

Cancer and Blood Disorders

Although every disease affects the blood one way or another, a blood specialist, Hematologist, deals with specific diseases that primarily affect the blood and the bone marrow. Hematologists are also the experts who deal with blood clotting disorders, among a variety of similarly related diseases.

There are three components to the blood that fall into the sphere of the hematologist expertise.

Red blood cells function to carry oxygen to the tissues and white blood cells fight against infections. Platelets, which are small sticky particles, stop the bleeding by sealing the leaks, or coagulating, in the blood vessels.

Those three kinds of cells are produced by the bone marrow, which is the juicy material inside the bone. This cell production is well-orchestrated. It follows the rules of supply and demand. So, when we bleed, a signal from the kidneys, Erythropoietin, tells the bone marrow to make more red cells to make up for the loss. When enough red cells are produced, another signal tells the bone marrow to slow down.

Likewise, when there is an infection, such as pneumonia, several signals would command the bone marrow to make more white blood cells to fight the infection and prevent it from spreading to other body parts. When enough white cells are produced or when the infection is contained, another chemical signal would tell the bone marrow to slow down and halt white blood cell production. The same happens with platelets when there is blood loss that will require more platelets to contain the blood loss.

Blood diseases happen when these checks and balances fail. In fact, diseases of all kinds are essentially a failure of this delicate and meticulous process of checks and balances within the human body. That is what separates physiology (normal) from pathology (disease state).

Hematologists deal with the pathology, or diseased state.

Of course, it wouldn't be easy to describe all the possible diseases that can arise when the process fails; but, by through self-guided research, you can learn more about go specific diseases of the blood in a simplified fashion that is not intended to be medical advice. I say this not to avoid litigation, but because it is more complex than to describe in a page, a chapter, or even a book. It takes eight years of education after high school and an additional six years of training to become a blood specialist. We feel that broad, simplified education to the public can only be helpful, but not enough to self treat or diagnose- that is the job of the professionals.

By Dr. Nashat Gabrail