Inflammatory response

1) **Vascular response**
2) **Cellular response**
3) **Wound healing and repair**

Vascular response

A) Transient Vasoconstriction for few minutes immediate by neurogenic and chemical mediators

B) Vasodilatation by histamine cause increase heart rate (hyperemia).

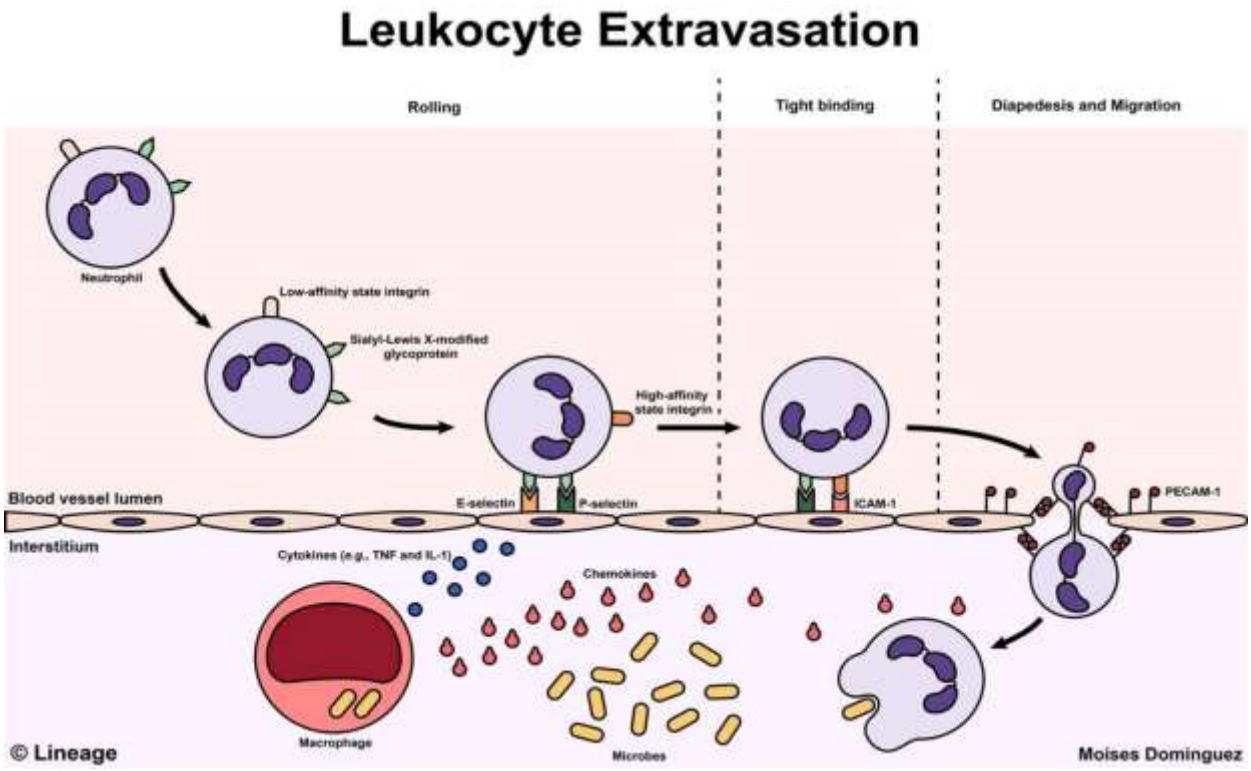
C) Increase blood flow cause Increase permeability led to increase blood pressure

D) Leakage blood fluid with plasma escape from blood vessels cause exudates.

Cellular response: refer to massing of leukocyte mainly neutrophil and macrophage to the site of inflammation to engulf, destroy or weaken of the pathogen.

Extravasations: leukocytes migration, left the lumen of blood vessels, and aggregation in the site of inflammation.

A) Migration
B) Rolling
C) Adhesion
D) Transmigration



Leukocyte extravasation

Leukocyte extravasation (also commonly known as leukocyte adhesion cascade or diapedesis – the passage of cells through the intact vessel wall)

Diapedesis is the movement of leukocytes out of the circulatory system and towards the site of tissue damage or infection.

Types of inflammation depend on exudates

1) Serous inflammation (watery).
2) Fibrous inflammation (fibrin).
3) Purulent inflammation (presence of neutrophil).
4) Hemorrhagic inflammation (RBCs).
5) Lymphocytic inflammation (presence of lymphocyte).
6) Catarrhal inflammation (presence of mucin).

Outcome of acute inflammation

1) Resolution.
2) Prolonged to chronic.
3) Scarring or fibrosis.

Chronic inflammation it's the prolonged duration months or years characterized by infiltration, tissue destruction and repair.

Also called granulation tissue formation due to proliferation of inflammatory cell by (F.C.T) fibrous connective tissue and (BVs) blood vessels.

Granuloma (granulomatous lesion) its necrosis in the center (caseous) surrounded by lymphocyte, macrophages, epetheloid cell, plasma cell, giant cell and encapsulation by F.C.T.

Chronic inflammatory cells are **Macrophage, lymphocyte, plasma cell, epithelial, giant cell and fibroblast.**

Grossly :- nodular lesion in the cut section with presence of cheesy or necrotic material.

Microscopically :-granuloma (accumulation of inflammatory cells) with fibrous tissue.

Healing and tissue repair

It is the process by which the cells in the body regenerate and repair to reduce the size of a damaged or necrotic area and replace it with new living tissue.

The replacement can happen in two ways: by regeneration in which the necrotic cells are replaced by new cells that form similar tissue as was originally there; or by repair in which injured tissue is replaced with scar tissue fibrous connective tissue. Most organs will heal using a mixture of both mechanisms.

Healing:- it's the process occur after injury and the body overcome the infected agent. Healing include two types:-

A) **Regeneration**: healing by the same destroyed cell.

B) **Repair**: healing by proliferation by F.C.T.

Healing process (regeneration)

1) Removal the product of inflammation.
2) Repair of damage tissue by the same lost cells and remodeling.

Repair process

1) Formation of new blood vessels angioplasty (endothelial cell)

2) Migration of fibroblast from margin to infected area.

3) Collagen deposition.

4) Maturation and reorganized by F.C.T called remodeling.