Systemic inflammatory response syndrome (SIRS) is the body's exaggerated response to an insult (e.g., infection, burns, trauma, surgery, neoplasia) that causes release of inflammatory mediators. SIRS is associated with high mortality, thus biomarkers with good diagnostic and prognostic value are desired. Extensive data on the usefulness of biomarkers of SIRS in veterinary medicine are lacking. The purpose of this study was to investigate the diagnostic and prognostic value of plasma iron compared with the acute phase proteins albumin, C-reactive protein (CRP), and fibrinogen over time in dogs with SIRS. This was a prospective observational study of 116 dogs (54 with SIRS or sepsis, 42 with focal inflammation, and 20 controls). Although admission values for these variables did not predict survival in SIRS/sepsis, the magnitude of increase in iron and decrease in CRP from admission to discharge was higher in survivors. The authors conclude that low plasma iron is a sensitive marker of systemic inflammation in dogs, and an increase in iron concentration during hospitalization is associated with a better prognosis. Monitoring plasma iron in conjunction with CRP and albumin might be useful in monitoring dogs with inflammatory disease processes.

**Global Commentary**

In human medicine, septic patients have been documented to have low iron levels. This veterinary study was useful in evaluating a helpful parameter—iron levels—in dogs with SIRS. Unfortunately, measurement of C-reactive protein and fibrinogen are not readily available to veterinarians; that said, iron levels may be less expensive and more available to the general practitioner. A limitation of this study was the infrequency in which iron levels were measured (ie, every 2 days); it would have been beneficial to have more data points to better assess the utility of iron measurements in helping to monitor treatment response and improvement in SIRS in critically ill canine patients. Another limitation of this study was that hypoferremia levels may be caused by anemia; therefore, PCV or HCT should have been evaluated in relation to iron levels in this study. Because many critically ill patients are anemic, this may have skewed the interpretation of iron levels and overall outcome.—Justine A. Lee, DVM, DACVECC, DABT

**Source**


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