

Equine Grass Sickness Factsheet

Update April 2024

Equine Grass Sickness is a frequently fatal disease characterised by damage to the nervous system of horses, ponies, and donkeys. Although EGS has been reported since the beginning of the 20th century, yet research has failed to identify a specific cause. A vaccine trial has recently been completed and we will discuss the results of that below.

The Cause

Despite decades of research, the cause of EGS has not been confirmed, but the nature of the damage caused suggests toxins are involved. Previous research has looked at poisonous plants, bacterial toxins, insects and viruses. Current research is investigating toxins produced by the soil-borne bacterium *Clostridium botulinum* Type C as the potential cause. Grass sickness does not seem to be transmittable between horses, but is seen more frequently in certain regions, and even certain fields.

Risk Factors

Grazing

EGS is almost exclusively seen in horses at pasture Season. Most cases occur in May, with increased cases between April to July. There is an association between more sun and more frost days.

Movement

Many cases are associated with recent movement to new premises.

Previous occurrence

Many cases occur on premises with cases within the previous two years, although horses grazing pastures when EGS previously diagnosed are thought to be protected. Pasture Sandy loam soils increased risk compared to clay/chalk; pasture disturbance recently associated with increased risk for EGS.

Horses type

Most frequently affects horses aged 2-7 although all ages susceptible and previously reported.

Clinical Signs

EGS affects parts of the nervous system that control involuntary functions. Clinical signs relate mainly to paralysis of the gastro-intestinal tract, producing clinical signs of intestinal paralysis of varying degree. The disease is subdivided into Acute, Sub-acute and chronic form according to clinical signs shown and length of survival.

ACUTE	SUB-ACUTE	CHRONIC
Rapid death within 2-3 days	Death in approx. 7 days	Insidious onset
Difficulty swallowing (dysphagia)	All similar signs to acute form, but less severity	Depression
Nasogastric reflux (severe)		Rapid and severe weight loss leading to emaciation
Increased salivation		Tucked up abdomen
Profound depression and inappetance		“Elephant on a drum” stance (base narrow stance)
Abdominal discomfort (colic)		Slightly high heart rate
Reduced intestinal motility/ileus (no gut sounds)		Moderate difficulty swallowing
High heart rate (may be >80bpm)		Reduced appetite
Muscle fasciculations/tremors		Muscle tremors
Patchy sweating		Patch sweating
Abdominal distension		Dry crusty nose (Rhinitis sicca)
+/- Bilateral ptosis (droopy eyelids)		
Dry rectal mucosa, impaction and small intestinal distension		

How is EGS treated?

EGS can only be definitively diagnosed by identification of specific lesions in nerve cells by taking a biopsy from the small intestine. The tissue is

stained and examined under a microscope to look for characteristic degeneration of nerve cells. This can be performed during colic surgery or to confirm at post-mortem. The majority of EGS cases are diagnosed on the basis of history, clinical signs and ruling out other potential causes. The phenylephrine eye test can provide additional evidence. Phenylephrine is a neuroactive drug that temporarily overcomes the effects of the EGS-damaged nerves supplying the eye and reverse any ptosis or eyelid drooping seen.

Treatment

Prognosis of most EGS cases is incredibly poor. All acute and subacute cases are incurable and should be euthanased on humane grounds. Treatment can be attempted in chronic cases where the horse shows some evidence of gut motility, appetite and low heart rate. Intensive nursing is the mainstay of treatment. Horses need to be fed easily accessible, high calorie palatable food, and stimulated often by grooming, hand walking and human contact. The University of Edinburgh, supported by World Horse Welfare, produced this extremely useful guide on management of chronic EGS available at:

<http://www.grasssickness.org.uk/wpcontent/uploads/2013/10/Grass-sickness-WHW-e-booklet.pdf>

Current Research and the EGS Vaccine Trial

Since 2006, the Animal Health Trust has been monitoring cases of EGS and asking for cases to be reported anonymously. A vaccine trial was undertaken between 2014-18. The trial was completed by AHT in conjunction with the Universities of Edinburgh, Liverpool and Surrey and the Moredun Foundation Grass Sickness Fund. It involved over 1,000 horses and ponies residing on 120 premises across the UK which had been previously affected by a high incidence of EGS cases. The trial aimed to determine the effectiveness of a C. botulinum type C vaccination in preventing EGS, by comparing incidence between groups of vaccinated and placebo-treated horses and ponies.

Unfortunately, the overall incidence of EGS during the four-year field trial was considerably lower than anticipated, with just nine confirmed cases occurring amongst the enrolled horses and ponies over the entire trial period. Compared to the placebo-treated

group, the risk of EGS was not significantly reduced in the vaccine group. Meaning that, unfortunately, the trial failed to provide evidence of an effect of vaccination in the prevention of EGS.

However, consistent with previous research studies, both young animal age and low C. botulinum type C antibody levels were significantly associated with an increased risk of EGS. For the first time, findings from this trial confirmed that low C. botulinum type C antibody levels were found in horses and ponies affected by EGS before the onset of the disease, and the results have highlighted the key role a horse or pony's immune response has in their risk of developing EGS. Therefore, further research to fully explain the nature of the association between C. botulinum type C and EGS would be warranted.

If you are concerned about EGS, please do not hesitate to contact our vets who will be happy to chat to you. For more information please visit:

www.grasssickness.org.uk



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