Iron-Deficiency Anemia

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Hello and welcome to the Island Drug Podcast. This is Chris; I'm a pharmacist at Island drug. This week's podcast was prepared by Branden Couture, a pharmacy student on rotation with Island Drug. The topic is iron-deficiency anemia or IDA.

There are nearly five hundred million people worldwide and roughly one to two percent of American adults with IDA. There are certain groups of people that are at higher risk of IDA including children younger than two years old, adolescent girls, pregnant females, and elderly people over the age of sixty-five. Causes of IDA range from malnutrition to genetics to toxins and these will be covered as we progress further into this podcast.

Iron is important for the body. It helps to create energy, is instrumental in creating DNA, and is used to clear up free radicals that can cause damage. There is a small margin between the amount of iron taken in by diet and the body’s requirements and this helps to explain why infant children and female adults are at higher risk for IDA. There are many facets of iron deficiency which include: iron loss, iron intake, iron absorption, and physiological demand and if the iron is depleted at one of these sources it leads to IDA.

There are three stages to iron deficiency: pre-latent, latent, and IDA. The pre-latent stage is when the iron storage, primarily in the liver and muscle cells, starts to deplete. These stores can deplete without causing anemia because the body recycles the old red blood cells and uses the iron found in hemoglobin to fuel the body’s needs. Hemoglobin is a protein complex that is found in red blood cells and is essential for transporting oxygen all around the body. Latent stage occurs when the stores are fully depleted, but the hemoglobin levels are still within the normal range. IDA is characterized by a decrease
in ferritin levels, which affects how iron is stored, a decrease in serum iron, as well as decreased transferrin saturation, which is how iron is transferred around the body. Typically, hemoglobin and hematocrit levels are low in anemic patients, but not until after the stores have been depleted completely.

A person with IDA may present with no symptoms or have minimal complaints. Symptoms include decreased exercise tolerance, fatigue, dizziness, irritability, weakness, palpitations, vertigo, shortness of breath, or chest pain. Other symptoms are increased heartbeat, a pale appearance, decreased mental alertness, and may have a diminished vibratory sense or gait abnormality. Laboratory tests are needed to confirm IDA. Typical findings are low serum iron and ferritin levels and a high total iron binding capacity or TIBC, which is an indication that iron receptors are very sensitive and are ready to receive iron to incorporate into the cell.

So, how does one get IDA? Iron deficiency happens when there is a prolonged negative iron balance or dietary iron intake does not meet the physiological needs of the body. In less industrialized nations, nutritional intake has a high impact on iron deficiency. When the diet is limited in meats, fresh fruit and vegetables, or is high in substances that form complexes with iron, this may lead to an iron deficiency. There are also many malabsorptive syndromes that may cause IDA. Situations that increase the demand for iron are frequent blood donations, menstruation, participating in endurance sports, pregnancy and lactation, infancy and adolescence. Blood loss is another important cause of IDA. This can result from many disorders, including hemorrhoids, copious menstrual flow, peptic ulcers and postpartum bleeding as a few examples.

Treatment for IDA depends on the severity of the disease. Because iron deficiency is a signal of an underlying illness it is necessary to treat the illness prior to correcting the iron levels. In mild cases utilization of nutritional intake may be vital. Iron is poorly absorbed from fruits, vegetables, grains, and dairy; while best absorbed from poultry, meat, and fish. People with IDA should increase the amount of meat intake during meals, with moderate dairy and tea intake in between meals. In mild to moderate IDA dietary supplements are used to increase the amount of iron in the body. There are many forms of supplement available including ferrous sulfate, succinate, lactate, fumarate, glycine sulfate, glutamate, and gluconate. The general recommendation is 200mg of elemental iron divided into two or three doses daily to increase absorption and to avoid adverse reactions. Adverse reactions include dark discoloration of the feces, constipation or diarrhea, or nausea and vomiting. In severe cases of IDA, malabsorptive disorders, or intolerance to oral supplements intravenous iron supplementation is used. Severe cases of IDA typically arise when significant blood loss has occurred, blood transfusions are refused, and the patient cannot take oral supplements.

To conclude this segment on IDA, I’m going to highlight the take-home points from this podcast and provide you with some resources for finding more information on IDA. IDA is prevalent in roughly one to two percent of the American population, with the highest percentage seen in the elderly, adolescents, infants, and pregnant women. The three stages of IDA dictate what treatment is supplied. A few websites of interest are as follows:

- http://www.mayoclinic.com/health/iron-deficiency-anemia/DS00323
The above article is general information that is in no way intended to treat, diagnose, or cure any medical condition. Further it is not intended, nor recommended, that this information be used without the supervision of your medical provider.

- A website full of accurate information related to IDA.
- A website provided by the government outlining disease states and any medical information that is useful for the general public.

Island Drug has many iron supplements at hand for purchase and provides compounding for patients with specific needs.

Thank you for tuning into this week’s Island Drug Podcast. Please tune in next week.