A brief note on leukaemia.

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Accepted on December 21, 2020

Description

The uncontrolled growth of blood cells in the bone marrow that lead to increase of cell number in the blood is called Leukaemia. It is sometimes also called as blood cancer, bone marrow cancer. Bone marrow involves in the production of blood cells. Generally the white blood cells or leukocytes show uncontrolled growth that lead to the cancer [1].

Leukaemia is affected to the people over age of 55 years and above but is found in the children under the age of 15 years and below. The national cancer institute survey reveals that more than 60,000 people in the world are diagnosed with the leukaemia out of which 22,000 deaths were occurring. In this article we are going to discuss about the overview of cancer, its causes, risk factors, signs and symptoms, diagnostic methods, types of cancer, and treatment.

Causes

The main cause for the leukaemia is uncontrolled growth that is more number of cell divisions that are leading to the increase in cell count of White Blood Cells (WBC) . The uncontrolled cell divisions are a result of DNA damage that is responsible for expression of cell division of the WBC. These abnormal WBC cells not only increase their number through cell division but also attain mortality by overcoming the Apoptosis. As the bone marrow produces more and more abnormal WBC, these cells outnumber the healthy white blood cells [2].

Risk factors

The main risk factors of leukaemia are exposure to radiation that has ionising power. There are certain viruses that have ability to cause mutation to the DNA of WBC like human T-lymphotropic virus (HTLV-1). The drugs that are used for treating previous cancer like chemotherapy may also be considered as one of the risk factors of the cancer. There are certain heavy chemicals like benzene containing hair dyes, hair sprays which upon exposure may cause cancer. There was another risk factor that is abnormality in the chromosome 21 that have chances of getting mutated that may lead to leukaemia. The blood cancer may also be affected due to low immune power which has more chances of getting infected. The cancer sometimes also caused due to inheritance in cases of ataxia-telangiectasia, Bloom syndrome, Schwachman-Diamond syndrome, Wiskott-Aldrich syndrome [3].

Symptoms

The symptoms for leukaemia may include less clotting capacity in which the injury takes more time to recover from the blood loss, frequently infections due to less immune power, anaemia as the abnormal cells are attacking the other red blood cells. Others symptoms like nausea, fever, chills, night sweats, flu-like symptoms, weight loss, bone pain, tiredness [3].

Diagnosis

There are four categories or types in leukaemia. They are acute, chronic, lymphocytic, and myelogenous. The cancer can be diagnosed by physical examination in which the physician look for skin whether is pale or not as a sign of anaemia, swelling in the lymph nodes, enlargement of liver and spleen. The cancer can also be diagnosed by blood tests to determine the count of cells like erythrocytes and leukocytes. Another diagnostic procedure for testing cancer is bone marrow test in which the tissue in the bone marrow is tested to determine the count of WBC or leukocytes [4].

Treatment

The treatment for leukaemia includes various procedures, chemotherapy is one of common methods applied to treat cancer, and the side effects for the cancer include severe hair loss, weight loss and nausea. There is targeted therapy in which certain drugs like Imatinib are used to attack only on the cancerous tissues rather than healthy cells in order to reduce the side effects. The therapy is interferon therapy in which the drugs help in reducing the metastasis process by which the spread of the cancer to other system is reduced. There is radiation therapy that involves in killing the abnormal tissues of cancer. The treatment also includes surgery that involves in bone marrow transplantation from

a suitable healthy donor. Another method of treatment is stem cell transplantation in which stem cells are injected or places in the bone marrow to increase the production of healthy blood cells [5].

References

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