Development of a nationwide surveillance scheme for equine grass sickness in Great Britain: first year progress

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ABSTRACT

Equine grass sickness (EGS) is recognised as a debilitating and predominantly fatal neurodegenerative gastrointestinal disease affecting grazing horses (Fig. 1). While the cause remains unknown, there is both historical and modern evidence to suggest that it is due to local toxin production within the gut by the bacterium *Clostridium botulinum.* A dedicated nationwide EGS surveillance scheme is necessary to allow accurate quantification of the frequency of the disease, precise mapping of cases over time and space and will assist design and conduct of vaccine trials in high-risk areas. Initial collated results ranging from 1942 to 2007 indicated 905 (49%) cases reported from England, 880 (48%) from Scotland and 59 (3%) from Wales. For each year between 2000 and 2007 total numbers of cases reported were 71, 69, 61, 76, 59, 141, 133 and 138, respectively. For cases where an outcome was indicated, 1137 (82%) cases were fatal and 244 (18%) cases survived.

SURVEILLANCE OBJECTIVES

• Establish and maintain a regularly updated confidential database of British premises affected by EGS (Fig. 2)
• Develop a system for collecting numerator data on numbers of EGS cases
• Collect parallel denominator data on the numbers of horses in Britain through the National Equine Database
• Collect questionnaire data on horses on affected premises
• Generate overall and stratified frequency measures for EGS occurrence in Britain including national, regional, county and premises specific EGS prevalence and incidence figures
• Make use of the data to develop a study protocol for a vaccine field trial

Fig. 1: Common clinical presentation of EGS (Courtesy of Prof. McGorum)
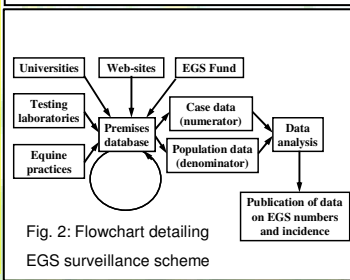

Fig. 2: Flowchart detailing EGS surveillance scheme

METHODOLOGY

Retrospective case information was obtained using data from the Animal Health Trust, the Equine Grass Sickness Fund and the Universities of Edinburgh and Liverpool. A 'new case report' questionnaire was designed to gather information on new cases of EGS occurring in Britain. A 'premises' questionnaires was designed to gather information on the history of EGS on the premises since the year 2000. To raise awareness of the scheme articles were published in the equine lay and veterinary press. A dedicated website with information on the scheme was produced:
www.equinegrasssickness.co.uk

RESULTS

Preliminary data at the end of 2007 consisted of:

• 1844 cases of EGS, occurring between 1942 and 2007
• 905 (49%) of cases were reported from England, 880 (48%) from Scotland and 59 (3%) from Wales (Fig. 3)
• A total of 217 premises reported one or more cases of EGS, with an average occurrence of 2.83 cases on recurrent premises
• For each year between 2000 and 2007 total numbers of cases reported were 71, 69, 61, 76, 59, 141, 133 and 138, respectively
• 1137 (82%) cases died or required euthanasia and 244 (18%) survived

CONCLUSIONS

Care is required in interpreting these preliminary data as they only represent cases submitted to the project collaborators, with no reference to the normal population so far possible. This study aims to develop the established database further to collect both retrospective and prospective information on cases of EGS not previously reported. The success of the scheme relies on participation of the public to maximise case recruitment.
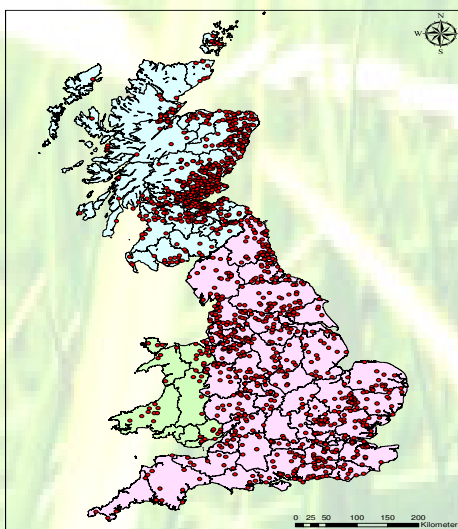

Fig. 3: Sites of reported EGS cases in the United Kingdom (Kindly provided by Dr. Shaw)