperkeratosis Improved	Hyperkeratosis drastically improved
# 8* - 2 yr. old QH gelding	Grade I ulcers	Grade III ulceration Present	
#9 - 2 yr. old QH filly**	Grade I and Grade II ulcers on 70% of Stomach Wall	Grade I ulcers - small in diameter	Ulceration reduced from Grade II to Grade I
		Diffuse Hyperkeratosis	Remaining ulcers dramatically reduced in size and scale
#10 - 3 yr. old QH filly	Grade II and Grade III ulcers on lesser curvature	Grade II and Grade III ulcers on Margo Plicatus	Ulcers on lesser and greater curvature reduced to hyperkeratosis.
	Greater curvature concentration and Margo Plicatis	Hyperkeratosis on Greater Curvature	
#12* - 2 yr. old QH gelding**	Grade II and Grade III ulcers on Greater Curvature	Single Grade I ulcer	Ulcers on greater curvature reduced to single Grade I ulcer with hyperkeratosis and superficial erosions
		Hyperkeratosis	
		Multiple superficial erosions	
#13 - 2 yr. old QH gelding	Hyperkeratosis on Lesser Curvature	Marked Hyperkeratosis	Grade III ulcers on greater curvature reduced to hyperkeratosis and Grade I and 2 ulcers on Margo Plicatus
	Grade III ulcers on 50% of Greater Curvature	Grade I and Grade II ulcers on Margo Plicatis	

* Horse #8 was ultimately removed from the study due to severity of initial and ongoing ulcerations. Placed under veterinarian's care for comprehensive treatment.

** Horse #9 was initially diagnosed with Grade I and Grade II ulcers on 70% of the stomach wall. In only 30-60 days, this improved, ultimately reduced to Grade I ulcers and diffuse hyperkeratosis.

*** Horse #12 initially showed numerous Grade II and Grade III ulcers and in a time period of just 30-60 days, these were ultimately reduced to Grade I ulcer and Hyperkeratosis.

RESULTS

Initial diagnosis, endoscopies and final determinations were conducted and completed by Dr. Marcotte.

Once eight horses were positively diagnosed with significant gastric ulceration, these animals were accepted into the study. The study was conducted March – July 2015.

The overall palatability of the product was good and caregivers reported no adverse effects during product supplementation.

Urine specimens were obtained and tested from all eight horses during the study. Results, for all horses, showed negative for NSAIDS (non-steroidal anti-inflammatory drugs), Fluphenazine, Fluoetine and Reserpine.

CLINICAL STUDY 2

OBJECTIVE

The intent of the study was to evaluate the efficiency of Equi-Mast® at a once-a-day dosage.

This study consists of 7 days Equi-Mast at a twice-a-day dosage followed by 21 days at once-a-day dosage.

All horses were scoped at day 1, day 7, day 21 and day 30.

All horses improved on the twice-a-day dosage. This improvement in stomach condition continued on the once-a-day dosage including the resolution of ulcers in horses #3 and #4.

HORSE	DAY 1 - Initial Diagnosis	Day 7	Day 30
#2* - 10 yr. old QH gelding	Hyperkeratosis	Marked improvement of Hyperkeratosis	Hyperkeratosis nearly resolved
#3 - 10 yr. old QH gelding**	Hyperkeratosis - Grade I ulcers	Hyperkeratosis and Grade I ulcers decreased	Hyperkeratosis and Grade I ulcers resolved
#4* - 9 yr. old QH Mare**	Hyperkeratosis - Superficial Erosion on Greater Curvature	Hyperkeratosis decreased	Multiple Grade I ulcers - Owner reported marked increase in workload, hauling and showing
#5** - 3 yr. old QH Mare**	Marked Hyperkeratosis	Hyperkeratosis surface area decrease	Hyperkeratosis resolved

* #2 Horse – Hyperkeratosis improved after 7 days of twice-a-day dosage and continued to decrease through the study, near resolution at 30 days. Product appears to adhere to the wall of the stomach at 7 and 14 days.

** #3 Horse – Hyperkeratosis and Grade I ulcers decreased at 7 days, resolved during treatment period.

*** #4 Horse – Hyperkeratosis with superficial erosion on greater curvature, decreased at 7 days, nearly resolved at 14 days. 30 days multiple Grade I ulcers. Owner reported a marked increase in the work load, hauling and showing at this time.

**** #5 Horse – Marked hyperkeratosis decreased surface area at 7 days, greatly improved at 14 days, resolved at 21 days.

RESULTS

All horses improved on the twice-a-day dosage. This improvement in stomach condition continued on the once-a-day dosage including the resolution of ulcers in horses #3 and #4.

CONCLUSION

All horses reported an improvement in attitude. Twice-a-day dosage may be beneficial for heavier work/show schedules.

" The mastic gum seems to be the important ingredient of the product for treatment purposes. The interest of 2 or 3 treatments per day does not seem to have a strong correlation toclinical signs."

" All horses, except horse #8, showed significant improvement in stomach condition evaluated by decreasing grades of ulceration and decreasing hyperkeratosis."

John Marcotte, DVM
September 2015

PRODUCT UTILIZED IN CLINICAL STUDY

Equine Specialty Products

EQUI-MAST® Gastric Formula

Formulated with mastic gum, soy lecithin and probiotics to assist in maintaining a healthy equine gastrointestinal system and to support the control of stomach ulcers.

One (1) ounce
35 gm dose

Ingredients: Mastic Gum 1.0 grams, Soy Lecithin 28.7 grams, DL Methionine 1.72 grams, Inositol .368 grams, Niacin .135 grams, Thiamine .042 grams, Riboflavin .038 grams, Pyridoxine .020 grams, Biotin .002 grams, Vitamin B12 184 mcg, Vitamin E 123 mcg, Zinc 1%, Selenium 40 ppm, FOS .5 gram, Silicon Dioxide 1%, Maltodextrin 2.8%, Probiotics 3 billion CFU 1.7%, Vanilla Flavoring .12 %

ABOUT THE AUTHOR

Dr. Marcotte is a 1994 graduate of the University of Missouri, College of Veterinary Medicine. He was also inducted into the Phi Zeta Veterinary Honor Society.

In 1998, Dr. Marcotte founded Marcotte Veterinary Clinic, Vinita, OK and his belief in current and continuous education on technology has propelled the clinic to become well-known in the equine industry, with a client base covering most of the central United States. Dr. Marcotte is a member of the AAEP, OVMA, AVMA, and the Society of Theriogenology.

REFERENCES

Dr. John A Marcotte, DVM, Marcotte Veterinary Clinic, Vinita, Oklahoma.

AAEP bulletin- "Gastric Ulcers", March 31, 2013, by Frank M. Andrews, DVM, MS, DACVIM.

"Equine Gastric Ulcers, Risk Factors and Diagnosis" - 06/06/2012 by Kylie Schaaf BVSc(hons) BSc(Vet)(hons) FANZCVS (Eq. Surg.) WestVets.

University of California, Davis – Center for Equine Health - Horse Report – "Diagnosing and Treating Gastric Ulcers in Horses. October 2012.

SBS Equine – "Natural Treatment for Gastric Ulcers in Horses" Dr. Richard Shakalis 2011 "Gastric Ulceration" – Horse – WikiVet – English – revised October 11, 2015.

Encarta dictionary, English version, 2015.

All study data is on file with Kaeco Group, Inc., Savannah, MO 64485.
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