

Acute Myelogenous Leukemia for the Pediatric Patient

What is acute myelogenous leukemia?

Leukemia is a cancer that involves the blood-forming tissue of the bone marrow, spleen and lymph nodes. The bone marrow controls the production of normal blood cells. In leukemia the normal production of blood cells breaks down. The bone marrow starts producing large numbers of abnormal cells. These abnormal, immature cells, called blasts or lymphoblasts, crowd out other blood cells in the bone marrow, blood stream, and lymph system. The cancerous cells can also invade other organs such as the spinal cord and the brain.

Acute non-lymphoid leukemia (ANLL) refers to any type of leukemia involving any of the blood forming cells except those which form lymphocytes. The different forms of ANLL are listed below:

- acute myelogenous leukemia (AML)
- acute promyelocytic leukemia (APL)
- acute monocytic leukemia (AMoL)
- acute erythroid leukemia (AEL)
- acute myelomonocytic leukemia (AMML)
- acute megakaryocytic leukemia (AmegaL)

AML is the most common form of ANLL and is divided into several subtypes. It is less common than acute lymphoblastic leukemia (ALL), another form of leukemia that occurs in children. Children with Down syndrome have an increased risk of AML during the first 3 years of life. In rare cases, AML tumor cells appear as solid tumor masses called isolated granulocytic sarcomas or chloromas.

What are the symptoms of acute myelogenous leukemia?

Early signs of AML may include fever, bleeding or bruising easily, swollen lymph nodes, and other symptoms similar to those of the flu, such as feeling weak or tired all the time and aching bones or joints.

How is acute myelogenous leukemia diagnosed and treated?

If your child has symptoms of leukemia, his or her doctor may order blood tests to count the number of each of the different kinds of blood cells. If the results of the blood tests are not normal, a bone marrow aspiration and biopsy may be performed to determine what kind of leukemia your child has and to plan the best treatment. A spinal tap may also be done to determine if leukemia cells are present in the spinal cord and brain.

The primary treatment for AML is chemotherapy. Chemotherapy drugs may be taken by mouth or injected into a vein or muscle. They may also be injected into the fluid that surrounds the brain and spinal cord (intrathecal chemotherapy). Radiation therapy or bone marrow transplantation may be used in certain cases.