stab cells, metamyelocytes and myelocytes, and necrotic neutrophils (due to improper specimen storage).

**Conclusion:** In this study, four specific areas on the scattergraphs of the Abbott Cell Dyn Ruby analyzer were identified and used to improve detection of blast cells, stab cells, metamyelocytes and myelocytes, and necrotic neutrophils in peripheral blood.

**NQO1 559 C>T Polymorphism in Histiocytic Sarcoma**

Ciara Wisecup, 1 Maryam Sadehgi, MD, 2 Mojgan Nassiri, MD, 3 and Alireza Torabi, 4 Texas Tech University, 2 Michigan State University, 1 Tehran University, and 4 Yosemite Pathology Group

**Objectives:** Histiocytic sarcoma (HS) is a rare disease of non-Langerhans histiocytes derived from the monocyte macrophage lineage of unknown cause. HS generally appears as extranodal tumors of either sporadic etiology or clonally from other hematologic malignancies. A 29-year-old female presented with an 8-month history of a growing mass of the right upper thigh with underlying skin thickening measuring 15 cm in the greatest dimension. Needle core biopsy of the mass showed neoplastic and infiltrating tumor cells with foci of necrosis. Tumor cells were positive for CD68, CD2, CD4, CD45, CD43, CD99, CD30, and vimentin, and the diagnosis of histiocytic sarcoma was made. A whole-exome sequencing was performed.

**Methods:** Whole-exome sequencing was performed by the Beijing Genomics Institute (BGI) for both single-nucleotide polymorphism and insertion/deletion mutations, and the raw data were sent to Minerva Genetics for interpretation.

**Results:** Exome sequencing identified NQO1 559 C>T mutation that would result in a proline to serine substitution in the protein.

**Conclusion:** NAD(P)H quinone oxidoreductase 1 enzyme (NQO1), encoded by the NQO1 gene located on 16q22.1, is a protein that participates in detoxification via quinolone reduction to hydroquinone by two-electron reduction with a preference for short-chain quinones. NQO1 enzyme has been specifically implicated in the detoxifying reduction of vitamins K1, K2, and K3 to produce a cofactor hydroquinone for gamma carboxylation and activation of glutamic acid residues for blood clotting and metabolism of bone. Moreover, it has been shown that NQO1 has a cytoprotective role by stabilizing p53 tumor suppressor protein. NQO1 polymorphisms have been previously described to increase the risk of ALL; de novo childhood leukemia; prostate, breast, colorectal, and bladder cancers; and increased resistance to chemotherapy and radiation. To our knowledge, this is the first report of NQO1 polymorphism in HS.

**Activated Protein C Resistance in Patients With Preeclampsia in Lagos University Teaching Hospital Idis Araba, Lagos, Nigeria**

Nosimot Davies, MD; Lagos University Teaching Hospital

**Objectives:** Determine the prevalence of activated protein C resistance in patients with preeclampsia compared with normotensive pregnant women in Lagos University Idis Araba, Lagos, Nigeria.

**Methods:** A case-control study was carried out in 100 preeclamptics and 100 normotensive pregnant controls. The APC ratio was determined using the modified activated partial thromboplastin time. Study participants with an APC ratio of less than 2.0 were defined as having APCR. Data were analyzed using SPSS version 22.0.

**Results:** This study included 100 preeclamptic women (mean age 32.26 ± 5.64; 33 with mild preeclampsia and 67 with severe preeclampsia) and 100 normotensive pregnant women as controls (mean age, 31.50 ± 5.29). Booking status, gestational age, systolic blood pressure, diastolic blood pressure, and mean arterial blood pressure were statistically significant among study participants (P < 0.000). Mean APC ratio was significantly lower in preeclampsics (2.89 ± 1.70) compared to normotensive pregnant women (3.57 ± 1.06) (P = 0.0008), and the levels were also higher in mild (2.95 ± 1.15) compared to severe preeclampsics (2.62 ± 1.14). The frequency of APCR was 26% among women with preeclampsia compared to 4% among normotensive controls (P < 0.000). Among 100 preeclamptic women, 7 (21.2%) out of 33 with mild preeclampsia had APCR, and 19 (28.4%) out of 67 with severe preeclampsia had APCR. APC ratio had a significant negative correlation with mean arterial blood pressure (r = −0.324; P < 0.000) and proteinuria (r = −0.379; P < 0.000).

**Conclusion:** This study shows that the frequency of activated protein C resistance is significantly higher in preeclampsics compared to normotensive pregnant women, and this is more pronounced in those with severe preeclampsia compared to those with mild disease. APCR may therefore be used as a marker of severity in the disease.

**Potential Prognostic Significance of Aberrant CD10 Positivity in Mantle Cell Lymphoma**

Yonah Zienba, MD, Judith Brody, MD, Peihong Hsu, MD, and Kalpana Reddy, MD; Zucker School of Medicine at Hofstra/Northwell

**Objectives:** Mantle cell lymphoma (MCL), a mature B-cell lymphoma characterized by 11q13 translocation, typically t(11;14)(q13;q32), comprises up to 10% of non-Hodgkin lymphomas in Western countries. Usually, MCL is positive for CD5 and cyclin D1 but negative for CD23, CD10, and BCL6. Although cases of MCL with