

## AN UPDATE ON ACUTE PHASE PROTEINS IN DOGS: ADVANCES IN MEASUREMENT ASSAYS AND CLINICAL APPLICATION

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Acute phase proteins are part of a non-specific inflammatory reaction of the host that occurs shortly after any tissue injury. Origin of the response can be attributed to infective, immunologic, neoplastic, traumatic, parasitic or other causes. Dogs have some particularities in the acute phase protein response compared with other species such as ruminants that should be taken in consideration; for example higher concentrations of haptoglobin in healthy animals which require larger sample dilutions with spectrophotometric methods or a very high response of CRP.

In this presentation, recent advances in the application of acute phase proteins in dogs will be review and discussed with special emphasis in some topics such as:

- Development of new assays. New sensitive assays have been specifically developed for canine CRP and haptoglobin based on Time Resolved Fluorometry. This technique has allowed measurements of these proteins in canine effusions and the differentiation between exudates and transudates as well as the use of whole blood and saliva as alternative specimens to serum or plasma.
- APPs response in different inflammatory diseases. Increased concentrations of different APPs were detected in a number of diseases involving inflammation such as polyarthritis, infectious diseases (parvovirus infection, leptospirosis, leishmaniasis, babesiosis), inflammatory bowel disease and in tumours.  
Haptoglobin in dogs is also raised in case of increased levels of endogenous (hyperadrenocorticism) or exogenous (anti-inflammatory treatments) corticosteroids.
- Use of APPs indexes for treatment monitoring. Measurement of concentration of selected acute-phase proteins can be used to evaluate the response to treatment of dogs with different specific diseases such as leishmaniasis, inflammatory bowel disease, hyperadrenocorticism or selected neoplasias. However it seems that the use of APPs indexes based in the use of various positive (CRP, SAA or Hp) or negative (albumin) acute phase proteins could improve the sensitivity of APPs when monitoring treatment.

It is expected that in the near future the development of cheaper automated assays for determination of main APPs and the increase in the number of experimental studies about APPs response and evolution after treatment in different diseases will contribute to a wider use of these proteins as biomarkers of infection and inflammatory lesions and their inclusion in the routine biochemical profiles in canine species.

### References

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