Acute Myeloid Leukemia (AML)

AML is a blood cancer that starts in the bone marrow but moves quickly into the blood, sometimes spreading to other parts of the body.

What is AML?

Leukemia is classified based on two attributes—its speed of progression and the type of white blood cells affected.

Leukemia is described as being either acute (fast growing) or chronic (slow growing), and either myelogenous (affecting the myeloid cells) or lymphocytic (affecting the lymphoid cells, or lymphocytes).

Global Incidence

AML is the most common type of acute leukemia in adults. Patients 70 and older have a higher incidence rate.

In 2017, the worldwide incidence of AML was nearly 120,000.

Causes and Risk Factors

Today, researchers understand a lot more about what may cause AML. DNA mutations, which may result from exposure to radiation, cancer-causing chemicals or the aging process, are commonly found in AML cells.

Signs and Symptoms

At first, patients with AML often have non-specific symptoms usually associated with more common ailments like the flu. Often, signs and symptoms result from a shortage of normal blood cells, which happens when the leukemia cells crowd out the normal blood-making cells in the bone marrow.

These signs and symptoms include:

- Fever
- Easy bruising or bleeding
- Shortness of breath
- Weight loss or loss of appetite
- Weakness or feeling tired
- Petechiae (red or purple pinpoint spots on the skin)

Prognosis

In general, prognosis for AML patients is poor.

Prognosis is influenced by patient age, AML subtype, and other factors.

Estimated 5-year survival rate for AML is 29.5% in US populations.

The median survival after relapse is <5 months for older patients in the US.

Treatment

Standard types of frontline (or initial) treatment for AML include:

- Chemotherapy, which may be given in two phases: induction therapy and consolidation therapy
- Stem cell/bone marrow transplants are typically used in younger, generally healthy patients when a donor is available
- Hypomethylating agents are typically used in older patients who are ineligible for intensive treatment

Innovative, targeted therapies directed against mutations—those currently approved and those in development—have broadened the treatment landscape.

Research has also shown that the presence or absence of specific gene mutations—including in isocitrate dehydrogenase (IDH), CEBPA, NPM and FLT3—can inform prognosis and guide treatment decisions in AML.