Leukemia - Acute Lymphoblastic - ALL - Childhood - Diagnosis

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Diagnosis

Doctors use many tests to diagnose leukemia and determine if it has spread. Some tests may also determine which treatments may be the most effective. A patient history, physical examination, complete blood cell count (CBC), and bone marrow aspiration (see below) are the main procedures used to diagnose ALL or rule out other conditions.

Blood tests [2]. A CBC provides a count of each type of cell in the blood. The blood count may also show abnormal leukemia cells. The blood count is abnormal, in some way, for nearly all children with ALL when they are diagnosed.

Bone marrow aspiration [3]. A bone marrow aspiration is recommended if the blood test shows unusual blood counts or immature cells, or if the doctor suspects that a child may have leukemia. Bone marrow has both a solid and a liquid part. An aspiration removes a sample of fluid with a needle. The sample is then studied by a pathologist. A common site for a bone marrow aspiration is the pelvic bone, which is located in the lower back by the hip. The skin in that area is usually numbed with medication before the test, and other types of anesthesia (medication to block the awareness of pain) may be used.

From this test, the doctor can find out whether the child has leukemia and, if so, what type of leukemia it is. The doctor or nurse will collect more than one sample of bone marrow at the same time for other tests, such as chromosome and molecular genetic tests and immunophenotyping (see Classification [4]). These additional tests are important to plan the most appropriate treatments.

Lumbar puncture (spinal tap). A lumbar puncture can determine if the leukemia has spread to the cerebral spinal fluid (CSF). CSF is the fluid that flows around the brain and the spinal cord. During a lumbar puncture, the doctor uses a needle to take a sample of the CSF to look for leukemia cells. Doctors may give an anesthetic to numb the lower back before the procedure and/or use anesthesia to block awareness of the pain. Whether or not there is leukemia in the central nervous system helps doctors choose the most appropriate treatment. There are many times when it is appropriate to give medicine to treat or prevent leukemia of the central nervous system at the same time as the lumbar puncture.

Learn more about what to expect when having common tests, procedures, and scans [5].

After these diagnostic tests are done, your child?s doctor will review all of the results with you. If the diagnosis is ALL, these results also help the doctor describe the disease; this is called classification [4]. Learn more about the first steps to take after a diagnosis of leukemia [6].

Links:
[1] http://www.cancer.net/about-us
[2] http://www.cancer.net/node/24716
[3] http://www.cancer.net/node/24409
[4] http://www.cancer.net/node/19029
[5] http://www.cancer.net/node/24959
[6] http://www.cancer.net/node/24956