

Equine Grass Sickness - Beware

Grass sickness is a disease of horses, ponies and donkeys which is manifest by impaired activity of the gut due to damage to the autonomic (involuntary) nervous system. As we approach the new grazing season owners must be vigilant. Horses or ponies should be observed for any changes in their normal eating/drinking habits or behaviour, which might suggest that all is not well.

The cause of equine grass sickness is not proven but recent evidence strongly implicates involvement of the bacterium, *Clostridium botulinum*. The disease occurs in most parts of the UK mainland, mainly in grazing horses aged 2 to 7 years, during the spring and summer with a peak incidence in May.

Grass sickness occurs in three overlapping forms, acute, subacute and chronic. In the acute disease, the signs come on suddenly and are severe. These signs include colic, reflux of green stomach fluid down the nose, difficulty in swallowing, muscle tremors, abnormal sweating patterns, impaired gut activity and impaction of the colon. Such cases cannot be treated and euthanasia is the only option. In subacute cases, the signs are milder than in the acute cases and some do progress to the chronic form. In chronic grass sickness cases (cases which are still alive 8 or more days from the onset) the signs start more slowly and include marked weight loss, variable difficulty in swallowing and abdominal discomfort, muscle tremors, sweating, slow gut activity and a “snuffling” sound during breathing, due to blockage of the nasal passages with mucus. Success can be achieved in treating this form of the disease in some cases. (*Excerpt from Management of Chronic Grass Sickness Patients by Dr E Milne*)

The main line of research at present is the role of soil borne *Clostridium botulinum* type C as the cause of grass sickness. Development of a vaccine to prevent grass sickness is currently underway but may take several years before it is available.

The **Equine Grass Sickness Fund** (EGSF) is a registered charity based near Edinburgh, which raises funds for research into grass sickness. For the past 17 years it has funded many research projects aimed at finding the cause of the disease and offers advice and support to owners of affected animals. Donations towards research are always welcome.

If you have a grass sickness case please report it to the EGSF and encourage other owners to do the same by using the case form which can be found on their website at www.grassickness.org.uk or by contacting the EGSF on 0131 445 6257.

Grassickness and some thoughts on its prevention

Last year, I lost a 2yr old Irish cross filly from Equine Grass sickness (EGS) despite 4 weeks of intensive nursing. This was the most devastating experience I have had in 40 years of horse-keeping and prompted my involvement in researching and writing this article.

I only wish that someone had done this for me to read before Fleur fell ill and died. I dedicate this to her and hope that it may help to save other equines, perhaps yours...

There are three forms of the disease. Acute cases are invariably fatal and only chronic cases, or sub acute cases that become chronic are treatable. Even so, many of them do not survive. The Royal Dick Veterinary School in Edinburgh has an excellent record of care and research into Equine Grass Sickness, which is also known as Dysautonomia, meaning a mal-function of the autonomic nervous system, particularly that supplying the horse's gut.

Recent evidence suggests that the bacterium *Clostridium botulinum* C/D is the causative organism. It requires an anaerobic environment and this is found both in the soil and in the Gastro Intestinal Tract. The bacterial spores germinate in the GI tract and then the resultant bacteria produce toxins that attack the Autonomic Nervous System. This means that the normal movement of the gut stops and digestion cannot pro-

ceed. The toxin is used in medicine, you will have heard of “Botox”, in small quantities it can be of benefit. In the gut of a susceptible horse, it can be fatal.

The important word there is “susceptible”. There are many instances of only one horse in a herd being affected and prevention of the disease will hinge on avoiding environmental factors and increasing the individual horse’s resistance to the effect of the toxins. There has also been mentioned that fungal toxins could act as a possible causative agent or trigger.

The nutritional status of the horse and the health of the gut is crucial. The anatomy of the gut, in particular the muscle at the entry to the stomach which prevent a horse being sick, means that the quality of a horse’s diet is more important than, say, in ruminants. **Nutrition is all a question of balance, too much can be as bad as too little**

Diet should be optimised for supporting the immune system and this includes giving adequate protein to enable antibody formation. Younger animals are especially prone to EGS, with most cases aged 2 to 7 yrs old, which is the growing stage in a horse’s life. When nutrition is poor, the production of white blood cells, especially B lymphocytes, is reduced and the immune response to a bacterial attack may be inadequate. A further factor could be that a mare in foal who does not receive adequate protein has, herself, a minimal antibody production rate. Since the foal relies on maternal antibodies in its early life, it may be later disadvantaged when there is an invasion of harmful bacteria.

Other nutritional factors may play a part. Like laminitics, many EGS cases are “good doers” and there is a suggestion that there is a mineral lack, especially of Magnesium, which is an important element in active cell biology but is often deficient in soils, especially acidic and sandy ones. Lack of this mineral affects other animals, cattle get “staggers” and it has been linked to laminitis. Mineral licks high in Manganese in the field have been shown to be of value as long as they are not high in sugar.

Environmental factors include the weather. In Spring when grass is subjected to metabolic stress during rapid growth, sudden cold /wet weather can mean reduced concentrations of antioxidants and minerals, making marginal imbalances more critical. Chemicals such as pesticides, insecticides, herbicides and fertilizers also change the natural environment to the detriment of human and animal population.

Some of the changes that occur in grass after artificial nitrogen application mimic many of the normal effects of Spring or autumn Growth spurts, but can exaggerate these beyond the physiological tolerance of the horse.

IS MY HORSE AT RISK?

What risk factors should you be looking for?

Have your grass and soil checked re mineral status and ph levels.

Check your area for lead/iron mining, acidic, sandy and loamy soils.

Iron also locks up minerals in the soil e.g Manganese which is an essential trace nutrient in all life forms.

The use of high nitrogen chemical fertilizer could cause imbalances as well as residues

Check Hay /haylage for mineral status and remember that less antioxidants e.g. beta carotene are available in haylage.

There is little nutritional value in hay over 1 yr old.

The feeding of hay/haylage in spring as well as new grass has been shown to aid protection.

Worming. Do worm counts regularly and check ph levels of droppings.

There is evidence to suggest that wormers affect the gut microflora, and further aggravate an imbalanced system at a high-risk time. The use of probiotics may be beneficial following worming.

Field management – Any soil disturbance especially molehills, worm casts, newly excavated sites and harrowing all put more soil on top thereby increasing *c. botulinum* spore availability. Areas with a high water table that are prone to water-logging especially in erratic weather conditions, have an increased worm activity. Sand and loamy fields are particularly affected as it is easier for the worms to burrow through the soil. Areas where fowl are present also have an increased risk.

Rotting vegetation in drinking water can be a danger.

Stress – reduces mineral availability and balance and effects the microflora and acidity of the gut. This can be induced by weather, travel, growing, training, change of diet, home, field, herd members. Minimize the effects of change to ensure stability.

Microflora & gut acidity - These are affected by change, chemicals, weather, stress, vaccinations ,nutrition. The use of antibiotics alters the microflora, which may increase susceptibility to EGS.

Unlike Botulism, which is caused by the ingestion of preformed toxin from haylage/silage, EGS may occur when spores germinate in the intestinal tract under anaerobic conditions producing toxins. In a susceptible horse symptoms will occur. This could happen in days or weeks. Accurate and speedy diagnosis is crucial and you need to work closely with your vet. A test using phenylephrine eye drops is now available which can be very helpful in confirming a case of EGS.

Further information can be obtained from the EGS fund in Scotland, which has a Web site and discussion forum www.grassickness.org.uk You can also call 01314456257 for information leaflets.

It is very important to report any cases to the EGSF as your vet does not have to do this. Contrary to popular belief, EGS occurs across the whole of the UK, and it helps researchers to track the disease if all known cases are reported.

WHEN DO I NEED TO WORRY?

Peak incidence is in Spring and Autumn. A spell of cool dry weather for more than 10 days especially followed by heavy rain could be a warning sign.

As horse keepers, we need to ask more questions and look to finding answers. We can only do this by sharing information and raising awareness.

There is also a lot of information on the web regarding clostridium diseases and botulism and dysautonomia and www.merckvetmanual.com has useful information regarding nutrition.

Further reading/research.

Equine Nutrition and Feeding, 3rd edition by David Frape, Blackwell Publishing.
Horse Nutrition and Feeding, Sarah Pilliner Blackwell Publishing

Trinity Consultants offer help on the nutritional side, including worming counts and analysis of soil, grass and hay. www.justbespoke.com

The Folklore Practice in Suffolk also do worm counts and herbal preparations, including wormers and probiotics.

Simple System Ltd www.simplesystem.co.uk

Roger at Natural Healing Solutions. www.naturalhealingsolutions.co.uk

Mr Christopher Day. MA VetMB Cert, IAVH VetFFHom. MRCVS

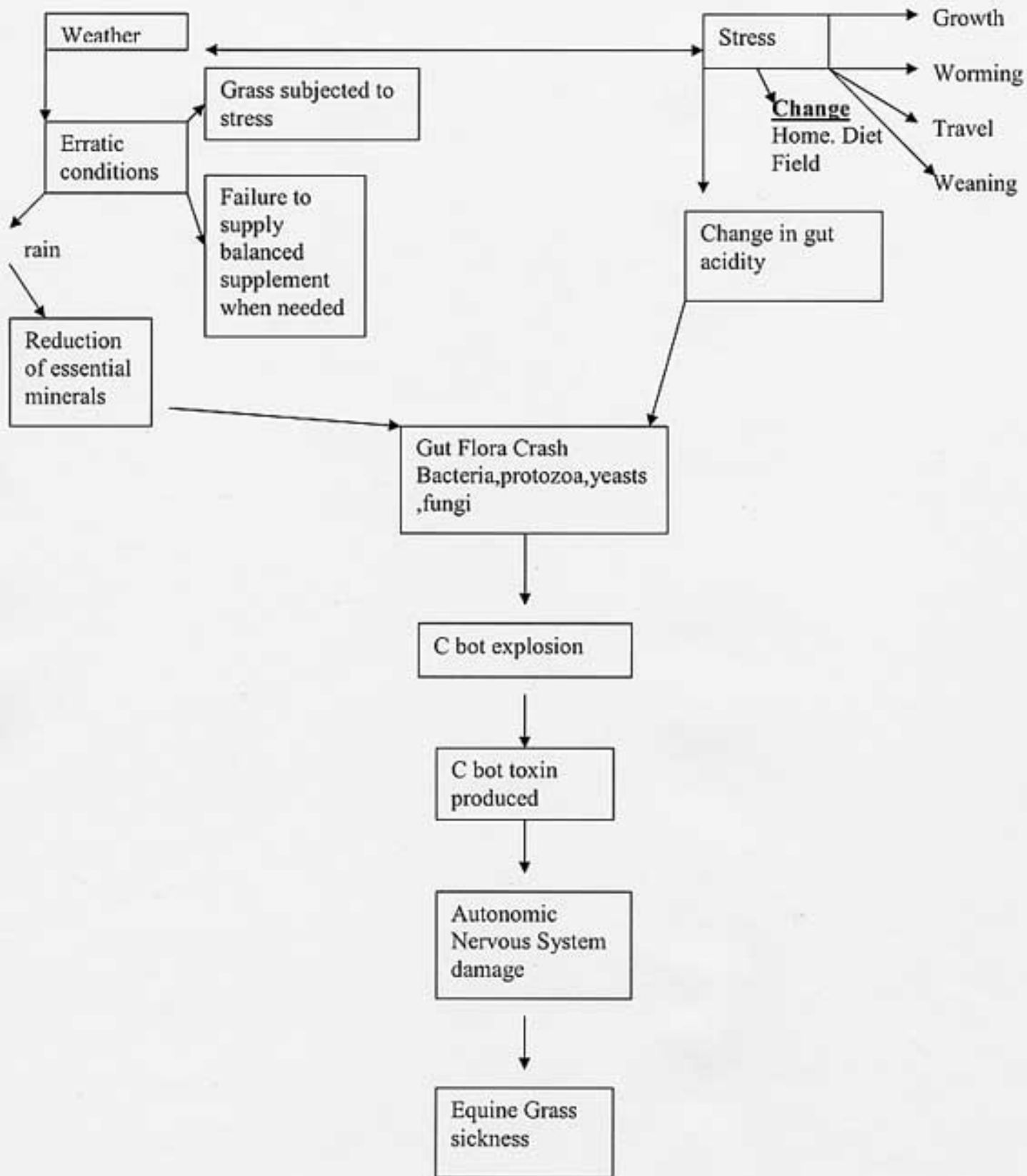
www.alternativevet.org or Tel 01367 710324

Search engine: Google; type in “grass sickness”

Please read Catriona’s input on the EGS site, www.grassickness.org.uk, discussion forum regarding mineral licks and seaweed.

Should you require any further info or wish to share any info I would be pleased to hear from you, contact Gail Dunsbee at mike@dunsbee.freeserve.co.uk

Please be aware that some research is funded by companies that have a commercial interest and, therefore, results may be biased.



This chart is the work of Catriona Rowan from Scotland who prior to 2001 had lost 8 youngsters over 30yrs to Equine Grass sickness