



Childhood Acute Lymphoblastic Leukemia

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EDITORIAL

Childhood acute lymphoblastic leukemia (ALL) is a type of cancer in which the bone marrow makes too many immature lymphocytes (a type of white blood cell). Childhood acute lymphoblastic leukemia (also called ALL or acute lymphocytic leukemia) is a cancer of the blood and bone marrow. This type of cancer usually gets worse quickly if it is not treated.

Anatomy of the bone is made up of compact bone, spongy bone, and bone marrow. Compact bone makes up the outer layer of the bone. Spongy bone is found mostly at the ends of bones and contains red marrow. Bone marrow is found in the center of most bones and has many blood vessels. There are two types of bone marrow: red and yellow. Red marrow contains blood stem cells that can become red blood cells, white blood cells, or platelets. Yellow marrow is made mostly of fat.

LEUKEMIA MAY AFFECT RED BLOOD CELLS

In a healthy child, the bone marrow makes blood stem cells (immature cells) that become mature blood cells over time. A blood stem cell may become a myeloid stem cell or a lymphoid stem cell. Red blood cells that carry oxygen and other substances to all tissues of the body. White blood cells that fight infection and disease. Platelets that form blood clots to stop bleeding.

A lymphoid stem cell becomes a lymphoblast cell and then one of three types of lymphocytes (white blood cells). B lymphocytes that make antibodies to help fight infection. T lymphocytes that help B lymphocytes make the antibodies that help fight infection. Natural killer cells that attack cancer cells and viruses.

In a child with ALL, too many stem cells become lymphoblasts, B lymphocytes, or T lymphocytes. These cells are also called leukemia cells. These leukemia cells do not work like normal lymphocytes and are not able to fight infection very well. Also, as the number of leukemia cells increases in the blood and bone marrow, there is less room for healthy white blood cells, red blood cells, and platelets. This may lead to infection, anemia, and easy bleeding.

PAST TREATMENT FOR CANCER

This is most common among adults over 55 years, but younger adults can also develop it. About 25% of adults with leukemia have chronic lymphocytic leukemia (CLL). It is more common in men than in women and rarely affects children.

Anything that increases your risk of getting a disease is called a risk factor. Having a risk factor does not mean that you will get cancer; not having risk factors doesn't mean that you will not get cancer. Talk with your child's doctor if you think your child may be at risk.

Being exposed to x-rays before birth.

Being exposed to radiation.

Past treatment with chemotherapy.

Constitutional mismatch repair deficiency (mutations in certain genes that stop DNA from repairing itself, which leads to the growth of cancers at an early age).

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