Gastric Ulcers

By Nicola Tyler BSc (Hons), Nutrition Director, TopSpec Equine

What are equine gastric ulcers?

Gastric ulcers are lesions on the inside of the stomach wall, often where gastric acid has eroded the epithelial lining, resulting in ulcer formation. Ulcers occur mainly in the upper non-glandular, and therefore unprotected, area of the stomach, especially around the Margo plicatus (the area between the upper and lower stomach) and the exit to the duodenum, but they also occur in the lower glandular region. Vets use a grading system from 1-4 to describe the severity of ulcers, with 1 being the least severe and 4 the most.

How are ulcers diagnosed?

They are best diagnosed by a vet using an endoscope, which is a long tube with a camera on the end which is passed through the nose gently down to the stomach.

What are the symptoms?

The symptoms of gastric ulcers can be vague which is why it is so helpful to use an endoscope to see whether they are present and how severe they are. A horse may go off his feed and generally look unthrifty with a poor coat. Colic may occur when severe ulceration is present. A grumpy attitude and various types of stereotypical behaviour, notably crib-biting and/or windsucking and poor performance are often noted. More specific symptoms include ‘grunting’ when girthed-up or stretching out over a jump; and teeth grinding.

It is probably misleading to discuss causes of ulceration but certainly there are factors which make a horse more likely to suffer from ulcers. These include insufficient forage intake, large feeds, feeds high in cereals and therefore starch, strenuous exercise and stress.

One form of stress worthy of particular note with respect to ulcer formation is travelling, ulcers have been shown to form very quickly following stress, within five days, and it is interesting to reflect the double whammy that travelling may present as there is often insufficient forage intake as well as direct stress involved.

When a horse is exercised there is a physical compression of the

Email: nutritionist@topspec.com
Helpline: 01845 565030
stomach that increases markedly with speed, which causes the acidic contents of the lower stomach to disrupt the fibrous mat in the Margo plicatus area and splash onto the unprotected surfaces of the upper stomach. The starch in cereals, or cereal-based feeds, starts to ferment in the stomach producing VFA’s e.g. acetic acid (commonly known as vinegar) exacerbating ulcer formation. The administration of NSAIDs e.g. ‘Bute’ to horses has also been shown to predispose them to gastric ulcer formation in the glandular area, so veterinary surgeons will try to avoid long-term use.

We’re hearing more about equine gastric ulcers, what is the extent of the problem?
Early post-mortem research showed incident rates of less than 20% in Scandinavian leisure horses but more recent surveys in the Western world, using an endoscope, have shown an incidence of 80-90% in racehorses, over 60% in competition horses and up to 50% of horses used for leisure. Even a group of 62 broodmares in California were shown to have an incidence of 71%, albeit the ulcers were mild. A recent piece of research from France showed that the incidence of gastric ulcers in advanced endurance horses showed an increase from 48% off-season to 93% during the competitive season.

However many horses appear able to tolerate their ulcers without problems and it may not be advisable to treat non-symptomatic gastric ulcers unless the horse is competing at a high level or racing.

How can the problem of gastric ulcers be addressed in the short and long-term?
In the short term the best drug treatment remains those with Omeprazole as the active ingredient, of which the veterinary-licensed drug, Gastrogard, which is a proton pump inhibitor i.e. it reduces the amount of acid pumped into the stomach from the glandular area, which results in a less acidic stomach environment. A less acidic stomach environment results in healing of ulcers. However bear in mind that a certain level of acidity is needed to pre-digest feed before it enters the small intestine, where serious digestion takes place. Alternative medicinal treatments are less successful but when it is practical a period of two weeks or more at grass is highly successful for many previously stabled horses. Frustratingly there is a significant, but low, incidence of gastric ulcers in horses/ponies that live out 24/7, so turning away is not always the solution. In this situation non-dietary factors are clearly involved. As always, prevention is better than cure, where ulcers are concerned it is certainly cheaper!

In the long term there are several feeding practices that can be helpful in reducing the impact that ulcers have on any individual horse.

- Ensure that forage is available ad-lib, whether via good grazing or hay. Hay is preferable to haylage as a forage source because the latter is acidic. The main buffer for stomach acid is saliva and horses produce much more saliva when eating forage than when eating hard feed. As horses, unlike humans, secrete acid into their stomach constantly, the opportunity to eat forage ad-lib, so producing a near-constant trickle of acid-buffering saliva into their stomach, is very important.

- Be particularly careful to feed hay before a hard feed so that a ‘mat’ of fibre can form on top of the liquid stomach contents, reducing splashing of this acidic liquid up onto the non-glandular parts of the stomach.

- Feed at least one hour before exercise to avoid disruption of the mat; and ensure the horse has had access to hay, or alfalfa chop, before being ridden.

- Feeds containing high levels of β-glucans will increase the viscosity of stomach contents and help to coat ulcerated surfaces.

- Alfalfa, because of its calcium and protein content, has been shown to help reduce the severity of ulcers, and whilst less equivocal, some research has
indicated that soya oil may also be helpful; so rations containing these ingredients should be beneficial.

- A high ratio of Omega 3:6 fatty acids in feed may help to reduce the inflammation of ulcerated areas.

- Feeds containing an effective, long-lasting acid buffer should help. Inclusion of certain calcium and magnesium salts may also have a mild buffering effect.

- Protein is a natural buffer, whilst starch will increase acidity in the stomach; super-fibres and oil can be used to replace cereal starch in a formula. Therefore feeds high in protein (taking account of the individual horse’s requirement) oil and fibre, but low in starch, should be helpful.

- Clearly feeds should be as nutrient-dense as possible, leaving more room in the digestive system for forage.

- The age-old adage of feeding ‘little and often’ is very important to avoid overfilling the stomach.

- Avoiding the feeding of cereal or cereal-containing compound feeds is advisable.

All these practices should be instigated as soon as possible after a horse is diagnosed.

Dietary recommendations
The diet should be based on ad-lib forage (grass or hay) with frequent small nutrient-dense feeds of e.g. TopSpec Comprehensive Feed Balancer, TopChop Alfalfa and TopSpec UlsaKind cubes, with the possible addition of a little Soya oil.

The precise diet and the amount of oil, if any, will vary according to individual circumstances. This diet contains high quality protein, is very low in starch, free of cereal grains and yet will provide ample energy for work or gain in condition if required. In addition the UlsaKind cubes contain a number of ingredients known to support a healthy stomach lining.

Another feed product which could be included in the diet is unmolassed sugar beet pulp e.g. Speedibeet, which contains pectin, another ingredient known to increase the viscosity of stomach contents.

Reduce stress
Because stress has been highlighted by researchers as a major factor in predisposing horses to gastric ulcers, it might be worth considering adding an in-feed calmer with a broad approach to calming horses e.g. TopSpec Calmer. Probably the most important ingredient in this situation would be tryptophan, as it boosts serotonin levels in the brain to effectively relieve anxiety.

It is sensible to reduce sources of stress for the individual horse. Researchers found more ulceration in horses that did not show outward signs of stress when in a stressful situation than in those that did. Keeping to a routine and maximising turnout will nearly always help.

Another way of reducing stress is to always turn horses out amongst a stable group of companions with an established pecking order. If he gets upset when others go out first, turn him out first instead. It can be useful in some circumstances is to place a Perspex mirror in the stable.

As much as possible try to get inside your horse’s head and minimise the stress he is feeling whilst feeding him in a way that is as sympathetic as possible to his stomach and intestines.

Nicola Tyler
B.Sc. (Hons),
Nutrition Director
TopSpec Equine

Free Multiple-Award-Winning Helpline:
01845-565030

Helpline: 01845 565030  Email: nutritionist@topspec.com
TopSpec UlsaKind Cubes
Should always be fed with a TopSpec feed balancer or supplement. These ‘Non-Heating’ low sugar/starch cubes have been designed to support gastric health. However, the cereal-grain-free cubes are conditioning and will support hard work.
TopSpec UlsaKind Cubes are ideal in those circumstances where the internal surface of the stomach has been eroded, because they contain very high levels of β-glucans which form a gel and coat the stomach lining with a protective film. The gel-like stomach contents are less likely to splash the upper squamous epithelium in the stomach.
These β-glucans also slow the rate of passage of feed through the stomach and intestines because of the sticky, gel-like consistency of the feed. In the stomach this means that the periods of time when the stomach is empty and therefore highly acidic, are reduced. Because the β-glucans in TopSpec UlsaKind cubes bind to sugars in the intestine, their absorption is slowed and the glycaemic index of the feed is lowered.
The TopSpec UlsaKind formula also contains 1% of a marine-derived ingredient with established buffering properties. This calcium and magnesium-rich substance has been scientifically proven to reduce the environmental acidity under simulated in vitro equine stomach digestive conditions for up to six hours.