

Lack of association between low vitamin E levels and retention secundinarum in Belgian Draught Horses (BDH) and Warmblood (WB) mares

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Introduction

In the Belgian Draught Horse (BDH) population, a high prevalence of retained placenta (RP) has been reported (Vandeplasseche et al. 1972). In cattle, low serum vitamin E serum levels were shown to play a role in the pathogenesis of RP (Leblanc et al. 2002). The objective of this study was to evaluate whether a similar association could be observed in BDH mares.

Methods

Blood samples were collected from 10 BDH mares and 9 Warm Blood (WB) mares, foaling without any complications. All mares were housed in boxes for at least one month before foaling and were without known history of RP. They were fed with grass silage and hay and WB mares were supplemented with concentrates. All mares foaled between March 1st and the 1st of May. Blood samples were obtained from the jugular vein within 1 h of foaling (Vacutainer Systems; Becton Dickinson & Co, Franklin Lakes, NY, USA) and were centrifuged at 2000g. Serum was stored at -18°C to be processed for α tocopherol (high performance liquid chromatography, HPLC). The mares were diagnosed as suffering from hypovitaminosis when serum levels were below 3 mg/ml vitamin E. RP was defined as the failure to expel all or a part of the foetal membranes within 3h after delivery of the foal (Sevinga et al. 2002). Statistic analysis was done using the Mann-Whitney U test.

Results

Only two out of ten BDH mares and none of the WB mares had low vitamin E levels. Five mares out of the ten BDH suffered from RP (50%), only one of them having a slightly lowered serum vitamin E concentration (2.3 mg/ml). In the WB group 30% (3/9) suffered from RP, but all WB mares had sufficient serum vitamin E concentrations.

Conclusions

The absence of significant differences in blood vitamin E concentration between the RP mares and mares that expelled the placenta in time is different from the findings in cattle (Leblanc et al. 2002). Possible explanations might be the limited numbers of mares included, breed differences, species differences and/or the timing of blood sampling.

References

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