

LEUKEMIA

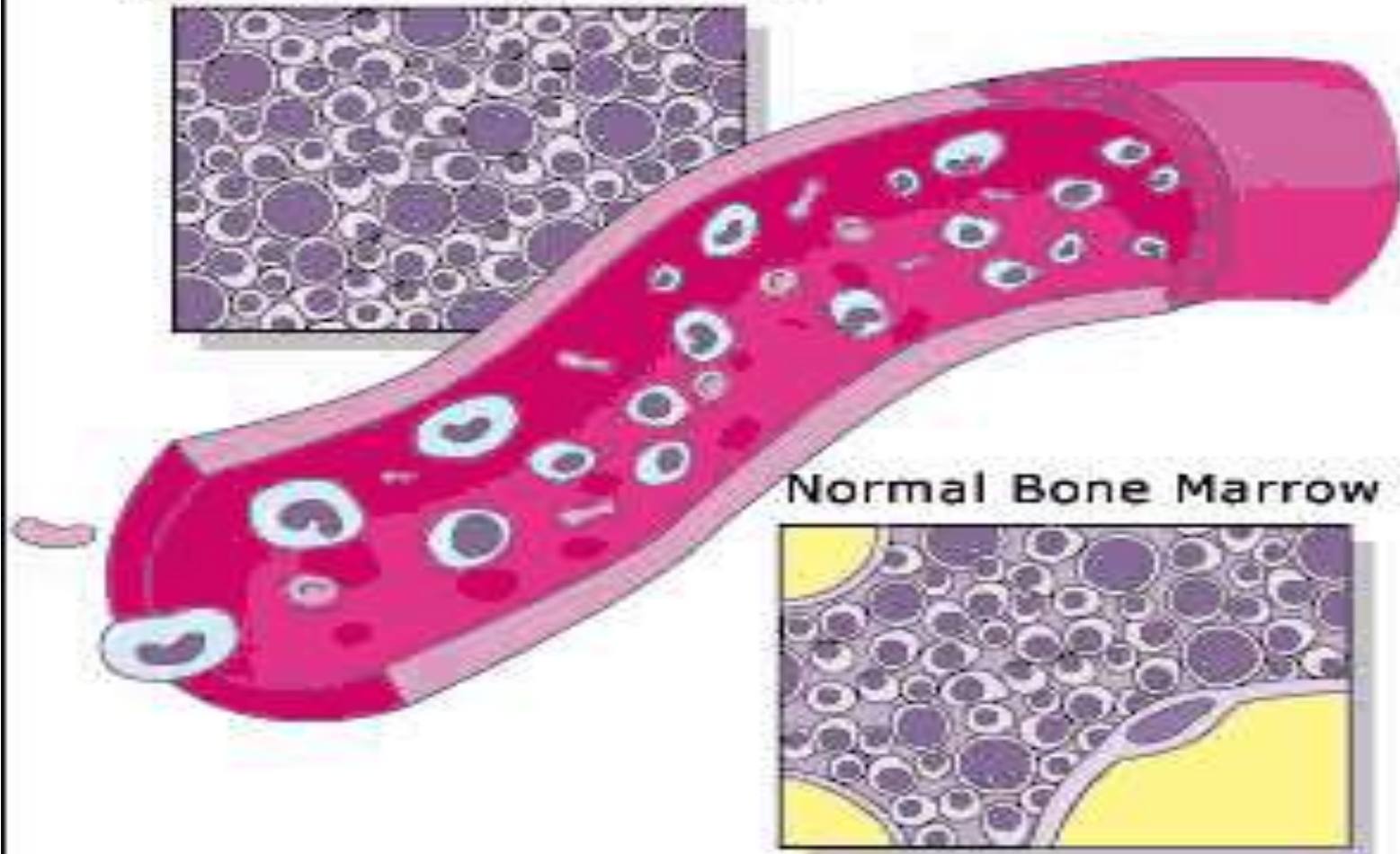


DEFINITION

- Leukemia is a cancer of the blood forming tissues.
- Leukemia is a disease characterized by abnormal proliferation maturation of bone marrow.

Leukaemia

Abnormal Proliferation
of Cells in Bone Marrow



Normal Bone Marrow

INCIDENCE

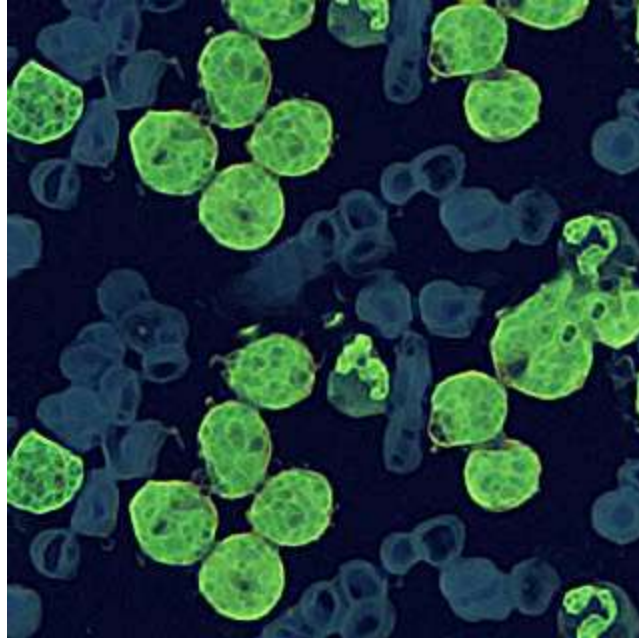
- Peak incidence is 4 years of age.
- Occurs more frequently in boys than in girls after age of 1 years.

TYPES

- Acute lymphoblastic leukemia
- Acute myelogenous leukemia

ACUTE LYMPHOBLASTIC LEUKEMIA

- Most common form of childhood leukemia
- Accounts for 80% of all childhood leukemia



CLASSIFICATION

- T cell leukemia
- B cell leukemia
- Pre B cell leukemia
- Null cell leukemia

ETIOLOGY

- Unknown
- Ionizing radiation
- Toxic chemicals
- Therapeutic irradiation

CLINICAL FEATURES

- BM failure
- Anemia
- Thrombocytopenia
- Neutropenia
- Lymphadenopathy
- Hepatomegaly
- Splenomegaly
- Bone tenderness
- CNS involvement
- Extramedullary involvement

DIAGNOSTIC EVALUATION

- Physical examination
- Peripheral blood smear
- Bone marrow biopsy & aspiration
- Lumbar puncture

MANAGEMENT

- Induction
- Intensification (consolidation)
- CNS Prophylaxis
- Maintenance therapy

INDUCTION THERAPY

- Begins after confirmation of the diagnosis & lasts for 4-6 weeks

chemotherapy	Dose & schedule
Prednisolone	40mg PO days 1-28
Vincristine	1.4mg IV days 1, 8, 15, 22 & 29
Daunorubicin	30mg IV days 8, 15 & 29
L-Asperginase	6000U IM days 2-20
Methotrexate	12mg IT days 1, 8, 15 & 22

CONSOLIDATION THERAPY

Chemotherapy	Dose & schedule
Cyclophosphamide	75 mg PO days 1-7&days15-21
Vincristine	1.4mg IV days 1&15
Cytosine arabinoside	70mg SC every 12 hrs*6doses,days 1-3 & days 15-17
6-Mercaptopurine	75MG po days 1-7 & days15-21

CNS PROPHYLAXIS

- Intrathecal Methotrexate, cytarabine & hydrocortisone

MAINTANANCE THERAPY

CHEMOTHERAPY	DOSE & SCHEDULE
Prednisolone	40mg PO days 1-7
Vincristine	1.4mg IV day 1
Daunorubisine	30mg IV day 1
L-Asperginase	6000U IM on days 1,3,5 & 7
6-Mercaptopurine	75mg PO daily 3weeks out of every four for a total of 12 weeks
Methotrexate	15mg PO once a week

SUPPORTIVE THERAPY

- Blood component therapy
- Detection & management of infectious complications
- Nutritional & metabolic needs to be met
- Psychological support
- Bone marrow transplantation

ACUTE NONLYMPHOCYTIC LEUKEMIA

- Progressive proliferation of immature monocytes & myelocytes from the bone marrow that invade the blood & other tissues.

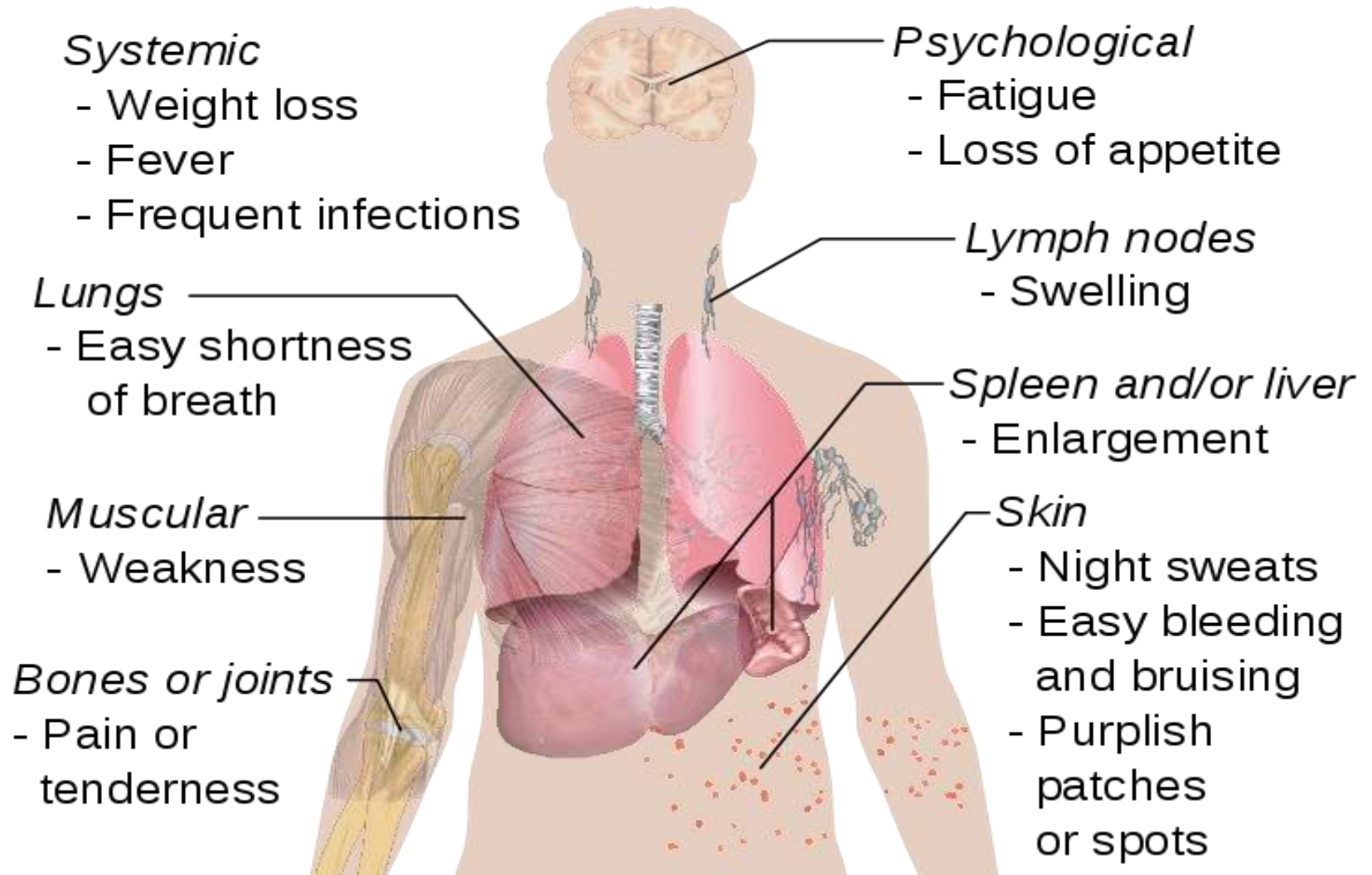
EPIDEMIOLOGY

- AML occur at any age
- Congenital leukemia is mostly AML
- Males & females affected equally
- Etiology is unknown

CLINICAL FEATURES

- Chronic infections
- Fatigue
- Lymphadenopathy
- Bone & joint pain
- Pallor & bruising
- Hepatosplenomegaly
- Ginghival hypertrophy
- Anemia
- Thrombocytopenia
- Neutropenia

Common symptoms of **Leukemia**



MANAGEMENT

- **Induction therapy**-Combination of cytosine arabinoside , doxorubicin & daunorubicin
- **Post-remission therapy**-High dose of chemotherapy including arabinoside & etoposide or bone marrow transplantation
- **Supportive therapy**
 - Blood transfusion therapy
 - Broad spectrum antibiotics

NURSING MANAGEMENT

The nursing care of a child having leukemia is based not only on the sign, symptom, complication of the disease itself but also on the side effect of the drug used in the treatment.

- 1) Protection from infection and treatment of any infection.
- 2) Since the child who has leukemia also has anemia, he gets tired easily and need frequent rest period. He should have well balanced meals, an adequate fluid intake is important.
- 3) Since the child has low platelet count he should be observed carefully for hemorrhage.
- 4) Good oral hygiene is important.

- 5) The child is observed carefully for any indication of CNS involvement such as changes in his behavior, nausea, vomiting, irritability and headache.
- 6) The child must be observed for convulsion and any toxic manifestation of the drug used.
- 7) Bone marrow aspirate is necessary for diagnosis and treatment of leukemia. Bone marrow is obtained from the sternum or iliac crest.
- 8) The child must be given physical and emotional support.
- 9) When the critically ill child lapse into unconsciousness, the nurse must remain with the parents at his bed side so that they know that every thing possible is being done for his comfort.



Thank You!

NURSING PROCESS

- Risk for injury related to malignant process and treatment
- Risk for infection related to depressed body defenses
- Risk for fluid volume deficit related to vomiting
- Altered mucous membrane related to administration of chemotherapeutic agents
- Altered nutritional status; less than body requirements related to loss of appetite
- Impaired skin integrity related to administration of chemotherapeutic agents & radiation therapy

- Body image disturbance related to loss of hair, moon face & debilitation
- Pain related to diagnosis, treatment & physiological effects of neoplasia
- Fear related to diagnostic tests, procedures & treatments
- Divertional activity deficit related to restricted environment
- Altered family process related to having a child with a life-threatening disease
- Anticipatory grieving related to perceived potential loss of a baby

PATHOPHYSIOLOGY

Competition for nutrients

Infiltration & replacement of any tissues of the body with nonfunctional leukemic cells

