

Non-Hodgkin's Lymphoma

Questions and Answers

What is Non-Hodgkin's Lymphoma?

Non-Hodgkin's lymphoma (NHL) is a cancer of the lymphocytes, a type of white blood cell. When lymphocytes become cancerous (malignant), they multiply and become tumors.

Lymphocytes are normally found in the blood stream and lymph nodes. Lymph nodes are found throughout the body and are identified by their location. They are a part of the body's immune system, which includes the lymphatic system, spleen and lymphocytes.

Some lymph nodes can be found just by feeling them in the neck, groin or under the arms. Some cannot be felt, but they can be seen on X-rays.

NHL is the fifth most common cancer in the United States. Men are at slightly higher risk than women. It is more common in adults than children. The average age at diagnosis is 45 to 55 years. The cause of NHL remains unknown.

What Are the Types and Symptoms of Non-Hodgkin's Lymphoma?

There are more than 30 different types of NHL. The specific types of NHL are associated with different symptoms. Low-grade or indolent NHL is usually associated with painless swelling of lymph nodes (usually in the neck or over the collarbone), but patients are otherwise healthy. The swelling may go away for a while, but then return.

If the low-grade NHL has spread outside of the lymph nodes, such as to the stomach, there may be discomfort in the affected area. Low-grade lymphomas grow slowly. Examples of low-grade NHLs include:

- Marginal zone lymphomas.
- MALT lymphomas.
- Follicular lymphomas.
- Mantle cell lymphomas.

Aggressive NHL is associated with more symptoms and grows more rapidly. There may be pain or swelling in the legs, neck, arms or abdomen. Fever, night sweats and unexplained weight loss may also occur. Examples of aggressive NHLs include:

- Diffuse large cell lymphomas.
- Primary mediastinal large cell lymphomas.
- Anaplastic large cell lymphomas.

Very aggressive (high-grade) NHL is associated with many different symptoms, depending on the location of the cancer. Symptoms can include:

- Fatigue.
- Shortness of breath.
- Pain.
- Weakness in the arms and/or legs.
- Confusion.

High-grade lymphomas grow very rapidly. High-grade NHLs include Burkitt's lymphomas and lymphoblastic lymphomas.

Each type of lymphoma is considered a separate disease. How fast a lymphoma tumor grows probably depends on the type of cells that make up the tumor.

What Is Cancer Staging and What Does It Mean?

After the type of lymphoma has been identified, your doctor will order special tests to determine if your cancer has spread in your body and how much. This is known as a "staging". Staging is important since it helps to predict outcome or prognosis and to determine the treatment approach.

Stage I (early stage): One lymph node region is involved. If the cancer is found in one organ outside the lymph node such as the skin, lung, brain, etc., this is called "extension" or "E" disease.

Stage II (locally advanced disease): The cancer is found in two or more lymph regions on one side of the diaphragm. If the cancer is found in one lymph node region plus a nearby area or organ, the situation is considered "E" disease.

Stage III (advanced disease): The disease involves lymph nodes both above and below the diaphragm or one node area and one organ on opposite sides of the diaphragm.

Stage IV (widespread disease): The lymphoma is outside the lymph nodes and spleen and has spread to one or more organs such as bone, bone marrow or skin.

In addition, each stage is classified as "A" meaning asymptomatic, which is used for patients who do not complain of fever, drenching sweat or unexplained weight loss. When patients have any of these symptoms, "B" is assigned to their stage.

What Are the Common Tests Used to Evaluate Non-Hodgkin's Lymphoma?

Your doctor or nurse will describe these tests in more detail and will talk to you about scheduling. Below is a brief description of each test.

Biopsy: A piece of tissue from an area on the body where the cancer may be is removed and sent to a pathologist for examination under a microscope. Non-Hodgkin's lymphoma is diagnosed by looking at the growth of cancer cells in the lymph nodes or other tissues. The information provided by this tissue sample is important to the diagnosis and treatment of NHL.

X-ray: Radiation to take pictures of an area inside the body.

Computerized Axial Tomography (CT) Scan: A CT scan takes X-rays from different angles around the body. The pictures are then combined using a computer to give a detailed image. The most common CT scans taken are the neck, chest, abdomen and/or pelvis.

Positron Emission Tomography (P.E.T.) Scan: P.E.T. is a technology that combines the fields of medicine, computer science, chemistry, physics and physiology to study the function of organs such as the heart, brain and bone. It is different from conventional imaging methods such as X-rays, CTs, ultrasounds and MRIs because P.E.T. images provide information about how the tissue functions. The other imaging methods show what the tissues look like.

Magnetic Resonance Imaging (MRI): MRI is similar to a CT scan but uses magnets and radio frequency waves instead of X-rays. MRIs can provide important information about tissues and organs that is not available from other imaging techniques. Although MRI is used less for NHL compared to CT scans, it can be useful in evaluation of the bones and brain.

Blood Tests: Blood tests can help determine if different types of blood cells are normal in numbers and appearance, as well as, overall blood chemistry.

Bone Marrow Aspiration and Biopsy: Bone marrow, the spongy material found inside the bones, contains immature cells called stem cells. The stem cells develop into red or white blood cells or platelets. Red blood cells deliver oxygen and take away carbon dioxide. White blood cells protect the body from infection. Platelets help blood to clot. Bone marrow is obtained by numbing the skin, tissue and surface of the bone with a local anesthetic. A thin needle is inserted into the hip or another large bone and a small sample is collected.

Echocardiogram: This diagnostic test is ordered to evaluate the size and function of the heart.

MUGA (Multiple Gated Acquisition) Scan: This scan is an extremely useful for assessing the function of the heart. The MUGA scan produces a moving image of the beating heart, and from this image several important features can be determined about the health of the cardiac ventricles - the heart's major pumping chambers.

What Are the Common Treatments Used to Treat Non-Hodgkin's Lymphoma?

The treatment for NHL depends on the type of lymphoma and the disease stage. Treatment may involve chemotherapy, radiation therapy, bone marrow and stem cell transplant or a combination of these treatments.

Chemotherapy is the use of drugs to treat cancer. There are many different types of drugs available to treat lymphomas. Doctors may prescribe one or more commonly a combination of drugs. Chemotherapy drugs have varying ways of killing cancer cells and different side effects. Giving several drugs at once may increase their effectiveness but also may increase the number of side effects.

Immunotherapy is a type of treatment that uses a person's own immune system to fight cancer. These therapies are also called biologic therapy or biotherapy. One frequently used family of medications is monoclonal antibodies. These are man-made versions of immune system proteins. Antibodies can be very useful in treating cancer because they can be designed to attack a very specific part of a cancer cell.

Radiation is a special kind of energy carried by waves or a stream of energy particles. It may be delivered by a radiation machine or by radioactive substances injected into the bloodstream. External beam radiation, for example, is used to aim the radiation at tumors or areas of the body where cancer is found. Cells in the area where the radiation beam is aimed are killed.

MD Anderson at Cooper does not currently offer bone marrow and stem cell transplant treatment. However, if it is recommended as part of your treatment plan, we will work with you to find a cancer center that provides the type of transplant service you need.

Autologous or allogeneic stem cell transplants and peripheral blood stem cell transplants are procedures that restore the supply of normal stem cells that are destroyed by high-dose chemotherapy and/or radiation therapy. In an autologous transplant, the bone marrow or blood stem cells are collected from the patient. In an allogeneic transplant, the bone marrow or blood stem cells are collected from a matched donor of a related or unrelated (non-family) individual.

What Are Some Common Chemotherapy Protocols Used for Non-Hodgkin's Lymphoma?

Your doctor or nurse will talk to you about your specific treatment protocol and will provide you with patient information sheets describing each drug and a treatment calendar to put in your New Patient Information Packet.

Once Treated, Can Non-Hodgkin's Lymphoma Come Back?

Although many patients with NHL go into remission after treatment, there is a chance that the disease may return later (relapse). When a patient has a relapse, another biopsy is often done. Additional chemotherapy or radiation therapy may be needed in order to control the cancer.

Sometimes, a low-grade NHL may return (recur) as a higher grade of lymphoma. This is called transformation. In this case, the treatment may be different from what was given before.

Because there is always a chance of recurrence, it is very important to see a doctor regularly. If the cancer returns but is found early, the chances of controlling it are better. Your doctor will tell you more about the chances of relapse and will explain your need for follow-up visits.

Resources

National Cancer Institute at www.cancer.gov.

National Institutes of Health at www.nih.gov.

National Heart, Lung and Blood Institute at www.nhlbi.nih.gov/index.htm.

American Society of Clinical Oncologists at www.asco.org.

Leukemia/Lymphoma Society at www.lls.org.

Lymphoma Research Foundation at lymphoma.org. Here you can find "Focus on Lymphoma," a free mobile application for people with lymphoma (App Store or Google Play).

American Society of Hematology at www.bloodthevitalconnection.org.

American Society for Radiation Oncology at www.rtanswers.org.

American Cancer Society at www.cancer.org or call 1.800.ACS.2345.

National Comprehensive Cancer Network at NCCN.com.

National Center for Complementary and Alternative Medicine at nccam.nih.gov.