Evaluation of alterations in mean platelet volume in dogs with pancreatitis

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OBJECTIVES

To evaluate mean platelet volume (MPV), an indicator of platelet activation and aggregation, in dogs with pancreatitis.

METHODS

Dogs with pancreatitis (acute or chronic) or inflammatory bowel disease (IBD) and healthy controls were identified retrospectively within the hospital database. The MPV, measured using the ADVIA 2120 (Siemens), was documented in each case. A diagnosis of pancreatitis was based upon presence of consistent clinical signs (vomiting, inappetence or cranial abdominal discomfort) combined with canine pancreatic lipase concentration

≥ 400 $\mu\text{g/L}$ or abdominal ultrasonographic findings supportive of pancreatitis, or both. Cases were excluded if concurrent immune-mediated thrombocytopenia, immune-mediated haemolytic anaemia or thromboembolic disease was diagnosed. Showing non-parametric data distribution, the results are reported as median (interquartile range) and Kruskal-Wallis ANOVA with Dunn post-test used to compare groups.

RESULTS

In 52 dogs with pancreatitis and 42 dogs with IBD, the MPV (13.7fL (11.9–15.4)) and (12.2fL (10.9–13.9)) were significantly higher compared to 79 healthy controls (11.2fL (10.0–12.2)) and ($p < 0.0001$ and $p = 0.0104$, respectively). However, there was no significant difference between pancreatitis and IBD groups ($p = 0.074$). When comparing pancreatitis and healthy groups, an optimal cut-off of 13.65fL yielded a sensitivity and specificity of 53.8% and 91.1% respectively; the area under ROC curve (AUC) was 0.795. When pancreatitis and IBD groups were compared, a cut-off value of 13.5fL yielded a sensitivity and specificity of 53.5% and 73.8%, respectively; the AUC was 0.639.

STATEMENT (CONCLUSIONS)

MPV is higher in dogs with pancreatitis compared to healthy controls; however, the extensive overlap between dogs with pancreatitis and gastrointestinal disease limits its diagnostic value in dogs.