# Cancer.IM-Understanding Adult Acute Lymphocytic Leukemia

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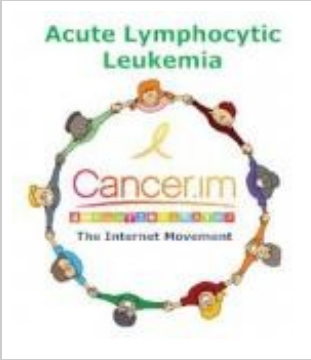


**Acute lymphoblastic leukemia (ALL – also called acute lymphocytic leukemia) is characterized by the presence of early "blast" forms of white cells that are stuck in a primitive developmental phase and are incapable of going on to become fully mature.**

I have a special interest in leukemia as my dad died of acute lymphocytic leukemia (ALL). In various cases I've seen of acute myoblastic leukemia in a blast crisis, some have died in an extremely short period of time, 2 died within 48 hours of diagnosis from the presentation of the first symptoms. My father in law had a myeloproliferative disease that had behaved just like hairy cell leukemia, and my step mom also had the same condition. Myeloproliferative disease is considered to be pre-Leukemia. Leukemia can affect people at any age. Just ten years ago, there were over a quarter of a million adults and children with some form of leukemia and over 200,000 people died from it. About 90% of leukemias are diagnosed in adults.

I have often seen children and adults with ALL in ER due to infection or problem from chemotherapy or a fever.

Leukemia is a complex phenomenon. Just as "cancer" is a generic descriptive term that covers dozens of different conditions, so leukemia itself is a constellation of different diseases, all of which share certain characteristics, the most prominent of which is the malignant proliferation of immature lymphoid cells in the bone marrow.

Leukemias can be acute or chronic. The malignant cell type in acute lymphocytic leukemias is derived from primitive white blood cells or white blood cell precursors. (The predominant malignant cell type in chronic leukemias, on the other hand, resembles more mature cells.)

Acute lymphoblastic leukemia (ALL – also called acute lymphocytic leukemia) is characterized by the presence of early "blast" forms of white cells that are stuck in a primitive developmental phase and are incapable of going on to become fully mature. Therefore the blood and bone marrow become flooded with leukemic cells that accumulate in the bone marrow cavity, ultimately replacing the bulk of the normal cells. The presence of all these immature cells interferes with the normal functioning of the bone marrow and the blood. This leads to symptoms such as bruising, bleeding, and susceptibility to infections. People with acute leukemias can quickly become desperately ill.

Approximately 5,200 new cases of ALL are diagnosed each year in the US, and around 1,400 deaths occur annually from this disease.

Leukemia like cancer is a complex occurrence in the body. Leukemia is described as cancer of the blood or blood cells. It has many types and is classified in a number of forms according to their rate of progression and occurrence. Basically all kinds of leukemia are characterized by the explosion of immature lymphoid cells into the bone marrow and blood.

Acute Lymphocytic Leukemia (ALL)-Adult is a blood cancer occurring in adults, especially over 50 years, which affects the white blood cells. ALL is a malignant disease where in large numbers of white blood cells resembling lymphoblasts are produced which is incapable to fully mature. These acute lymphomatic leukemic cancerous cells multiply at a very fast rate within the body and flood the blood as well as the bone marrow, replacing the normal cells. As these cells start replacing normal cells, the normal cells become lesser in number, interfering with the normal working of bone marrow and blood and hence you become more and more susceptible to bleeding and infections.

The exact reasons for ALL are not known, although environmental factors are being researched. A person exposed to large amount of radiations, previous chemotherapy etc too are termed as causes of ALL. The most common symptoms of ALL include nosebleeds, unexplained weight loss, easy bruising, excessive bleeding in case of minor injuries etc.

An estimated 5000 new ALL cases were diagnosed in 2007. Acute Lymphocytic Leukemia is also known as Acute Lymphoblastic Leukemia, and makes up for approximately 20% of all adult leukemia, causing death of nearly 1400 people annually.

ACUTE LYMPHOCYTIC LEUKEMIA IN CHILDREN

Acute lymphocytic (also called lymphoblastic) leukemia, or ALL, is the commonest cancer diagnosis for children in the US, representing approximately 23 percent of the total number of pediatric cancer diagnoses annually. There has been a slow but steady increase in the number of children diagnosed with ALL over the past 25 years in the US. Annually, approximately 2,400 children receive a diagnosis of ALL in the US. The peak age for developing the disease is between the ages of 2 and 3 years. It also occurs in adolescents, but in lesser numbers. There is a strong association between Down syndrome and ALL.

The most prominent characteristic of childhood ALL is the malignant proliferation of immature lymphoid cells (or “blasts”) in the bone marrow. As a result of this proliferation, the blood and bone marrow become flooded with vast numbers of leukemic blast cells that ultimately crowd out the bulk of the normal cells. The presence of all these immature cells interferes with the normal functioning of the bone marrow and the blood. This leads to symptoms such as bruising, bleeding, and susceptibility to infections. Children with acute leukemias can quickly become desperately ill. However, with current treatment approaches 95 percent of children with ALL can expect to achieve remission, and approximately 75-85 percent survive free of disease for at least 5 years.

A type of cancer of the blood found in kids today is ALL or better put as the acute lymphocytic leukemia, between ages 3-7 years. ALL accounts for approximately 80% of all childhood leukemia’s. Amongst pediatric cancers, ALL is a very common malignancy accounting for 1/3rd of all the cancers. ALL is also known as acute lymphoblastic leukemia or acute lymphoid leukemia.

ALL in childhood is characterized by excessive multiplication of lymphoblast. These malignant, white blood cells are immature and they multiply continuously. These over produced lymphoid immature cells flood the blood and bone

marrow, and replace normal cells. The replaced immature cells interfere with the normal functioning of the blood and bone marrow, causing excessive bleeding and bruising and lower resistance to infections. These lymphoid cells multiply and spread to other organs too, such as spleen, lymph nodes etc. Children diagnosed with ALL become susceptible to infections and get fevers very often.

Like other blood cells, leukemia cells too travel throughout the body. According o the number of these immature cells and where they get collected, children suffering the symptoms, or those who show a number of symptoms, the most common being, anemia where they look pale and weak always. Other symptoms include fever, excessive bleeding during minor injuries, frequent infections etc.

The current scientific advances have helped to develop effective treatment for everyone. 95% of children with ALL can achieve remission and out of that 75-85% survive, and are able to stay away from the sickness for approximately 5 years.

Leukemia is a kind of cancer that starts in the bone marrow. The bone marrow is the center of the bone where blood cells are produce. Leukemia comes from the word **** which are white blood cells and white blood cells are important for our defense and processing a foreign substances.

Leukemia is the uncontrolled production of abnormal white blood cells. This cancer cells prevent healthy red cells platelets and other normal white blood cells from being made. A cancer can spread to the bloodstream and it can travel about the central nervous system and the spinal cord to brain and other parts of the body.

References:

Acute Lymphocytic Leukemia , American Cancer Society,