

# Blood Cancers and treatment in Humans

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### INTRODUCTION

**B**lood cancers are of 3 types, they are 1. leukemia, 2. Lymphoma 3. Myeloma

#### 1. Leukaemia

Leukaemia is a blood cancer that starts in the blood and bone marrow. It happens when the body creates high amount of abnormal WBC cells and interferes with the bone marrow's ability to make red blood cells and platelets.

#### Ionizing radiation of Leukemia

While trying to better understand the basis for the present conception that any ionizing radiation exposure, no matter how small, is linked to an elevated risk of cancer, the authors re-examined the early articles in Science that triggered the regulatory changes and the propagation of this hypothesis.

It recommended the application of a linear nothreshold (LNT) model for assessing the risk of radiation-induced mutations in germ cells. The second was the 1957 paper by Lewis that recommended the LNT model be used for calculating the excess risk of cancer due to any radiation exposure.

#### 2. Lymphoma

Lymphoma is a cancer of the lymphatic system. It develops in lymphocytes, which are a type of white blood cell. These cells help fight disease in the body and play an essential role in the body's immune defenses.

#### Symptoms of lymphoma

The common symptoms of lymphoma are similar to those of some viral diseases, such as the common cold. However, they typically continue for a more extended period. Some people will not experience any symptoms. Others may notice a swelling of the lymph nodes. There are lymph nodes all around the body. Swelling often occurs in the neck, groin, abdomen, or armpits.

The swellings are often painless. They may become painful if the enlarged glands press on organs, bones, and other structures. Some people confuse lymphoma with back pain.

#### Treatment

Treatment is mainly help full for the to avoid or cure the disease with the help of other sources like antibodies and chemicals and radiation

Biologic therapy: using biological agents

Antibody therapy: antibodies(Ig) are involved in this

Chemotherapy: Chemicals plays a main role

Radio immunotherapy: Radiological antibodies are used

Radiation therapy: Radiation

Stem cell transplantation: stem cells

Steroids

Surgery

#### 3. Myeloma

Multiple myeloma is the clonal malignant neoplasm of plasma cells and accounts for almost 10% of all hematologic malignancies. The median age at diagnosis for multiple myeloma is the 6th decade and only 2% of the cases occur in people younger than 40 years of age. The most common symptoms at presentation are weakness and bone pain. 75% of the patients are observed to have anemia, which causes the weakness. Osteolytic lesions are seen in up to 80% of the cases. Less common findings are hypercalcemia and increased serum creatinine levels. High erythrocyte sedimentation rates usually accompany anemia. Immunoelectrophoresis studies have a higher sensitivity for diagnosis than serum protein electrophoresis. The most common subtype of M protein is IgG with 50%, followed by IgA with 20%, light chain with 20%, IgD with 2% and IgM with 0.5%. Non-secretory multiple myeloma is observed in 2-3% of the cases.

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