Understanding Chronic Lymphocytic Leukemia

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There are two major types of chronic leukemia, chronic lymphocytic leukemia (CLL) and chronic myeloid leukemia (CML). Chronic lymphocytic leukemia, as the name implies, involves the lymphocytes, which are a type of white blood cell central to the body's immune system. CML, by contrast, affects the myeloid tissue in the bone marrow, the tissue which actually gives rise to the white blood cells. CML may appear entirely normal. Sometimes chromosomal examination is necessary to establish that the white cell proliferation in the blood is due to CML rather than simply to an infection. Chromosomal examination can also distinguish between CML and another disease, called myelodysplasia.

The most common type of leukemiaB-cell chronic lymphocytic leukemia (B-CLL), is mostly commonly known as chronic lymphoid leukemia (CLL). This is the most common type of adulthood leukemias. Leukemias are cancers of the white blood cells (leukocytes).

CLL affects B cell lymphocytes. B cells originate in the bone marrow, develop in the lymph nodes, and normally fight infection by producing antibodies. In CLL, B cells grow out of control and accumulate in the bone marrow and blood, and here they crowd out healthy blood cells. This can result in a decrease of red cells (anemia). This can occur over many years and be a chronic condition. CLL is a stage of small lymphocytic lymphoma (SLL), a type of B-cell lymphoma, which presents primarily in the lymph nodes. CLL and SLL are considered the same underlying disease, just with different appearances.

Mostly in men

CLL is a disease of adults, but, in rare cases, it can occur in teenagers and occasionally in children. Most people newly diagnosed with CLL are over the age of 50, and the majority are men.
Most people are diagnosed without symptoms as the result of a routine blood test that returns a high white blood cell count, but, as it advances, CLL results in swollen lymph nodes, spleen, and liver, and eventually anemia and infections. Early CLL is not treated, and late CLL is treated with chemotherapy and monoclonal antibodies.

DNA Tests

DNA analysis has distinguished two major types of CLL, with different survival times. CLL that is positive for the marker ZAP-70 has an average survival of 8 years. CLL that is negative for ZAP-70 has an average survival of more than 25 years. Many patients, especially older ones, with slowly progressing disease can be reassured and may not need any treatment in their lifetimes. Most people are diagnosed without symptoms as the result of a routine blood test that returns a high white blood cell count.

Swollen glands

CLL may present with enlarged lymph nodes without a high white blood cell count or no evidence of the disease in the

blood. This is referred to as small lymphocytic lymphoma. In some individuals the disease comes to light only after the neoplastic cells overwhelm the bone marrow resulting in anemia producing tiredness or weakness.
CLL is usually first suspected by the presence of a lymphocytosis, an increase in one type of white blood cell, on a complete blood count (CBC) test. This frequently is an incidental finding on a routine physician visit. Most often the lymphocyte count is greater than 4000 cells per microliter.

Treatment

CLL treatment focuses on controlling the disease and its symptoms rather than on an outright cure. CLL is treated by chemotherapy, radiation therapy, biological therapy, or bone marrow transplantation. Symptoms are sometimes treated surgically with a splenectomy, which is the removal of enlarged spleen that helps to control the number of lymphocytes that are made or by radiation therapy to reduce the size and amounts of swollen lymph nodes with CLL. Initial CLL treatments vary depending on the exact diagnosis and the progression of the disease, and even with the preference and experience of the health care practitioner. There are dozens of agents used for CLL therapy with various associated size effects. Careful watching is along done. Care must be taken to watch and control infections and ways to support the immune system.

The other kind of chronic leukemia

The essential feature of CML is a vastly increased white cell count. Normally, the white cell count is between 5,000 and 10,000, but in CML this count can rise spectacularly, topping 50,000 to 500,000.
CML accounts for about 20 percent of the leukemia cases in the Western world. About six thousand people are newly diagnosed with CML each year in the US. The cause is unknown, although both ionizing radiation and exposure to benzene have been clearly associated with the development of the disease in certain cases. The incidence is climbing: until the mid-nineteen nineties the incidence was less than four thousand per year in the US. It is uncertain whether this increased incidence represents a true increase in the prevalence of the disease, or whether it merely reflects the gradual aging of the population coupled with better diagnostic techniques.
No one is completely sure of the cause and it is very hard to discern what the reasons for the increased incidence are. CML is a disease of middle aged and older patients. The median age of patients with the most common form of CML is 67 years of age. The average survival is four to six years, with a range of less than one year to more than ten years. CML can also occur in children - indeed, two to three percent of all childhood leukemias are CML - but on the whole it has a better prognosis in children than it does in adults.

In CML there is a disturbance in the production of the blood forming cells (known as myeloid precursor cells) in the bone marrow. These precursor cells are also referred to as stem cells or blasts. The disease is characterized by a chronic phase that can go on for months or years, and during this phase there may be few if any symptoms. Often, in fact, the disease is only stumbled upon by accident during a routine physical, when an abnormally high (but symptomless) white blood cell count prompts further investigation.

Within five years of onset, in most cases, the disease progresses to a 'blast crisis', where immature white blood cells are present in large numbers in the bone marrow (over 30 percent). At this point, the disease loses its chronic characteristics and becomes more reminiscent of acute myeloid leukemia. The blast phase of CML is extremely difficult to treat.

Chronic Myelogenous Leukemia is a slow growing type cancer and is of the light colored blood cells. Chronic Myelogenous Leukemia is one of the popular leukemia. Chronic leukemia is sub divided into two types namely chronic myeloid leukemia and chronic lymphocytic leukemia (CLL). The chronic lymphocytic leukemia does involve

lymphocytes as the name suggests and it is type of white blood cell which is central to the body immune system. CML is a type of leukemia that affects the myeloid tissue in bone marrow and this tissue gives rise to white blood cells. CML will appear to be normal and most of the times chromosomal examination needs to be done to establish that there is white blood proliferation due to CML or is it due to infection in the body. The chromosomal examination will also distinguish chronic myelogenous leukemia from another disease called myelodysplasia. The most important feature of CML is that it increases the white cell count drastically. Normally in body the white cell count will be between 5000 and 10000 but it increases to 50000 to 500000 in CML.

In the Western world about 20% of leukemia cases accounts to CML. Every year about 6000 people are diagnosed for CML in the US. The cause of such development is still unknown, but studies and results have shown that ionizing radiation and also due to exposure of benzene are associated with the development of this disease in some cases. The rise in the number of people getting affected from 4000 during late 1990s to 6000 per year is due to the increase in prevalence of CML or it just reflects the aging of population along with better diagnostic findings. As no one is very sure about the real cause of CML it will be hard to discern the reason for the increased incidence. This disease affects middle aged people and old patients. The median age of affected people is 67 years and CML is seen in about 2 to 4% of child population.

The average survival age is four years with a range of less than a year to more than 10 years. The early detection of CML is very vague and the signs and symptoms include fever, losing weight, appetite loss and feeling tired. The patients will also feel the pain below the ribs and sweat during sleep.

In the patient affected by CML there is huge disturbance in the production of myeloid precursor cells also known as blood forming cells in the bone marrow. These blood forming cells are also called as blasts or stem cells. CML disease is characterized by a chronic phase that could prolong from few months to few years and during this phase there may be none or few symptoms showing up. This is generally investigated only when a routine test shows an abnormal white blood cell count. After five years of having CML, the disease becomes a blast crisis where the white blood cells are in large numbers and it becomes more acute and painful during this phase. During the blast phase it will be extremely difficult to treat the patient for the disease.