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COMPARISON OF LABORATORY ACUTE PHASE MARKERS IN CANINE BABESIOSIS

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Introduction

Babesiosis is the disease that, like human falciparum malaria, can be classified as "protozoal sepsis". Although haemolytic anaemia is the hallmark of babesiosis, the clinical presentation is highly variable. The many and varied clinical manifestations of canine babesiosis are difficult to relate to an organism that is solely restricted to the erythrocyte. It is likely that the inflammatory mechanisms in this disease are similar to those of other septic conditions that lead to SIRS and MODS.

Aim

This study was designed to test whether sequential measurement of acute phase proteins would prove valuable in assessing response to antibabesial treatment and to compare the acute phase proteins with commonly used inflammatory markers such as erythrocyte sedimentation rate, WBC count, neutrophil to lymphocyte ratio and platelet count.

Materials and Methods

In this study, serum concentrations of C- reactive protein, haptoglobin and serum amyloyd A and the presence of SIRS were investigated in fifty dogs naturally infected with B. canis before and 1st, 2nd, 3rd, 4th and 7th day after the antibabesial treatment in order to document acute phase reaction and its potential value in the diagnosis and monitoring of the disease.

Results

Table 1 - Laboratory acute phase markers in control group

	Control
CRP	5,7±0,82
HPT	8,15±6,66
WBC	8,75±1,39
ESR	1,00±0,78
SAA	2,61±4,44
Ratio	2,82±0,44
PLT	397,0±45,41

Table 2 - Laboratory acute phase markers in canine babesiosis before and 1st, 2nd, 3rd, 4th and 7th day after the antibabesial treatment

	Before	1st day	2nd day	3rd day	4th day	7th day
CRP	173,14±57,59	153,5±57,64	87,19±40,93	53,32±32,28	33,82±30,36	14,23±12,7
HPT	29,31±22,29	60,17±47,01	79,75±55,28	83,05±50,03	81,76±59,34	50,46±46,2
WBC	6,68±2,95	3304±3629	1678±2036	877±1433	447±597	79±69
ESR	28,36±28,36	11,56±4,58	13,12±4,03	11,9±2,87	11,81±2,61	11,41±3,37
SAA	2819±4596	20,09±20,86	13,10±19,29	9,09±14,66	7,36±11,92	3,86±5,95
Ratio	4,02±4,13	1,56±1,14	0,97±0,67	1,3±0,57	1,5±0,63	2,54±2,09
PLT	16,5±12,34	18,09±11,46	30,73±15,03	75,95±43,99	124,5±69,18	223,4±78,03

Conclusions

These results indicate that the parasite induces marked acute phase response in the host.
The results of this study support the idea that sequential measurement of C-reactive protein and serum amyloid A concentrations could be used to monitor the clinical course of the disease and its response to treatment. Such measurements are likely to be more objective than clinical observations and standard hematology and biochemistry.