A 65-year-old woman presented to a hospital with confusion, shortness of breath, and ecchymotic skin lesions. She was afebrile. Her hemoglobin was 3.6 g/dL (normal [nl] 11-15 g/dL), platelet count was 62 x 10^3/mm^3 (nl 150-450 x 10^3/mm^3), white blood cell count was 5.9 x 10^3/mm^3 (nl 3.5-11 x 10^3/mm^3), mean corpuscular volume (MCV) was 114 fl (nl 80-99 fl), creatinine was 1.9 mg/dL (nl 0.4-1.3 mg/dL), and serum lactate dehydrogenase (LDH) was 2,200 IU/L (nl 50-175 IU/L). Based on her confusion, anemia, thrombocytopenia, and elevated serum creatinine and LDH, a diagnosis of thrombotic thrombocytopenic purpura (TTP) was made.

The patient received four units of packed red blood cells and was transferred to our hospital for urgent plasma exchange (PEX). Upon arrival, her history was unremarkable while physical examination was notable for tangential speech, conjunctival pallor, slight macrognosia, and ecchymotic areas on her extremities. Cardiopulmonary exam was normal and there was no lymphadenopathy or hepatosplenomegaly.

The patient’s peripheral blood smear showed 1% to 5% schistocytes per high-power field that further suggested a microangiopathic process. However, macroovalocytes, hypersegmented neutrophils, polychromasia, and occasional teardrop cells were observed. (Figure 1). The patient received 2 units of fresh frozen plasma (FFP) to correct her coagulopathy and to partially replenish her presumptively low ADAMTS13 while a serum cobalamin level and anti-IF antibody were checked. The patient was empirically given a dose of intramuscular cyanocobalamin.

The patient’s serum cobalamin level returned at 51 pg/ml (nl 211-911 pg/ml) and her anti-IF antibody was positive. After fourteen days of intramuscular cobalamin her peripheral blood smear showed resolution of megaloblastic changes and her mental status and ecchymotic areas improved.

Figure 1. Peripheral blood smear of our patient with hallmarks of cobalamin deficiency. There is marked anisopoikilocytosis. Ovalocyte (1), macroovalocyte (2,3), hypersegmented neutrophil with 5 lobes (4), schistocyte (5) and teardrop cell (6).
Peripheral blood smear and rapid confirmatory laboratory testing, PEX may be avoided in patients presenting with severe cobalamin deficiency mimicking TTP.

Clinicians should be aware of unusual clinical presentations of cobalamin deficiency masquerading as a serious microangiopathic hemolysis. The prompt recognition, diagnosis, and treatment of cobalamin deficiency is vital because therapy is safe, inexpensive, and corrects hematologic abnormalities while bringing about a complete or partial correction of the neuropsychiatric abnormalities in the majority of patients.

REFERENCES

Samir Dalia, MD, is a resident in internal medicine. Cannon Milani, MD, is a Fellow in Hematology/Oncology. Jorge Castillo MD, is Assistant Professor of Medicine, Department of Hematology/Oncology. Anthony Mega, MD, is Associate Professor of Medicine (Clinical), Department of Hematology/Oncology. Fred J Schiffman, MD, is Professor of Medicine, Department of Hematology/Oncology. All are at the The Warren Alpert Medical School of Brown University.

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The authors have no financial interests to disclose.

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Dear Colleague,

This past summer marked a historic victory for anti-tobacco advocates. On June 22, 2009, President Obama signed into law the new Family Smoking Prevention and Tobacco Control Act giving the U.S. Food and Drug Administration (FDA) the authority to regulate tobacco products and stop the harmful practice of marketing tobacco to children. This law will help significantly reduce the number of children who start to use tobacco, the number of adults who continue to use tobacco, and the number of people who die as a result.

While this is all good news, it is evident that the Family Smoking Prevention and Tobacco Control Act cannot by itself put an end to tobacco use. Its intent is to complement, not replace, the successful work that we have been doing over the years to educate our children about the importance of being tobacco-free. Interestingly enough, in late August, major tobacco manufacturers filed suit to overturn portions of the new law, specifically the restrictions on advertising, marketing and labeling of tobacco products.

Since there is more that can be done, the Rhode Island Medical Society would welcome your support of our Tar Wars Rhode Island Program, the national tobacco-free educational program developed by the American Academy of Family Physicians. We are looking for physician presenters to volunteer to talk with students about the dangers of tobacco use. The program involves teaching an hour-long lesson to the students (RIMS provides you all materials); and then returning to the school to judge a half-hour poster contest. The Tar Wars flyer provides further details about the Tar Wars program as well as details about the Family Smoking Prevention and Tobacco Control Act. You can also go to www.tarwars.org for more information.

If you are interested, please contact Catherine Norton at 528-3286 or cnorton@rimed.org. We anticipate school presentations to be scheduled during the months of January, February, and March 2010. We also have available for your use, “How to Present Tar Wars Guidelines.”

Thank you for your support!

Sincerely,

Arthur A. Frazzano, MD
Past President
Chair, Tar Wars Rhode Island

Tar Wars, a national tobacco-free educational program developed by the American Academy of Family Physicians, is coordinated locally by the Rhode Island Medical Society, the Rhode Island Academy of Family Physicians, and the Rhode Island Chapter of the American Academy of Pediatrics.