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Leukemia - Acute Myeloid - AML - Diagnosis [1]

This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 08/2013

ON THIS PAGE: You will find a list of the common tests, procedures, and scans that doctors can use to find out what?s wrong and identify the cause of the problem. To see other pages, use the menu on the side of your screen.

Doctors use many tests to diagnose leukemia and determine the subtype (see Subtypes [3]). Some tests may also determine which treatments may be the most effective. For most types of cancer, a biopsy is the only way to make a definitive diagnosis of cancer. If a biopsy is not possible, the doctor may suggest other tests that will help make a diagnosis. Imaging tests may also be used to learn more about the cause of your symptoms. This list describes options for diagnosing AML, and not all tests listed will be used for every person. Your doctor may consider these factors when choosing a diagnostic test:

- Age and medical condition
- Type of cancer suspected
- Signs and symptoms
- Previous test results

The following tests may be used to diagnose AML:

Blood tests [4]. To diagnose AML, a doctor will do blood tests to count the number of white blood cells and to see if they look abnormal under the microscope. Special tests called flow cytometry (immunophenotyping) and cytochemistry are sometimes used to distinguish AML from other types of leukemia and to determine the exact subtype of AML.

Molecular testing. Your doctor may recommend running laboratory tests on the leukemia cells to identify specific genes, proteins, chromosome changes, and other factors unique to the leukemia. Chromosome studies called cytogenetics are used to find genetic changes in the AML blasts. In addition, several specific genetic mutations in the AML cells have been found that can help determine a person?s prognosis (chance of recovery), and these molecular analyses are now being done more often when AML is first diagnosed. Results of these tests will help decide your treatment options (see the Treatment Options [5] section).
[6]

Bone marrow biopsy and aspiration [7]. These two procedures are similar and often done at

the same time. Bone marrow has both a solid and a liquid part. A bone marrow biopsy is the removal of a small amount of solid tissue using a needle. An aspiration removes a sample of fluid with a needle. The sample(s) are then analyzed by a pathologist (a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease). A common site for a bone marrow biopsy and aspiration is the pelvic bone, which is located in the lower back by the hip. The skin in that area is numbed with medication beforehand, and other types of anesthesia (medication to block the awareness of pain) may be used.

Imaging tests. A computed tomography (CT or CAT) scan [8] (test that creates a three-dimensional picture of the inside of the body) or magnetic resonance imaging [9] (MRI, test that uses magnetic fields, not x-rays, to produce detailed images of the body) may be used to learn more about the cause of symptoms or to help diagnose infections in patients with AML. They are not regularly used to find out how widespread the AML is because the disease has often spread throughout the bone marrow when it is first diagnosed.

Lumbar puncture (spinal tap). A lumbar puncture is a procedure in which a doctor uses a needle to take a sample of cerebral spinal fluid (CSF) to look for cancer cells, blood, or tumor markers (substances found in higher than normal amounts in the blood, urine, or body tissues of people with certain types of cancer). CSF is the fluid that flows around the brain and the spinal cord. Doctors generally give an anesthetic to numb the lower back before the procedure. The CSF is then examined under the microscope to look for AML cells.

After these diagnostic tests are done, your doctor will review all of the results with you. If the diagnosis is AML, these results also help the doctor describe the disease; this is called subtyping.

The next section helps explain the different subtypes for this type of cancer. Use the menu on the side of your screen to select Suptypes, or you can select another section, to continue reading this guide.

Links:
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[2] http://www.cancer.net/about-us
[3] http://www.cancer.net/node/19071
[4] http://www.cancer.net/node/24716
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