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Relationship between Immature Platelet Fraction, C-Reactive Protein and iron status in thrombocytopenic dogs: a preliminary study

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ESVCP/ECVCP POSTER FLASH
Topic: Hematology

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Background:
Thrombocytopenia is a common haematological abnormality in dogs and may arise from heterogeneous aetiologies, including immune-mediated diseases, infectious agents, neoplasia and bone marrow disorders. The immature platelet fraction (IPF) reflects bone marrow platelet production, whereas C-reactive protein (CRP) and serum iron are indicators of systemic inflammation and iron metabolism. However, the relationship between platelet regenerative response, inflammatory status and iron homeostasis in canine thrombocytopenia remains unclear.

This study aimed to investigate the association between IPF, CRP, and serum iron in thrombocytopenic dogs and evaluate whether IPF stratification using a cut-off is associated with different inflammatory and iron profiles.

Materials & Methods:
Eighty-five thrombocytopenic dogs, confirmed by peripheral blood smear examination, were included. IPF, CRP and serum iron values were recorded. Dogs were further stratified into two groups based on IPF values (≤6.9% and >6.9%) and statistical analyses were conducted.

Results:
No significant correlation was identified between IPF and CRP or serum iron in the overall population or within stratified groups. A significant inverse correlation was observed between CRP and serum iron in the overall cohort and in both IPF subgroups.

Conclusion:
In thrombocytopenic dogs, IPF does not appear to be associated with systemic inflammatory status or iron levels, suggesting platelet regenerative activity is probably independent of these pathways. Conversely, the inverse relationship between CRP and serum iron confirms the expected link between inflammation and iron sequestration. Further studies are warranted to determine whether these associations may differ when thrombocytopenic dogs are categorized according to the underlying aetiology.