

# Serum acute phase proteins in dogs with heartworm disease (*Dirofilaria immitis*) before and after adulticide treatment

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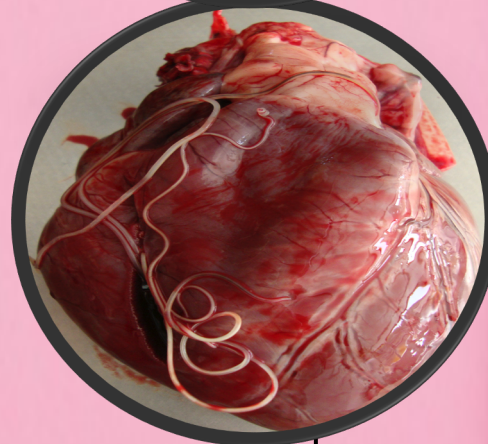
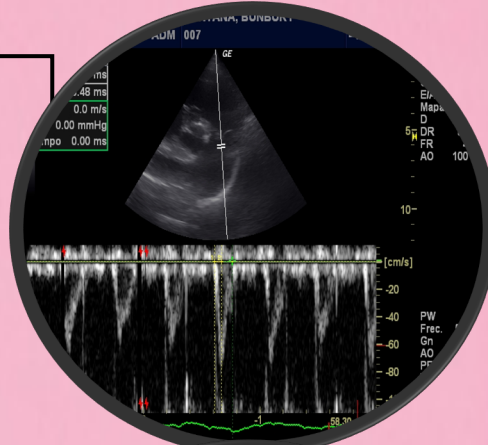
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## INTRODUCTION

Pulmonary hypertension (PH) is one of the most serious complications in dogs with heartworm (HW). An acute phase response and the utility of acute phase proteins (APP) as early biomarkers of PH have been demonstrated in infected dogs<sup>1,2</sup>. Since PH seems to persist in dogs up to 10 months after the end of adulticide treatment<sup>3</sup>, the aim was to evaluate serum concentrations of positive APP [C-reactive protein (CRP), haptoglobin and ferritin] and negative APP [albumin and paraoxonase-1 (PON-1)] to assess their utility as diagnostic biomarkers of PH and its progression throughout adulticide treatment.

## MATERIALS AND METHODS

25 HW-infected dogs were subjected to adulticide treatment<sup>4</sup>. On days 0, 90 (end of treatment) and 270 (6 months after completion), the presence/absence of PH was echocardiographically determined using the Right Pulmonary Artery Distensibility Index (RPAD Index), and serum concentrations of APP were determined.



## RESULTS AND CONCLUSIONS

PH was present in 44%, 44% and 48% of the dogs on days 0, 90 and 270 respectively. On days 0 and 90 all APP but haptoglobin (day 0) and albumin (day 90) differed significantly from the reference values, while the alterations in Ferritin and PON-1 persisted on day 270. Only CRP showed significant different concentrations on day 0, 90 and 270 between dogs with/without PH, although on day 270 concentrations were within the reference values. There may still be a persistent damage at the vascular level 6 months after the patient is discharged, regardless of the presence or absence of PH, while the presence of PH could be a consequence in those dogs with more severe endarteritis. The results confirm that HW disease has a strong inflammatory component that seems to persist for at least 6 months after discharge, whether or not there is presence of PH.