

**THE EPIDEMIOLOGY OF EQUINE DYSAUTONOMIA (GRASS SICKNESS) IN THE UK: A COMPARISON OF RESULTS FROM TWO CASE CONTROL STUDIES**

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**ABSTRACT**

Equine dysautonomia (grass sickness) is a usually fatal disease of horses in northern Europe and Patagonia with an unknown aetiology. The disease is associated with acute destruction of the enteric autonomic nervous system. Epidemiological studies have been carried out to determine predisposing factors so that the likely cause can be more closely pin pointed, protective management procedures can be identified and the incidence or annual occurrence can be estimated.

The results from multivariate analysis of a population-based case control study carried out in Scotland in 1971-1972 were compared to those from a matched case-control study carried out in the whole British Isles from 1991 to 1993. In the former, a fifth of all horses in eastern Scotland were recorded as controls. In the latter, two controls were matched to each case, one was on the same premises and the other was on different premises. Both studies obtained information by means of questionnaires completed by owners or veterinary surgeons. Results are expressed as odds ratios (OR) and 95% confidence limits.

The results from both studies were largely consistent. Animals that had recently moved pastures were at particular risk (within 2 weeks compared to more than 3 months, OR = 171, 95% confidence interval (CI) 14.7 - 1990). Risk decreased with length of time on premises. Old horses were at least risk of disease, particularly when they were more than ten years old (more than 10 versus less than 5, OR=0.1, CI 0.03-0.39). A previous occurrence of the disease on the premises markedly increased the likelihood of grass sickness, and this risk increased as the time since the most recent case decreased (within 2 years versus no previous recorded occurrence OR=41, CI 3.1-539). The second study also demonstrated that risk increased with frequency of anthelmintic administration (OR=7.1, CI 1.9-26.9) and that females were at decreased risk compared to males (OR=0.28, CI 0.09-0.84). The first study additionally identified change of premises as an independent risk factor (OR=1.7, CI 1.0-3.1).

The results from the more recent study suggested that some residual confounding had occurred between pasture movement and movement of premises in the first study, due in part to questionnaire design. Both studies demonstrate that if premises grass sickness is most likely to be due to heritage factors, although animal factors also play a major role.

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