

Vet Clin Pathol. 2005 Dec;34(4):383-8.

## **Temporal effects of 3 commonly used anticoagulants on hematologic and biochemical variables in blood samples from macaws and Burmese pythons.**

Harr KE, Raskin RE, Heard DJ.

### **Source**

Department of Physiological Sciences, College of Veterinary Medicine, University of Florida, Gainesville, FL, USA. harrk@mail.vetmed.ufl.edu

### **Abstract**

#### **BACKGROUND:**

Few studies have been done to evaluate anticoagulants for use with blood samples from birds and reptiles. Heparin currently is the most commonly used anticoagulant in practice, but may adversely affect blood cell staining and quantitation.

#### **OBJECTIVE:**

The purpose of this study was to evaluate the effects of lithium heparin, K3-EDTA, and sodium citrate, with and without the addition of albumin, on hematologic variables in macaw (*Ara sp*) and python (*Python molurus bivittatus*) blood samples.

#### **METHODS:**

Blood samples from 10 macaws and 10 Burmese pythons were collected in heparin-coated syringes and placed into tubes containing either lithium heparin, K3-EDTA, or sodium citrate with and without the addition of 0.25 mL of a 22% bovine serum albumin solution. Cell lysis was determined by counting the number of lysed cells/200 WBCs in Wright's-Giemsa-stained blood smears and by qualitative evaluation of pink plasma in microhematocrit tubes. A CBC was done after 3, 12, and 24 hours of storage at 4 degrees C in anticoagulant-containing tubes and results were compared with those obtained at 0 hour for the heparin-coated syringe sample. A biochemical panel also was done at each time point in similarly stored lithium-heparin samples.

#### **RESULTS:**

Hemolysis was significantly increased in citrated samples from both macaws and pythons beginning at 12 hours. At 24 hours, 19 of 30 (63%) macaw samples in all anticoagulants had >100 lysed cells/200 WBCs. There were no significant differences in hematologic values in samples from pythons collected in heparin or EDTA at any time point. No significant differences were found in the number of lysed cells or in other hematologic data in samples with albumin. Glucose concentration decreased and potassium concentration increased significantly over time in heparinized blood samples.

#### **CONCLUSIONS:**

Based on the results of this study, whole blood samples anticoagulated with lithium heparin or EDTA should be evaluated within 12 hours (macaws) or 24 hours (pythons) of collection and stored at 4 degrees C for best results. Citrate should be avoided as it may result in increased cell lysis. The addition of albumin does not prevent cell lysis.

PMID: 16270264 [PubMed - indexed for MEDLINE]