White Blood Cell Disorders

LEARNING OBJECTIVES

At the end of the lecture student should be able to

- Describe etiology, clinical features, histopathological features of **leukemia**
- Describe etiology, clinical features, histopathological features of **Qualitative Leukocyte Disorders**

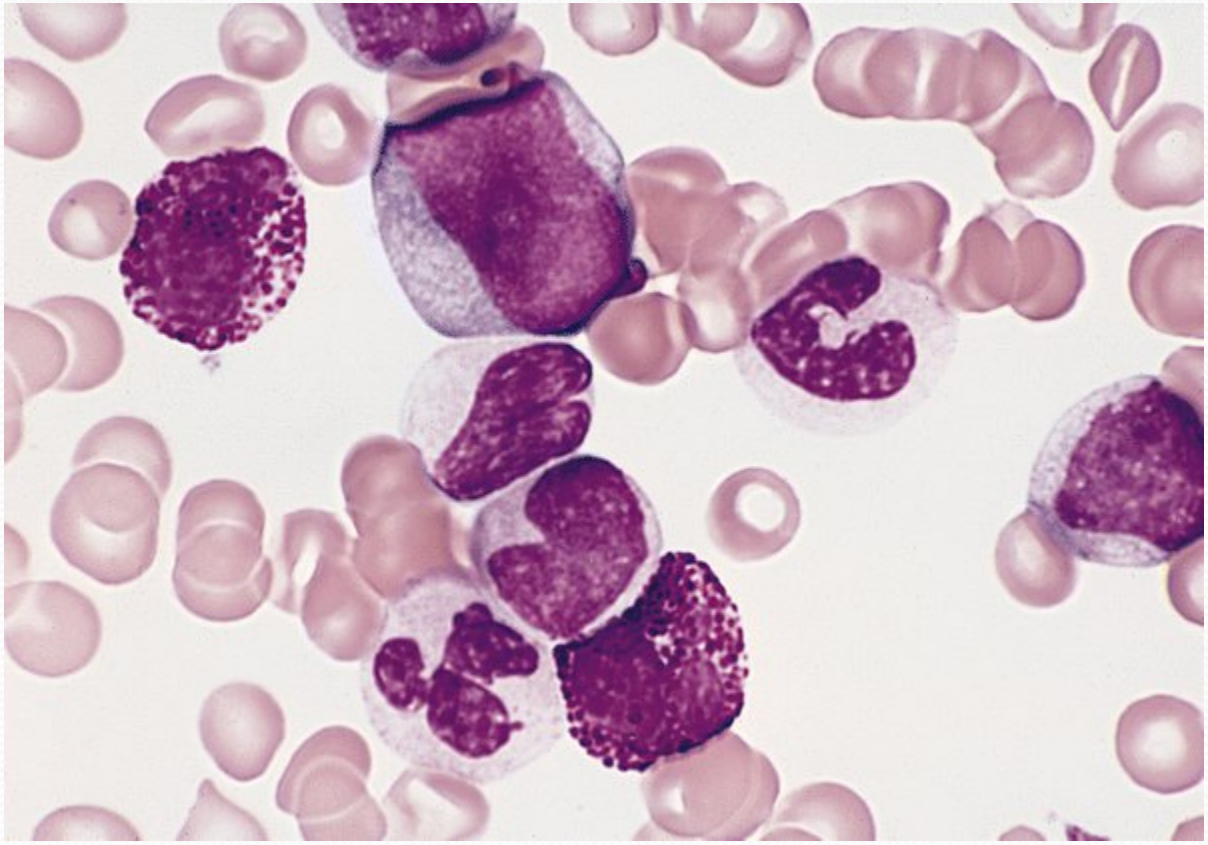
Chronic Myelogenous Leukemia

- 1 of myeloproliferative diseases (PV, ET)
- Proliferation of more mature granulocytes
  - normal to increased platelet count
  - anemia
- Splenomegaly
- t(9;22) (bcr-abl) (Philadelphia chromosome)

Chronic Myelogenous Leukemia

- Long chronic phase
- Blast crisis
- Hydroxyurea, interferons
- Bone marrow transplantation

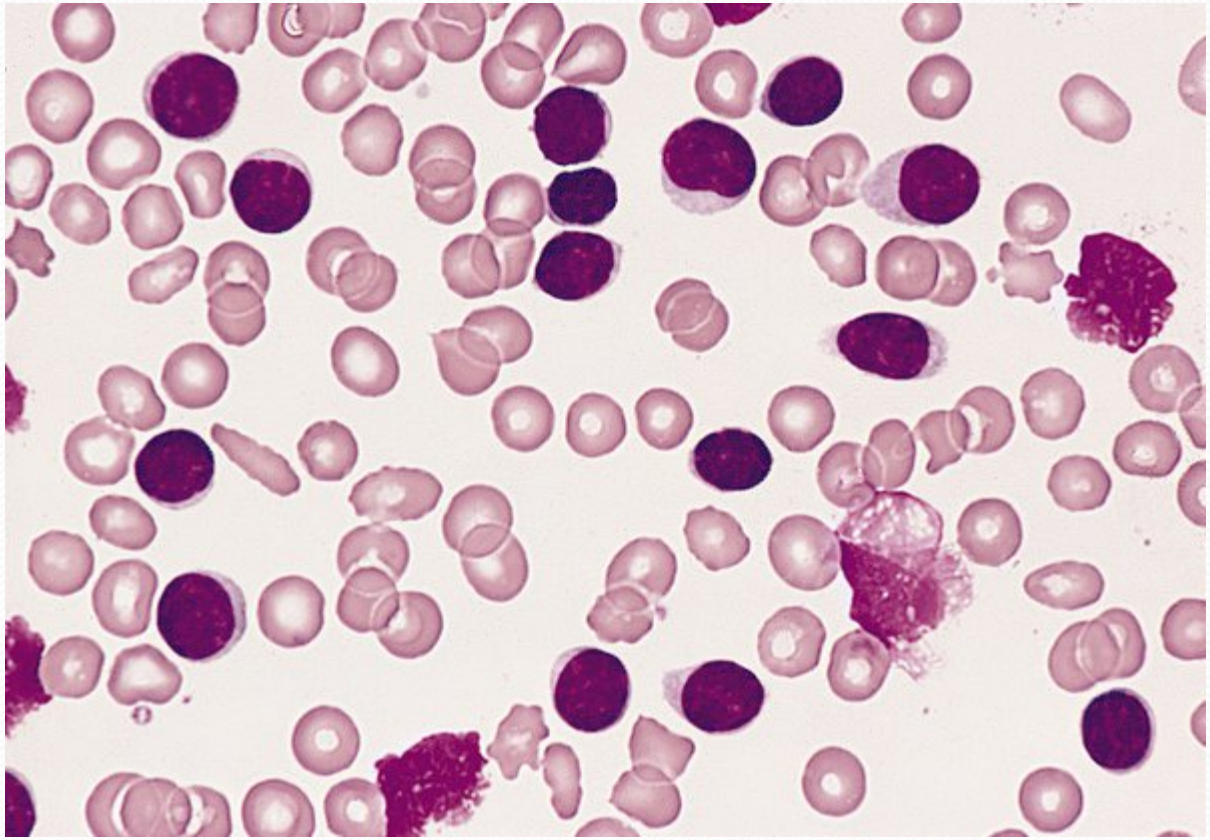
Chronic Myelogenous Leukemia



Chronic Lymphocytic Leukemia

- Proliferation of small mature B-lymphocytes
  - flow cytometry (monoclonal Kappa or lambda)
- Lymphadenopathy
  - relationship to small lymphocytic lymphoma
- May have Ab production and AIHA
- 50% 5-year survival

Chronic Lymphocytic Leukemia



Qualitative Leukocyte Disorders

Lazy Leukocyte Syndrome

- First described by Miller, Oski and Harris in 1971.
- It is a syndrome caused by loss of chemotactic function of neutrophils
- Marrow contains normal number of matured neutrophils, but patients have severe neutropenia because the cells are unable to migrate from the marrow to peripheral blood.
- Infections – as neutrophils fails to migrate at the site of inflammation

Clinical features

- Becomes apparent at the age of 1-2 years when infectious complications begin
- Gingivitis, stomatitis, otitis media and bronchitis
- TLC < 100-200mm ^{3}

Chediak-Higashi syndrome

- Chédiak-Higashi syndrome (CHS) was described by Beguez Cesar in 1943, Steinbrinck in 1948, Chediak in 1952, and Higashi in 1954.
- Chédiak-Higashi syndrome is a rare childhood autosomal recessive disorder that affects multiple systems of the body.

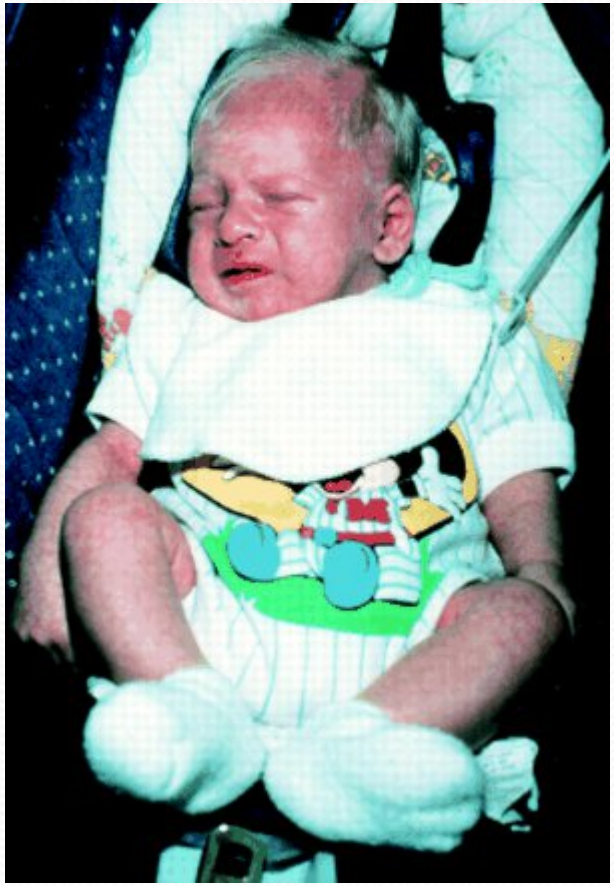
- Patients with Chediak-Higashi syndrome exhibit hypo-pigmentation of the skin, eyes, and hair; prolonged bleeding times; easy bruisability; recurrent infections; abnormal natural killer cell function; and peripheral neuropath.
- Morbidity results from patients succumbing to frequent bacterial infections or to an accelerated-phase lympho-proliferation into the major organs of the body.

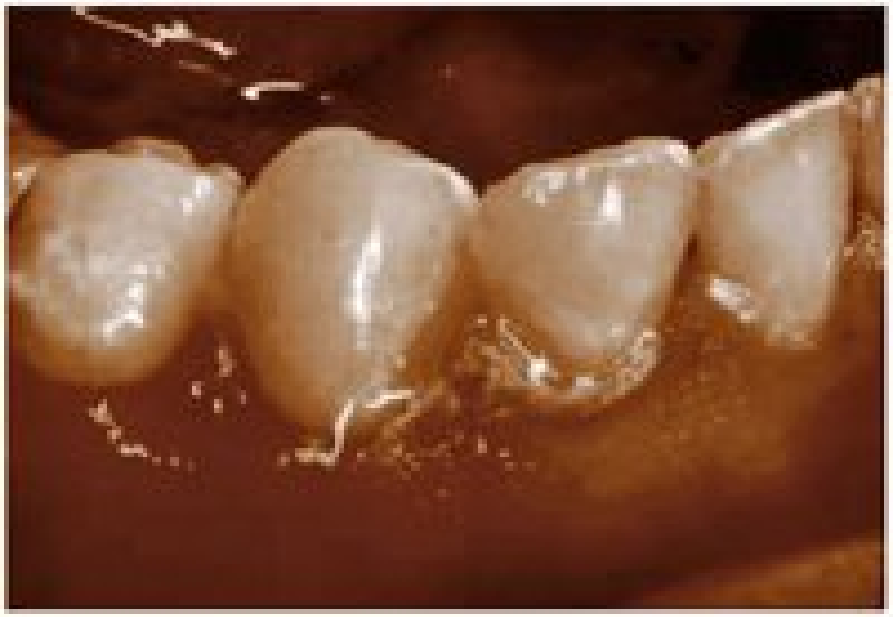
- **Most patients who do not undergo bone marrow transplantation die of a lymphoproliferative syndrome, although some patients with Chediak-Higashi syndrome have a relatively milder clinical course of the disease.**

- Oculocutaneous albinism
- Photophobia
- Nystagmus
- Recurrent infections (usually involving upper respiratory tract & skin)
- Neurological problems
- GI disturbances
- Generalized lymphadenopathy
- Hepatosplenomegaly

- Oral ulcerations
- Glossitis
- Severe gingivitis
- Sometimes associated with lymphoma
- Often fatal in early life as a result of a lymphoma-like terminal phase, hemorrhage, or infection

Early childhood periodontitis and possible increased bleeding





Oculocutaneous albinism

Summary

Student studied etiology, clinical features, histopathological features of :

- **leukemia**
- **Qualitative Leukocyte Disorders**

References

- Basic Pathology. Kumar, Cortan, Robbin. sixth edition.
- Shafers Oral Pathology.
- Basics of hematology. Kwathilkar.3rd edition.
- Neville Oral Pathology


Thank
YOU!