Assessment of TNF-α and leptin gene expression by RT-PCR in blood of cows with left abomasal displacement

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Summary

The aims of this study are to evaluate the TNF-α and leptin gene expression in blood from Holstein cows with left abomasal displacement and to correlate it with induced liver injury. The TNF-α and leptin expression in blood samples was determined by RT-PCR after normalisation using the constant expression of the housekeeping GAPDH gene in cows with left abomasal displacement (LAD) (n = 20) before surgery and 7 days after as well as in healthy controls (n = 10). Plasma hepatic enzyme (AST: aspartate aminotransferase, ALT: alanine aminotransferase and ALP: alkaline phosphatase) activities were measured in parallel. Plasma AST and ALP activities dramatically increased in diseased cows during the preoperative period and then declined. Although not significantly, the leptin expression tended to decrease in LAD affected cows while the TNF-α expression tended to increase during the postoperative period. These results suggest that TNF-α may be associated with liver damage during abomasal displacement and that leptin was inversely correlated.

Key words: Cow, TNF-α, leptin, left abomasal displacement, RT-PCR, liver enzymes.