BLOOD LACTATE CONCENTRATION AS A PROGNOSTIC FACTOR IN COWS WITH ABOMASAL DISORDERS: A FIELD STUDY

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Abomasal disorders are commonly seen in dairy cows. Among abomasal disorders, abomasal volvulus can lead to death or non productive animals despite therapeutic attempts. Blood lactate concentration (Lac) has been assessed as a prognostic factor for various diseases in veterinary medicine especially in dogs with gastric volvulus or horses with colic. Recently, a hospital based study reported that Lac was useful to determine the prognosis in cows with abomasal disorders. The aim of this study was to assess the prognostic value of Lac with a portable lactate-meter (Lactate Pro™, Arkray KDK Corporation, Kyoto, Japan) in a field setting. Cows studied were client owned Holstein seen in the ambulatory clinic with a final surgical diagnosis of left displaced abomasum (LDA), abomasal dilation (AD) or abomasal volvulus (AV). The Lac was assessed immediately after coccygeal vessel puncture before treatments were started. The clinician was blind to the Lac value which was recorded by a student or the producer to avoid any bias. The producers were then contacted 7 days and 30 days after the cow was treated in order to assess the final outcome of the cow (survival, appetite and milk production). The outcome was then classified as negative (NO: if the cow died or owner not satisfied) or positive (PO: outcome that satisfied the producer) on day 7 and 30. A total of 128 cows were included in the study: 89 cows with a LDA, 20 cows with AD and 19 cows with AV. The cows with AD and AV were grouped for further analysis (DV group mmol/L). The cows with a LDA had lower median Lac (0.79 mmol/L) than DV group (0.90 mmol/L) (P=0.03). Positive outcome was not different on day 7 (LDA: 87.2%; DV: 78.9% (P=0.28)) but were more frequent for LDA group (94.2%) than for DV group (82.1% (P=0.048)) on day 30. The Lac was not different depending on the outcome in LDA group (P=0.16) but there was a tendency in the DV group for animals with a NO for a higher Lac (1.95 mmol/L) than cows with a PO (0.85 mmol/L) (P=0.10). This is the first field study concerning the potential value of Lac as a prognostic factor in cows with abomasal disorders. The higher than expected prognosis for cows with DV than previously reported could explain the absence of correlation between these parameters although the tendency that was observed warrant further studies.