Preliminary investigation of haematological and biochemical parameters as prognostic markers in dogs with severe inflammation

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Nowadays, the search for reliable prognostic markers in dogs with diseases causing severe systemic inflammation is widely issued. In fact, an early diagnosis would allow a better therapeutic management and a direct communication between the clinician and the owner about the patient's outcome.

The aim of this study was to evaluate the possible role of basic haematological and biochemical parameters, in addition to inflammatory markers, such as C-Reactive Protein (CRP) and Paraoxonase-1 (PON-1), as prognostic markers in dogs with severe inflammation, regardless of the underlying disease.

In this retrospective study, 24 dogs with a definitive diagnosis and a known outcome were enrolled; the presence of systemic clinical signs related to inflammation and the availability of blood smears, haematological and biochemical data were necessary, whereas dogs with the absence of the aforementioned criteria and the diagnosis of neoplasia were excluded.

Definitive diagnosis of this study included pyometra (4), pancreatitis (3), pneumonia (3) and other diseases with 2 or less cases (e.g. parvovirosis, cholecystitis).

Results obtained after dichotomization of numerical data in two groups (survivors *vs* non-survivors) were compared to each other using a non-parametric *t*-test for independent samples (*U* Mann Whitney test).

Although non-regenerative anaemia was the most common haematological finding (58% of the caseload) it hasn't been correlated with the outcome in this study.

Three parameters were statistically related to the outcome: white blood cell (WBC) count (median value in survivors 28,20 *vs* 15,34 x $10^{3}/\mu L$; $P = 0.033$), glucose (median value in survivors 119 *vs* 96 mg/dL in non survivors; $P = 0.031$) and urea (median value in survivors 57 *vs* 31 mg/dL in non survivors; $P = 0.028$) with higher values in the survivors group.

In the present study, CRP and PON-1 lacked difference in terms of statistical significance, median values and data distribution according to the outcome.

Further studies on a wider and less heterogeneous caseload in terms of underlying disease and therapeutic management would allow to better define the prognostic value of the evidenced parameters.