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Is EOTRH more prevalent in the Icelandic breed compared to Warmblood horses?

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Introduction

Clinical¹, radiographical²⁻³ and histopathological⁴⁻⁵ features of equine odontoclastic tooth resorption and hypercementosis have been well described, demonstrating its progressive and destructive characteristics mainly affecting incisors and canines in the equine population. Clinical symptoms more often only appear in the later, advanced stages of the disease. No other solution than extraction of involved teeth is currently the treatment of choice⁶. Science has not yet been able to elucidate its etiopathogenesis although several hypotheses have been proposed. Prevalence of the disease increases with increasing age and male animals seem to be more affected than female. In most EOTRH studies Thoroughbreds and Warmbloods were overrepresented although a recent study showed also pony breeds to be susceptible for developing the disease⁵. Feedback from several veterinarians referring dental cases to one of the authors, led to the perception that the disease was more widespread in Icelandic horses compared to other horse breeds. The purpose of this epidemiologic study was to investigate the hypothesis that the prevalence of EOTRH in Icelandic horses is higher compared to Warmblood horses.

Material and methods

selection criteria except for traveling time were used for inclusion in the study. Recruitment stopped when two comparable (Icelandic horse, Warmblood) horse populations were examined. A clinical examination of the incisor and canine tooth region was performed by two trained persons (LV and EP) in the not sedated animal. Health information related to these teeth and their surrounding tissues was recorded on custom-made dental record sheets. Clinical symptoms associated with EOTRH included gingival hyperplasia or recession, fistulous tracts, bulbous enlargement of dental structures, tooth mobility and tooth fractures. The presence/absence of a combination of symptoms allowed determining the presumptive diagnosis of EOTRH. Farm management was recorded for each of the horses with respect to feeding and pasture turnout. Preliminary univariate statistical analysis of recorded data was performed in SPSS 25.0 with a significance level set at 0.5.

Results

A total of 236 Warmblood and 221 Icelandic horses spread over 17 horse farms were clinically screened for the presence of clinical symptoms associated with EOTRH in the incisor region. The mean age was not significantly different between both horse populations ($p = 0,578$). Icelandic horses were diagnosed with EOTRH in 13,1% of cases compared to 4,7% in Warmbloods ($p < 0,001$). Based on clinical appearance of the incisor arcade, a further 10,7% of the Icelandic horses were suspected of EOTRH compared to 3,8% in Warmbloods ($p < 0,001$). The vast majority of these cases had not been diagnosed earlier despite dental care provided by a veterinarian or lay dental technician. The mean age ($22,49 \pm 6,03$ y) of EOTRH diagnosed cases was significantly higher than in EOTRH negative horses ($11,68 \pm 5,93$ y) ($p < 0,001$). Although EOTRH was more often diagnosed in male horses (29/40) compared to mares (11/40), this was not significantly different ($p = 0,24$).

Preliminary univariate statistical analysis showed that administering grass silage was associated with a higher incidence of EOTRH, as well as exclusive pasture turnout as housing management.

Conclusions

It was carefully concluded that the Icelandic horse seems more prone to develop EOTRH compared to Warmbloods. Multivariable analysis of the epidemiological data will allow to draw more objective conclusions regarding possible risk factors for the development of EOTRH. An important limitation of this study is that diagnosis is based on clinical symptoms only and not supported by radiography and/or histology.

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