

THE DIAGNOSIS OF CLL

In most cases (about 70%) the diagnosis of chronic lymphocytic leukemia (CLL) is random and made in people who are comfortable during examinations that show an increase in the number of white blood cells, particularly lymphocytes in the blood.

At the time of diagnosis, some patients may show an increase in the size of superficial lymph nodes and spleen. In rare cases, blood tests may show anemia, i.e. a decrease in the value of the Hb (hemoglobin) and red blood cells, as well as a reduction in the number of platelets.

Clinical examination

To evaluate the extent of disease, the doctor performs a clinical examination in which the presence and size of palpable glands in the neck, armpits and groin and the size of the spleen and liver are checked.

Laboratory tests

For the diagnosis of CLL is essential in order to evaluate the characteristics of lymphocytes, which increase in the blood. Two blood sample test are carried out at specialized Hematology centers:

peripheral blood smear: this examination evaluates under an optical microscope the characteristics of the blood cells smeared on a glass slide. It examines the appearance of the cells that appear in the CLL, which are usually very numerous and small.
immunophenotypic examination of peripheral blood cells: detect the characteristics that the lymphocyte leukemic reveal on their surface. The lymphocytes of CLL in fact express some characteristics that distinguish them from normal lymphocytes and from those present in other forms of leukemia.

As anticipated, usually, to make a CLL diagnosis it is sufficient to take a blood sample, where WBC are performed, the morphological analysis and the immunophenotypic examination.

Blood tests



Stock photo. Posed by model.

Samples of your blood will be taken regularly throughout your treatment to check your general health, the levels of red blood cells, white blood cells – particularly your lymphocyte counts – and platelets in your blood, and how well your liver and kidneys are working. Using these test results, your doctor can monitor how the CLL is affecting your body.

- Your doctor will be interested in your lymphocyte counts as this can give an indication of the status of your CLL.
- If your red blood cell count is low or if the amount of hemoglobin in your red blood cells is low, you may have anemia. This can make you feel tired and out of breath.
- Platelets are small cell fragments that help your blood to clot. If you have low levels of platelets your blood may not clot properly – if you cut yourself it may take longer to stop bleeding and you may bruise more easily

Other investigations may be useful to better define the diagnosis or to understand how widespread the disease. These investigations must be taken into account:

chest X-ray, ultrasound of the abdomen and lymph node areas, CT scan. Imaging tests - chest X-rays are used to check that your heart and the lymph nodes in your chest are working properly. Scans help doctors to see what stage the blood cancer has reached and whether it has spread to important organs or other areas of your body. It helps them to choose the most appropriate treatment for you. CT scan =A 'computerized tomography', or CT scan, builds a 3D picture of your internal organs. Your health care team can use the image to check whether your spleen or lymph nodes are enlarged.

PET scan is a 'positron emission tomography' scan. It is used to check areas that a CT scan can't reach, such as bones.

MRI scan = 'magnetic resonance imaging', may be requested if you are allergic to the dyes used in other types of scans or have problems with your kidneys.

There are investigations that serve to evaluate the status of the tissue-deep lymph nodes (lymph nodes in the chest and abdomen, spleen).

fine-needle aspiration and/or bone marrow biopsy.

They are not required for the diagnosis of CLL. They may provide evidence when there is doubt about the diagnosis or when you want to define the cause of a reduced functionality of the bone marrow.

The bone marrow biopsy is currently being performed to evaluate the reduction of lymphocyte leukemia in the bone marrow after treatment.

Other surveys are important to define the biological characteristics of the disease. These surveys are usually considered when there is need to start treatment. Some biological characteristics in fact give important information on the most suitable type of treatment to be considered, while others have a predictive value on the possibility of obtaining a response and the duration of the response itself.

Among the biological surveys considered in clinical practice there are assessment of mutation status of IgVH genes, the evaluation of the mutations of the TP53 gene and evaluation of some cytogenetic abnormalities (of some chromosomes) by a test called FISH. Your health care team can give you further information if you would like to know more about your tests or treatment:

- Always ask your doctors or nurses to explain anything you don't understand or anything that worries you
- They can provide clarifications, if you don't know what your test results mean
- They can also give you information about local patient groups, health services and events in your area if you think that they would be helpful.

PHCZ/IMB/0717/0001

[/en/cll/about-disease/how-to-diagnose-it/the-diagnosis-of-cll-v3](#)