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. Leukotrients
2. Enzymes	2. Prostaglandin D2
3. Proteogycans	3. Platlet-activiating 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 allocrafts
- Immune system react w./ foreign MHC -> reject& destroy
- Cell-mediated hypersensitivity & Humoral response
- Inflammation, necrosis & organ destruction