

**TACLS Scientific Poster Competition: Information & Guidelines**

**Sample Abstract - Research**

**A Comparison of Reticulocyte Results Utilizing Two Different Flow Cytometers and the Manual Miller Disc**

**Shirlyn B. McKenzie, PhD, MLS(ASCP)SH**

Cheryl Burns, MS, MLS(ASCP)

UT Health Science Center-San Antonio

San Antonio, TX

Reticulocytes were analyzed using two different methods of analysis, flow cytometric and manual with Miller disc. Comparison was made between results of two different flow cytometers and the manual method. Each method was also tested for precision. Samples were held for up to 48 hours at 4oC and retested by the flow cytometers to estimate stability of the specimens. All samples were whole blood specimens collected in EDTA anticoagulant from hospitalized patients. Sixty specimens were tested on the FACScan in replicate within four hours of collection. A random sample (43) of these specimens was selected and tested in replicate within four hours by the manual method. Flow cytometer specimens were refrigerated and retested at intervals up to 30 hours on the FACScan. The procedure was repeated with a new sample of 60 specimens utilizing the Coulter Epics. These specimens were retested at intervals up to 48 hours. Another sample (60) was collected and tested on both the FACScan and Coulter Epics. Analysis by the t-test revealed no statistical differences between replicates indicating all methods were acceptably precise but the flow cytometers were more precise than the manual method. Comparison between methods showed low correlation between the manual method and the FACScan (r = .664) but higher correlation between the manual method and the Coulter Epics (r = .813) and between the two flow cytometers (r = .977). The flow cytometers gave consistently higher results than the manual methods. Analysis over time revealed that there was significant statistical difference in results after 8 hours. The flow cytometers provide a precise analysis of reticulocytes that may translate into a more effective use of the reticulocyte count in monitoring erythropoietic activity following therapy or bone marrow transplant. Since the reticulocyte count is relatively stable, samples can be batched for analysis making this a time-saving method.

**Sample Abstract - Clinical Case Study**

**An Unusual Transformation of Hairy Cell Leukemia**

**Cheryl Burns, MS, MLS(ASCP)**

UT Health Science Center-San Antonio

San Antonio, TX

Hairy cell leukemia (HCL) is a malignant lymphoid neoplasm which represents approximately 2% of all adult leukemias. The presenting features of this disorder are splenomegaly, pancytopenia, and the presence of the typical hairy cells in the peripheral blood and bone marrow. Patients treated by splenectomy have a median survival of approximately 7 years. A small number of patients will undergo a transformation to a high-grade malignant lymphoma. These two cases represent this transformation. At initial diagnosis, both patients displayed the typical features of hairy cell leukemia and were treated by splenectomy. Each patient had remained in remission for approximately 10 years. In the first patient, a 54-year-old male, the transformation to high-grade lymphoma was revealed in a biopsy of a hepatic flexure mass. In the second patient, a 62-year-old male, the transformation was revealed in a biopsy of a lymph node. The malignant lymphoma cells in both cases were characterized by morphologic and immunologic examination. However, the bone marrow for both patients demonstrated only relapse of the hairy cell leukemia.