The ITP Support Association Platelet Reprint Series

No. 48 – A healthy adult has a low platelet count: Is it ITP?

American Perspective reprinted from: **Mar 2014**

Title: **A healthy adult has a low platelet count: Is it ITP?**

Authors: **James N. George, M.D.,** Oklahoma City, **George R. Buchanan, M.D.,** Dallas

In the last issue of *The Platelet*, we discussed the diagnosis of ITP in a child. In many ways, the evaluation of adults is the same as the evaluation of children. The essential steps are the same: a careful medical history, a thorough physical examination, and evaluation of laboratory data with particular attention to examination of the platelets and other blood cells under the microscope. Also, as in children, there is no specific test that establishes the diagnosis of ITP. ITP can only be diagnosed by excluding other causes of a low platelet count. However the evaluation of adults also has important differences from the evaluation of children. An important difference between ITP in children and adults is description of the onset of bleeding symptoms. In children the onset is often sudden and sometimes severe, with the occurrence of large bruises; in adults, the onset is usually gradual, with minor bruising or prolonged menstrual bleeding occurring over several weeks or months. In addition, the other causes of a low platelet count that must be excluded before a diagnosis of ITP can be established are different in adults. The most common causes of a low platelet count, other than ITP, are listed in the Table.

Causes of a low platelet count in a healthy adult

1. Falsely low platelet count (caused by platelet clumping in the blood collection tube, or by giant platelets which can occur in patients with hereditary thrombocytopenia)
2. Medicine sensitivity (quinine, sulfonamides, acetaminophen [paracetamol], cimetidine, ibuprofen, naproxen, and others)
3. Beverage or food sensitivity (quinine in tonic water and Schweppes Bitter Lemon, English walnuts, and others)
4. Pregnancy (normally lower platelet counts in 3rd trimester)
5. Infections (hepatitis C, HIV, *Heliobacter. pylori*
6. Liver cirrhosis with a large spleen
7. Myelodysplasia
8. Congenital thrombocytopenias

First, the low platelet count must be documented to be true by examination of the blood cells with a microscope. Platelet counts in all laboratories are done with automated instruments that identify platelets by their small size. In some normal people (approximately 1 in 1000), the chemical used to prevent blood from clotting in the collection tube, called EDTA, causes the platelets to clump together. These clumps are apparent with the microscopic examination, and the true platelet count can be determined by collecting the blood in a different type of tube. The other cause of a falsely low platelet count is the presence of giant platelets, which the laboratory instrument mistakes for white blood cells. These

are also apparent with the microscopic examination. After the low platelet count is confirmed to be true, the potential causes other than ITP need to be excluded.

First among other causes is an allergic sensitivity to a medicine or food. Quinine is the most common drug causing a low platelet count. Quinine is not only in tablets but also in common beverages. Other common medicines can also, but rarely, cause allergic thrombocytopenia. Foods can also rarely cause low platelet counts. Readers of the platelet will recall the dramatic story of a man with recurrent episodes of severe thrombocytopenia caused by English walnuts that we told in the March 2012 issue of *The Platelet*. These allergic reactions are suspected when sudden episodes of severe thrombocytopenia occur, followed by rapid recovery. The sudden development of bleeding symptoms and a low platelet count, often occurring multiple times, is a very different story from the typical gradual onset of minor bleeding symptoms in adults with ITP.

Platelets counts are commonly lower than normal during the last months of pregnancy, especially near delivery. Approximately 10% of women have platelet counts below the normal range, but in most of these women the platelet counts are more than 100,000/μL. The low platelet counts are discovered because blood counts are routinely done at the time of delivery. This is not a disease. We think that it is only related to a fraction of platelets being transiently diverted from the normal circulation into the placenta. The platelet count returns to normal after delivery.

Several types of infections can cause low platelet counts, without signs of an actual infectious illness. Most important are hepatitis C and HIV infections. In some patients, the recognition of a low platelet count is the first sign of these infections. Therefore some hematologists recommend that the testing for hepatitis C and HIV should be part of the initial evaluation of an adult with the new observation of a low platelet count. *Helicobacter pylori*, often described as *H. pylori*, is an unusual bacteria that can live in our stomachs. In some people this can cause ulcers, but in many people it may cause no symptoms. *H. pylori* infection has been associated with a low platelet count, especially in countries where it commonly occurs, such as Japan.

Chronic liver disease, such as can occur in alcoholic cirrhosis, can cause scarring and obstruction of blood flow through the liver. The increased pressure in the blood vessels from the spleen to the liver causes congestion and enlargement of the spleen. Platelets predictably become trapped in the large spleen and the platelet count in the circulation decreases.

Myelodysplasia, also known as myelodysplastic syndrome or MDS, occurs in older people. In the UK, the number of new diagnoses of MDS each year is about 4 per 100,000 people – about the same as the number of new diagnoses of ITP in adults each year. MDS is a disorder of bone marrow failure, typically with anemia and low white blood cell counts in addition to a low platelet count. However in some patients, the low platelet count occurs first and is mistaken for ITP. MDS is diagnosed by the abnormal appearance of the blood producing cells when a bone marrow biopsy is examined.

Finally, as in children, a low platelet count may be inherited. Inherited thrombocytopenia disorders are rare, but they are lifetime disorders and they can easily be mistaken for ITP. The presence of giant platelets should cause suspicion for inherited thrombocytopenia. When inherited thrombocytopenia is suspected, thrombocytopenia may then be identified in other family members, confirming the diagnosis. The clinching clue is that the platelet count does not increase with treatments for ITP.

When this is all done, the patient and her hematologist can be more confident of the diagnosis of ITP.