



Leukocytosis

Dr N.Obeidi

Bushehr University of Medical Sciences

Leukocytes in Newborn

- Leukocytosis ($30-40 \times 10^3$) 12-14 h
 - Left shift until 4 day
 - Leukoerythroblastic reaction until 1 week
 - Neutrophil is prominent until 1 week
 - Lymphocyte is prominent until 5-6 year
-
- If after of these time is style continues that is:
 1. Infection
 2. Hyposia
 3. hemolysis

Neutrophili

Classification of Leukocytosis (Neutrophili)

- 1-Physiological
- 2-Pathological

Physiological

- 1-Pregnancy
- 2-Stress, Pain, Sport, Epinephrine
- 3-Tissue Damage
- 4-Hemorhasia
- 5-Steroids

Pregnancy

- WBC 12000-18000/ μ l
- ESR 40-50 mm/h
- MCV 6 fl increased
- Toxic changes

Stress, Pain, Sport, Epinephrine

- Immigration of WBC from MGP to CGP
 - MGP (Marginal Granulocyte Pool)
 - CGP (Circular Granulocyte Pool)

Without shift to left & toxic changes

Tissue Damage

1. Burning

2. MI

3. Gout

Steroids

1. Immigration of WBC from BM to PBS
2. Inhibit of WBC exiting from vascular
3. Neutrophilia, lymphocytopenia &
Eosinopenia

Pathological

Pathological

- 1 - Infection
- 2 - Malignancy

Pathological

- Fever

- Leukocytosis

Acquired Neutropenia

1. Infection: CMV, HAV, HBV, HIV, Chickenpox, Influenza, Staph Aureus , typhoid, Brucellosis
2. Drugs: methymazole, phenithiazine, Non steroidal anti inflammatory
3. Autoimmune: Lupus, RA

Lymphocytosis

Lymphocytosis

- 1 - Typical lymphocytosis
- 2 - Atypical lymphocytosis

Typical lymphocytosis

- This type is similar to CLL.
- Include of Infectious Lymphocytosis.
- Most of time WBC count is 20-
 50×10^3 , sometimes is until 100×10^3
- Viral infections: Coxsackie A, Echo virus, Adeno virus 12, Chickenpox
- Pertussis
- Dermatitis
- Lymphoid Leukemia

Pertussis

- Bordetella Pertussis produces Lymphocyte Promoting Factor (LPF)
- LPF cause immigration of lymphocyte from Lymph Nodes to PBS.
- LPF inhibit of lymphocyte come back to Lymph Nodes.

Atypical lymphocytosis

- WBC count is $20-80 \times 10^3$
- Mostly atypical lymphocyte is $> 20\%$
- Atypical lymphocyte is seen in:
 1. TORCH disease
 2. Infectious Mononucleosis
 3. Drug such Dilantin, Para Salicylic Acid

Monocytosis

1. Chronic Infection Diseases
2. Chronic Inflammatory Diseases
3. Immunologic Diseases
4. MDS
5. Hodgkins Lymphoma
6. CML
7. J.CML
8. Carcinoma (Ovarian, Somatic, Brest)
9. Long term usage of steroids

Eosinophili with Neutropenia

- Aspergilosis
- Scarlet Fever
- Chlamydia

