

CANCER CONSULTANTS OF AMERICA

BRIDGING THE GAP BETWEEN CANCER AND UNDERSTANDING®

Cancer Answers

Blood Cancers

Surprising to most people, the human body has about 6 liters of blood. In practical terms, this translates to three 2-liter bottles of soda (the beverage aisle at the grocery will never be viewed the same again). This fact is quite astonishing to many people because common thought is that more blood is believed to be circulating throughout the body. Human blood serves many purposes and contains a variety of different types of cells. Red blood cells function to transport oxygen, immune cells are dedicated to maintaining a disease-free environment, and platelets are present to prevent excessive bleeding when the blood vessels are damaged. Common to all blood cells are their origins. Blood cells begin to develop in bone marrow which is located at the center of the larger bones in the body including the hips, thigh bones, and sternum. Bone marrow is a liquid environment with soft, spider web-like tissue that harbors human hematopoietic stem cells that can promote the development of any type of blood cells, including immune cells.

The process of immune cell development is tightly regulated and occurs in a series of irreversible stages. However, this process of immune cell development is significantly altered during blood cancer. When the blood cancer develops quickly, it is referred to as "Acute" whereas "Chronic" is the term used to describe blood cancers that take more time to develop. The human body has two categories of immune cells, myelogenous and lymphocytic. Myelogenous describes the type of immune cells (innate) that are Lymphocytic includes immune cells present since birth. (adaptive) that are acquired throughout life due to encounters with microbes in the environment. Finally, leukemia is a blood disorder and the term is used to describe the accumulation of immature or non-functional immune cells resulting in a depletion of healthy immune cells that are necessary for the body to maintain a healthy status.

Taken together, Acute Myelogenous Leukemia (AML) is a blood cancer that develops quickly and fails to produce effective innate immune cells. The result is the accumulation of immature, nonfunctional precursor innate immune cells.

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Chronic Myelogenous Leukemia (CML) is a progressive disease that develops over extended periods of time. The early stage is described by the presence of slightly higher than normal underdeveloped innate immune cells. This stage includes having an excess of abnormal mature innate immune cells. However, the later stage of this disease is characterized by a significantly higher accumulation of underdeveloped, non-functional innate immune cells. This later stage is commonly referred to "blast crisis". Acute Lymphocytic Leukemia (ALL) is a cancer with a fast onset and characterized by an abundance of underdeveloped adaptive immune cells which results in a scarce amount of functional adaptive immune cells. Furthermore, these non-functional, immature adaptive immune cells crowd out the healthy functional adaptive immune cells which is concerning because these healthy cells are designed to fight infections within the body. Chronic Lymphocytic Leukemia (CLL) is a disease that develops over a longer period of time and is characterized but an accumulation of mature, non-functional adaptive immune cells. Research in the field of leukemia therapeutics has advanced at an impressive pace. Today, many therapeutic options are available that specifically target the leukemia cells and are often used for the treatment of these blood cancers.

Submit your Cancer Answers topics to info@CancerConsultantsOfAmerica.com

We Are Available to You

Please contact us today if you would like more information about how our services can benefit you and your family.

Services:

- Individual and Family Cancer Education
- Medical Appointment Liaison Services
- Information Seminars and Public Speaking Events

Fun Facts – September

Cancer Awareness Month:

- Blood Cancer (Red, Orange, Violet, Lime Green, Burgundy) X
- Pediatric Cancer (Gold)
- Prostate Cancer (Light Blue) 🔀
- Ovarian Cancer (Teal) Gynecological Cancer (Purple)
- Thyroid Cancer (Purple, Teal, Pink)

September 2 – World Coconut Day

September 11 – Patriot Day

September 17 – Constitution Day (USA)

September 22 – Fall Equinox (Northern Hemisphere) 💮

September 28 – Ask A Stupid Question Day



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