PLASMA AND PERITONEAL CREATININE KINASE VS LACTATE CONCENTRATIONS IN HORSES WITH SMALL INTESTINAL COLIC

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Introduction: Elevated peritoneal creatine kinase (CK) levels have been described as sensitive predictive indicator of strangulating intestinal lesions in horses with colic, while peritoneal lactate appeared to be a more specific marker (Kilcoyne *et al.*,2018). Aim of this study was to determine the ability of plasma and peritoneal CK versus lactate levels to predict the presence of strangulating lesions and survival in horses admitted with small intestinal (SI) colic.

Methods: Blood lactate, serum CK, peritoneal lactate and CK levels were measured in 40 horses with strangulating (SSIL) and 35 horses with non-strangulating SI lesions (NSSIL). Data were analyzed with nonparametric statistics (Mann–WhitneyUtest) and ROC curves were established for identification of cutoff values and calculation of Youden's index.

Results: Thirty-five horses survived to discharge, 30 horses were euthanized for medical reasons and in 10 horses treatment was declined. Peritoneal lactate, serum and peritoneal CK were significantly increased in horses with SSIL versus NSSIL (p=0.003,p=0.001,p<0.001,respectively). Median peritoneal lactate, serum and peritoneal CK were 5.98 (range 1.00-23.0) mmol/l, 624 (100-8770) IU/l, 611 (61-7950) IU/I within the group of SSIL and 3.60 (0.88-16.9) mmol/I, 331 (125-1262) IU/I, 333 (30-3208) IU/I within the group of NSSIL, respectively. Blood and peritoneal lactate, serum and peritoneal CK were significantly higher in non-surviving horses versus horses surviving to discharge (p=0.001,p<0.001,p=0.026, p=0.017,respectively). A peritoneal CK value of >378 IU/I predicted a SSIL (73.7%sensitivity;70.6%specificity) compared to a peritoneal lactate value of >3.89 mmol/l (73.7% sensitivity;60.0% specificity). A peritoneal CK value of >399 IU/I predicted non-survival (66.7% sensitivity; 62.9% specificity) compared to a peritoneal lactate value of >5.98 mmol/l (62.1%sensitivity;85.3%specificity).

Discussion and Clinical Relevance: Determination of peritoneal CK values can be used as adjunctive diagnostic parameter for prediction of SSIL and survival but lacks sensitivity and specificity as solely diagnostic parameter.

Keywords: CK – EQUINE– SMALL INTESTINE - STRANGULATION