Assessment of Serum Amyloid A (SAA) Testing and Its Clinical Application in a Specialized Equine Practice

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Serum Amyloid A (SAA) has been identified as a major acute-phase protein in the equine species. The use of SAA may allow for a more accurate assessment of the response to therapy in patients with various infectious diseases relative to the more traditional markers of inflammation or infection, such as total white blood cell count, fibrinogen, and albumin to globulin ratio. Authors’ addresses: Mid-Atlantic Equine Medical Center, 40 Frontage Road, PO Box 188, Ringoes, NJ 08551 (Belgrave); Division of Comparative Pathology, Department of Pathology, University of Miami Miller School of Medicine, PO Box 016960 (R-46), Miami, FL 33101 (Dickey and Cray); and Department of Epidemiology and Public Health, University of Miami Miller School of Medicine, PO Box 016960 R-669, Miami, FL 33101 (Arheart); e-mail: rbelgrave@yahoo.com. *Corresponding author. © 2011 AAEP.

1. Introduction
Serum Amyloid A (SAA) has been determined to be a major acute-phase protein in the equine species.1

2. Materials and Methods
SAA was quantitated using an automated assay2 and compared with the traditional assessments of inflammation and infection, including total white blood cell (WBC) count, fibrinogen, and serum protein electrophoresis in both healthy and clinically ill animals.

3. Results
Significant differences were observed in SAA, albumin to globulin (A:G) ratio, and total WBC count. Marked variation was present in mean SAA levels in abnormal horses, whereas only mild variation was present in the mean A:G ratio, total WBC count, and fibrinogen. Poor correlation was observed between SAA and WBC count and between SAA and fibrinogen. Repeated measures in clinically ill animals showed a smoother, gradual return to normal levels versus fibrinogen.

Discussion
SAA was the analyte consistently increased in all abnormal horses, reflecting its valuable information regarding the clinical state of the patient. The marked variation in SAA levels in clinically ill horses and rapid decrease in elevated levels seen in response to successful therapy may allow SAA to be more useful as a monitoring tool and prognostic indicator than traditional markers of inflammation.

References