

Immunity

Cell-mediated

Humoral

4H8C

B lymphocyte bind Ag -> Plasma cell -> Ab

Type I (Immediate hypersensitivity/ Allergy)

- IgE mediated

- Systemic anaphylactic rxn

1st exposure

Bind Ab to mast cell

2nd exposure

Immediate

Late phase

1. Sensitized mast cell
bind Ag

recruit eosinophils

2. Granulation + release
mediators

same symptoms, last longer

Clinical features

H&L: Edema, Mucus
Secretion, Sm spasm

Eosinophil damage epithelial cell,
activate mast cell

Recruited cell amplify& sustain
response w/ additional exposure

Mediators

Primary

Lipid

1. Vasoactive amines
(Histamine)

1. Leukotrienes

2. Enzymes

2. Prostaglandin D2

3. Proteoglycans

3. Platelet-activating factor

Cytokines

--> TNF, IL-1, Chemokines

Acquired Immunodeficiency syndrome

- Opportunistic infection from HIV (intravenous injection)

- Bind & kill CD4+

- HIV infect CD4+ helper T lymphocytes, Dendritic cell& macrophages

Hallmark

- Loss of 1. Cell-mediated & 2. Humoral immunity

Type 2 (Antibody-mediated)

- Incompatible blood transfusion

Cell destruction by

1. Opsonisation& Phagocytosis

2. Inflammation

3. Cellular dysfunction

Type 3 (Immune complex-mediated)

- Deposition of insoluble Ag-Ab complexes

Phase I: Formation of blood-borne complex

II: Deposition in tissues& Activate complement

III: Attract leukocytes& Vessel+Tissue injury

Type4 (T cell-mediated)

Direct CD8+

Attack all infected cell w./ recognised Ag

Delayed CD4+

Activated T cell release damaging cytokines

Autoimmunity (Systemic Lupus Erythematosus)

Ag: Self cells e.g. Nucleus

Ab: Autoantibodies

- ANA, Antiphospholipid, Anticytoplasmic

Clinical expression

Rejection of tissue transplants

- After allografts

- Immune system react w./ foreign MHC -> reject& destroy

- Cell-mediated hypersensitivity & Humoral response

- Inflammation, necrosis & organ destruction