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What is Chronic Leukaemia?

Chronic leukaemia results from the dysregulated growth of the white blood cells in the bone marrow causing an elevated white blood cell count. It is often associated with reduced haemoglobin and platelet counts due to compromised bone marrow function.

Chronic leukaemia tends to develop over a longer period of time compared to acute leukaemia which develops faster and is generally more aggressive.

Types of Chronic Leukaemia

There are 2 main forms of chronic leukaemia depending on the origin of the white cells affected. Chronic leukaemia can be myeloid or lymphoid in origin.

Chronic Leukaemia of Myeloid origin

Chronic Leukaemia of myeloid origin include:

- Chronic Myeloid Leukaemia (CML)
- Chronic Myelomonocytic Leukaemia (CMML)
- Chronic Neutrophilic Leukaemia (CNL)
- Atypical Chronic Myeloid Leukaemia (aCML)
- Chronic Eosinophilic Leukaemia (CEL)

Chronic Myeloid Leukaemia (CML) can affect patients of all age groups although it is more common in people above the age of 60 years. CML occurs when the bone marrow, the spongy material inside the large bones, produces an abnormally large number of myeloid cells. This results in excessive production of white blood cells which are immature or not fully developed. These immature white blood cells do not function well and also affect the ability of other cells in the bone marrow to function.

What are the signs and symptoms of Chronic Myeloid Leukaemia?

In most cases, CML does not cause any symptoms in the initial stages. The diagnosis is often made during tests performed for other health reasons or screening.

As the condition progresses, patients may develop symptoms such as:

- Tiredness
- Unexplained weight loss
- Excessive night sweats
- Swelling and tenderness in the left side of the abdomen
- Pale skin
- Shortness of breath
- Fever
- Easy bruising and bleeding
- Bone pain
- Frequent infections

Treatment of Chronic Myeloid Leukaemia

Early diagnosis and treatment of CML are vital for achieving better outcomes. The treatment of CML must be started immediately after the diagnosis is made even if the patient does not have any evident symptoms. It can help to slow down the progress of the disease and reduce the risk of complications.

The primary treatment of CML includes the use of oral targeted medications belonging to a class of drugs known as tyrosine kinase inhibitors. Tyrosine kinase is a protein that regulates the growth of white cells, and this protein is mutated in patients with CML. These drugs work by blocking tyrosine kinase, thus inhibiting the growth and multiplication of abnormal white cells.

Imatinib, Dasatinib, Nilotinib, and Bosutinib are the commonly used tyrosine kinase inhibitors for the management of CML. Patients using these drugs should have regular blood tests to assess how the treatment is working. Our haematologist will be able to advise you on which drug is most suitable for your treatment as well as guide you through the management plan and how to monitor for side effects.

Most patients with CML have their condition well controlled by taking these oral targeted medications. However, some patients may need a stem cell transplant, especially if the disease has progressed to an advanced form of CML resulting in severe symptoms and complications.

Chronic Leukaemia of Lymphoid origin

Chronic leukaemia of lymphoid origin include:

- Chronic Lymphocytic Leukaemia
- Hairy Cell Leukaemia
- Large Granular Lymphocytic Leukaemia

Chronic Lymphocytic Leukaemia (CLL) is a common form of chronic leukaemia of lymphoid origin. It affects the blood and bone marrow causing dysregulated growth and multiplication of the group of white blood cells known as lymphocytes. The lymphocytes play a key role in protecting the body against infectious pathogens. The formation of immature lymphocytes in patients with CLL can affect the ability of the body to fight infections which can result in serious complications.

Chronic Lymphocytic Leukaemia usually affects older adults. It is the most common form of blood cancer in the Caucasian population and is less common in Asians.

What are the symptoms of Chronic Lymphocytic Leukaemia?

Most patients with chronic lymphocytic leukaemia do not develop any symptoms in the initial stages. Some patients may develop a few nonspecific signs and symptoms such as:

- Enlargement of the lymph nodes
- Fever
- Fatigue
- Pain in the left upper portion of the abdomen due to the enlargement of the spleen
- Unexplained weight loss
- Excessive night sweats
- Frequent infections

Treatment for Chronic Lymphocytic Leukaemia

The majority of patients with CLL tend to have early stage disease. Many of these patients will not have symptoms and often do not require any treatment.

Patients with more advanced stages of CLL, or those with aggressive subtypes of CLL, are advised to undergo drug therapy to control the progress of the disease.

Treatment of CLL can involve a combination of chemotherapy, targeted drug therapy and immunotherapy – Our haematologist will be able to guide you on whether you require therapy, and which combination of therapies will be most suited to your condition.

Chemotherapy and targeted drug therapies cause destruction of the rapidly-growing cancer cells and limit the spread of the disease.

Immunotherapy can also be effective in the management of CLL. It works by stimulating the functions of the immune system and improves the body's natural ability to fight cancer. Immunotherapy treatment may also make it easier for the immune cells to identify cancer cells and attack them selectively.

A stem cell transplant is advisable in severe cases of CLL. During this treatment, chemotherapy drugs are administered to destroy the stem cells in the bone marrow that are responsible for creating abnormal or immature lymphocytes. This is followed by the infusion of healthy and mature stem cells from a donor. These cells travel to the patient's bone marrow and start producing healthy blood cells.