

## What is leukaemia?

Leukaemia is a cancer that begins in the blood cells. There are three types of blood cells:

- 1 **Red blood cells** – These cells carry oxygen to all parts of body from lungs.
- 2 **White blood cells** – These cells fight against infection.
- 3 **Platelets** – These cells help the blood clot.

All blood cell types are formed by bone marrow, which is the soft material in the centre of most bones. Most blood cells mature in the bone marrow and then move into the blood vessels. Normally, these cells grow and divide to form new cells as the body needs them. When the cells grow old, the new cells take their place. However, in leukaemia, the process goes wrong and the body produces abnormal white blood cells, which do not die and start to crowd out normal red blood cells, white blood cells and platelets.

Leukaemia is either chronic, when the disease is at an early stage and the abnormal cells can still perform the work of normal cells, or acute, where the abnormal cells cannot do any of the work that normal cells do. Chronic leukaemia slowly gets worse and is often discovered during a routine check-up while in acute leukaemia, the situation worsens quickly.

There are four common types of leukaemia:

- 1 **Chronic lymphocytic leukaemia (CLL)** – This

type is most often diagnosed in people over the age of 55 and almost never affects children.

- 2 **Chronic myeloid leukaemia (CML)** – Again, this type mostly affects adults.
- 3 **Acute lymphocytic (lymphoblastic) leukaemia (ALL)** – This is the most common type of leukaemia in children, and can also affect adults.
- 4 **Acute myeloid leukaemia (AML)** – This type occurs in both children and adults.

## What are its symptoms?

The most common symptoms of leukaemia include fever, sweating at night, frequent infections, fatigue or weakness, headaches, unexplained weight loss, loss of appetite, swollen lymph nodes on the neck or in the armpit, swelling in abdomen, bleeding or bruising easily, bleeding in the gums, purple patches or tiny red spots under the skin, and pain in the joints or bone.

Early detection is crucial and while these symptoms are not sure signs of leukaemia, you should consult a doctor if you are experiencing any of these symptoms to have the problem diagnosed and treated. At times, these symptoms are not due to cancer and are a result of other problems such as an infection.

## What are the risk factors associated with leukaemia?

- 1 **Family history** – If you have someone in your family who has had the disease, you are more

likely to develop it.

- 2 **High radiation exposure** – If you have been exposed to very high levels of radiation such as medical treatment that uses radiation, you have a higher risk of developing leukaemia. Radiation used for diagnosis, however, exposes you to much lower levels of radiation and is not linked to leukaemia.
- 3 **Chemical exposure** – If you use or work with certain chemicals such as common pesticides, herbicides especially those containing benzene or formaldehyde, you are at a higher risk of developing this disease.
- 4 **Down syndrome** – Down syndrome and other genetic diseases that are caused by abnormal chromosomes may increase the risk.
- 5 **Human T-cell leukaemia virus - I (HTLV-I)** – This virus causes a rare type of chronic lymphocytic leukaemia known as human T-cell leukaemia.
- 6 **Myelodysplastic syndrome** – People with this blood disease are at an increased risk of developing leukaemia.
- 7 **Electromagnetic fields** – If you have been exposed to electromagnetic fields, a type of low-energy radiation that comes from power lines and electric appliances, you are at a higher risk.

## What tests will I have to take to detect leukaemia?

Your doctor will go through your medical history

and conduct a physical exam first, checking for swollen lymph nodes, spleen, or liver. You will be asked to take a blood test to check your white blood count, level of platelets and haemoglobin. Leukaemia patients will have a high white blood cell count and low level of platelets.

You may also undergo a biopsy, where the doctor will take a sample of bone marrow from your hip bone for examination under a microscope.

Additionally, the doctor may order a chest x-ray or spinal tap test, which checks the fluid that fills the spaces around the brain and spinal cord for leukaemia cells or other problems. A cytogenetics test may be ordered to look for abnormalities in the blood, bone marrow or lymph node samples.

## What is the treatment for this type of cancer?

There are many treatment options for leukaemia patients and the type of treatment used depends on your age, what type of leukaemia you have and whether leukaemia cells were found in your spinal fluid.

Chemotherapy, which uses anti-cancer drugs to eliminate cancer cells, is the most common treatment for leukaemia. Radiation therapy, which uses high-energy radiation rays to destroy cancer cells, is also another option. In some instances, biological therapy is used, where certain substances travel through the blood affecting cells all over the body and improve their defences, naturally fighting the cancer.

Some people with leukaemia have a bone marrow

transplantation, which completely replaces the diseased marrow with clean donor marrow. In this treatment, you are transplanted with healthy stem cells from you yourself or a family member. You will be asked to stay at the Hospital for several weeks or months because you will be at a higher risk of infections and bleeding after this procedure due to a high dose of chemotherapy and radiation you receive prior to the transplant. Over this time, healthy blood cells will be produced by the transplanted stem cells.

## What are the side effects of leukaemia treatment?

Cancer treatment can damage healthy cells and tissues and many undesired side effects are common. Some common side effects associated with each type of therapy are:

- 1 Chemotherapy** – Alongside cancer cells, these drugs destroy blood, hair and cells of the digestive tract. You may feel tired, bruise easily, develop infections, and experience hair loss, mouth and lip sores, nausea, vomiting, diarrhoea or a poor appetite.
- 2 Radiation therapy** – You may feel tired and weak, and the treated area of the skin may become red, irritated, dry and tender.
- 3 Biological therapy** – You may experience rashes, swelling and flu-like symptoms.

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## INFORMATION ON LEUKAEMIA

