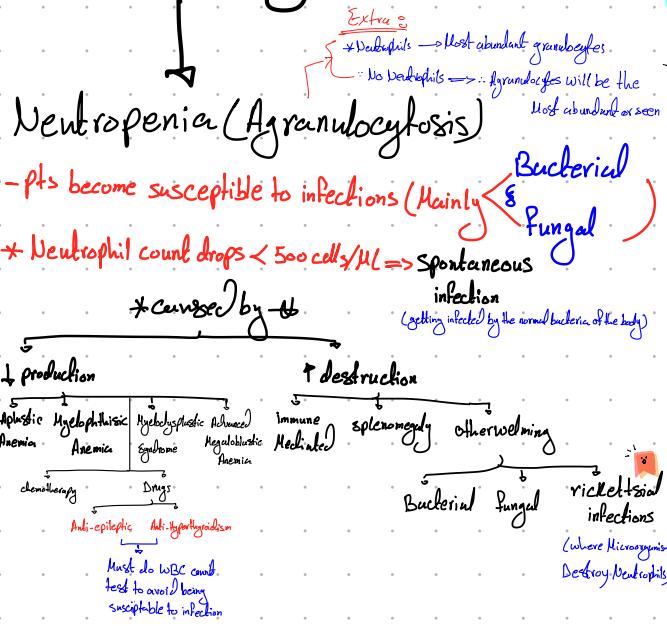


Leukopenia (Deficiency)



white Blood cell Disorders

→ proliferation

(More common than Leukopenia)

Leukocytosis

* ↑ # of WBC in peripheral blood (any cause)

if Benign

More common than Leukopenia

Reactive Leukocytosis

Most common

Neutrophilia
- infection
- inflammation

Lymphocytosis
- viral infection
- Borrelia
- pertussis infection (Bacteria)
- chronic infections (TB, brucellosis)

Monoцитosis
+ non specific cause to chronic ones
- most commonly in chronic infections

Eosinophilia
+ specific causes only
- inflammatory bowel disease
- coeliac disease
- atopic eczema
- some types of neoplasms

Basophilia
- rare
- asthma
- allergic diseases - in Myeloproliferative neoplasms
- drug sensitivity
- parasitic infections
- some types of neoplasms
- Hodgkin's lymphoma

Leukemia

* ↑ # of WBC in peripheral blood

Enlargement of LN

2° to Neoplastic Disease

Reactive Lymphadenitis

Benign proliferation

(Antigenic stimulation)

- 2° to a stimulus (Normal reaction)

* a result of antigenic stimulation in LN that causes enlargement

- can be localized or generalized (in specific LN) (all over the body)

* Enlargement could be *

* painless due to gradual LN enlargement

(chronic enlargement) Chronic Non-specific Lymphadenitis

Acute Non-specific Lymphadenitis

* pts complain of *

Swollen Enlarged Painful LN

(Because of rapid enlargement)

* in severe cases we have 2 indications

Liquefactive Necrosis
Abscess formation

overlying skin is red & may develop a sinus tract

germinal centers in the LN are enlarged
infiltrated by neutrophils (not lymphocytes)

with severe infection
- Liquefactive Necrosis
Develops & may enlarge to form Abscess

* Signs of

* associated with 3 histologic patterns

Most & important

The least common

Follicular Hyperplasia

- dynamic proliferation of B-lymphocytes

* Seen in all

rheumatologic & toxoplasmosis diseases

HIV infection

* T cells affected so B proliferate instead

in peripheral blood

↓ LN

Paracortical Hyperplasia

- proliferation of T-lymphocytes

* Seen in all

viral infections after vaccination Drug reaction

* T cells affected so B proliferate instead

↓ LN

Sinus Histiocytosis

- proliferation of macrophages in LN sinuses

* Seen in adjacent cancer

* Diseases cause Non-specific Lymphadenitis *

Most important & significant one

Cat-Scratch Disease

- Bacterial infection by
Bartonella henselae

- transmitted from Cats

Bite scratch infected saliva

- Most commonly in children

* causes Acute lymphadenitis
in LN's

Neck Axillary area

* symptoms after 2 weeks of
infection

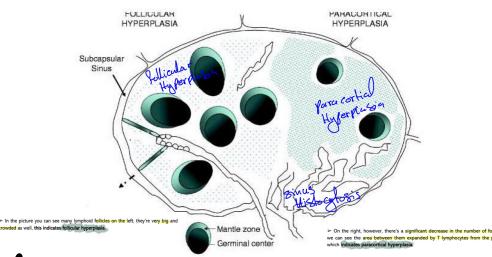
+ Bacteria causes

Liquefactive & then Necrotizing granulomas
Necrosis in LN's

+ mostly self-limited in 2-4 wks

- rarely can disseminate into visceral organs

Uncommon Disease



Hemophagocytic Lymphohistiocytosis (HLH)

- viral or other inflammatory
infection agents

T⁺

Macrophages (histiocytes)

Throughout the body

to Engulf
normal blood cells & their precursors in BM

pts have defective genes related to the function of

cytotoxic T-cells & Natural Killer cells

I. Thus

they are engaged with their target (virus-infected cells) for a long period

release access

interferon- γ

II. T⁺

Macrophages release

IL-6

infants & young children
Adolescents & Adults

- homozygous defects in gene PRF1

II. T⁺
that encodes perforin

an essential enzyme in

cytotoxic & NK-cells
T-cells

* Defective signaling
lymphocyte activation

Molecule (SLAM)-
Associated protein

* Pts have
heterozygous genetic
defects in genes
required for cytotoxic
T-cells

II. inefficient killing of
EBV-infected B-lymphocyte

Systemic inflammatory
response syndrome
(SIRS)

Systemic
TNF causes symptom
of inflammation

SYMPTOMS

- Fever, splenomegaly and pancytopenia
- High ferritin *inflammation*
- High triglyceridemia \rightarrow TNF & IL-6 \hookleftarrow lipase \downarrow \longrightarrow fat accumulation
- High serum IL-2 \rightarrow abnormal immune Activity / (that degrades fat)
- Low level of blood cytotoxic T-cells and natural killer cells
- BM: numerous macrophages engulfing RBCs, platelets and granulocytes