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Nucleated Erythrocytes and Anemia in Dogs with Systemic Inflammatory Response Syndrome: Could They Affect Outcome? (Abstract HM09)

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During Systemic Inflammatory Response Syndrome (SIRS) a release of inflammatory mediators occurs and hematological modifications are common. The study's aim was to evaluate anemia and nucleated RBC (NRBCs) in canine SIRS compared to the severity of illness and outcome.

This retrospective study included the following dogs: 90 with SIRS, 50 healthy, 50 with chronic diseases. SIRS grading was based on how many criteria were fulfilled. APPLE_{fast} score was allocated in SIRS dogs. Mortality rate was assessed at 7 and 15 days after admission. Hemolytic or hemorrhagic disorders were excluded. SIRS grading and APPLE_{fast} score groups were compared to the outcome. Types of anemia and NRBCs counts were evaluated in three study populations and to the outcome.

APPLE_{fast} scores >25 (p=0.03) and SIRS grading >2 (p=0.001) were associated with poor outcome. In SIRS group, anemia was present in 56/90 dogs. The most frequent types of anemia were mild (45%) or moderate (43%), microcytic (55%) or normocytic (41%), and normochromic (93%). Anemia and its severity were associated with poor outcome (p=0.0197). SIRS group showed worse anemia patterns than the other two groups (p<0.001). The presence of NRBCs occurred in 22/90 of SIRS dogs and was associated with poor outcome (p=0.005). NRBCs count were significantly higher in the SIRS group than healthy dogs (p=0.0007).

Mild-moderate, micro-normocytic normochromic anemia is a frequent finding in canine SIRS. Our results suggest that circulating NRBCs and their amount could be an additional negative prognostic value.