Summary

- Laminitis is a painful and debilitating disease of the horse’s foot which can lead to euthanasia on welfare grounds in severe cases.
- Two systematic reviews assessed the best evidence regarding the frequency of, and risk factors, for naturally-occurring laminitis.
- Design of new epidemiological tools assisted the conduct of cohort and nested case-control studies in Great Britain (GB).
- This work should lead to evidence-based recommendations for interventions to prevent and control laminitis, improving equine welfare.

Introduction

- Laminitis is a painful and debilitating disease of the equine foot resulting from insult to the junction between the dermal and epidermal lamellae.
- “Better understanding of epidemiology key requirement in conquering the disease” (2nd International Workshop of Equine Laminitis, 2010)

Systematic reviews with quality appraisal

- Frequency: 10 papers considered most reliable; prevalence estimates 1.5% to 34.0%
- Generally poor quality
- Risk Factors:
  - Six papers considered most reliable; association with increasing age and chronic laminitis
  - Limited in number and scope
  - Reasonable quality
- Conclusions:
  - Need for high-quality evidence-based studies and standardised epidemiological research tools

Completed epidemiological studies

- Active laminitis in horses/ponies in GB
  - Two year (2009–2011) prospective vet practice-level cohort and nested case-control study
  - 50 practices: 48,082 registered horses reported 233 laminitis episodes in 46,814 HYAR
  - Owner-level questionnaires were received for 191 laminitis cases and 819 controls

Current epidemiological studies

- Further investigation of active laminitis in horses/ponies in GB
- Prospective owner-level cohort study
- Modification of epidemiological tools for use by lay people
- Validation of owner-reported clinical data with veterinary diagnosis
- Sample size estimations indicate data required from 5000 HYAR (~3,333 animals over 18 months)
- Web-based system of data collection:
  - www.careaboutlaminitis.org.uk

Discussion

- Standardised epidemiological studies of laminitis will assist future systematic reviews with meta-analysis to provide the highest level of evidence
- Programme of work should enable evidence-based recommendations for interventions to prevent and control laminitis, improving equine welfare

Literature

- Wylie et al. (2013) EVJ, 45 (6), 681-687
- Wylie et al. (2013) Vet J, 196 (1), 57-69

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Laminitis occurs when there is pain within the sensitive structures which bind the distal phalanges to the internal hoof capsule, supporting the weight of the animal

Steps outlining the integration of systematic reviews of available evidence with epidemiological studies of laminitis

- Adoption of evidence-based prevention and control measures
- Design of epidemiological tools
- Publication of new evidence
- Systematic reviews of available evidence
- Veterinary- and owner-based cohort and nested case-control study
- Modification of epidemiological tools
- Owner-based cohort study
- Publication of new evidence

A cohort study of owner-reported laminitis frequency and risk factors, CARE about laminitis, is creating awareness and reporting evidence for the disease.

Flow diagram of the selection process for the two systematic reviews: blue numbers relate to the frequency paper, green numbers to the risk factor paper.

Standardised data collection tools were developed to collect information onactive laminitis (‘Laminitis Reporting Form’, left) and owner-reported risk factors (‘Equine Laminitis/Management Questionnaire’, right).