

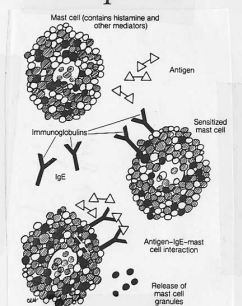
NURS 821 Advanced
Pathophysiology
Margaret H. Birney PhD,RN

Lecture 3 Mechanisms and
Manifestations of Disease (cont'd)
Part 1 Immune Hypersensitivity
Reactions

Type I Hypersensitivity
Response-Anaphylaxis

- Cause-foreign protein (antigen)
- IgE mediated
- Mechanism-IgE attaches to surface of mast cells and AG, triggering release of intracellular granules from mast cells
- Examples-Hay fever, allergies, eczema, asthma, hives, anaphylactic shock

Type I Hypersensitivity
Responses



Urticaria

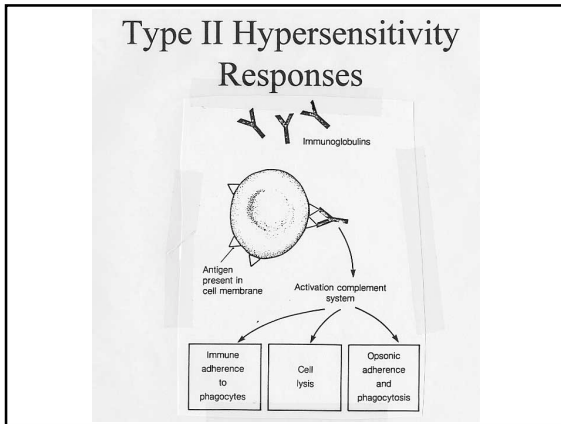


Eczema



Type II Hypersensitivity Response-Cytotoxic Hypersensitivity

- Cause-AG
- Antibody-IgG or IgM
- Mechanism-AB reacts with AG activating complement causing cytolysis or phagocytosis
- Examples-Transfusion reaction, hemolytic drug reactions, erythroblastosis fetalis, hemolytic anemia, vascular purpura, Goodpasture's syndrome



Hypersensitivity response

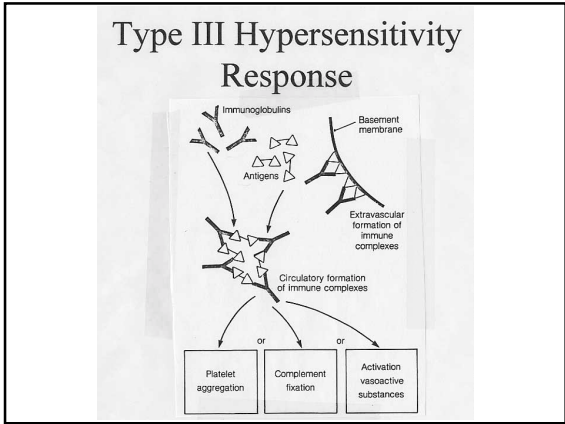
Type II Hypersensitivity Response

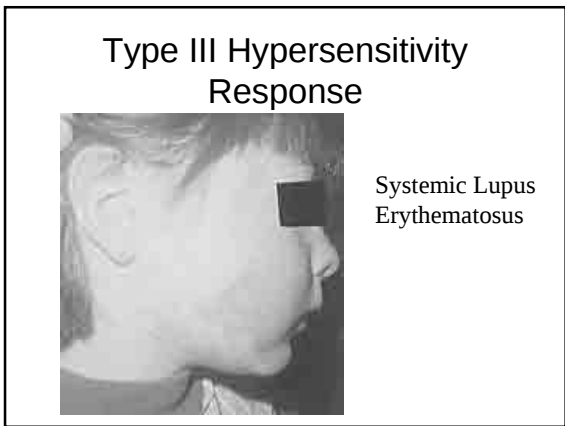
Rh Incompatibility

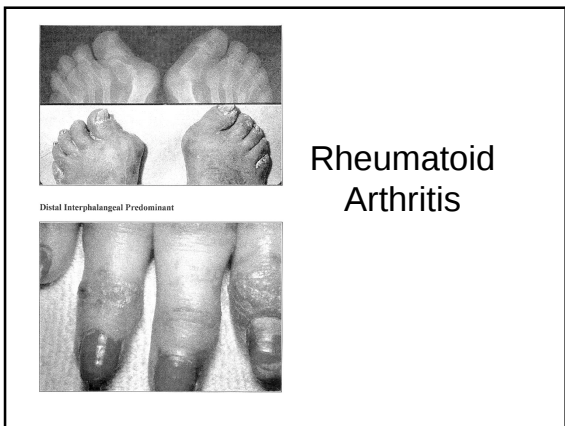
The diagram on the left, titled "Prevention of Rh incompatibility," shows a sequence of events in a pregnant woman. It illustrates the process of sensitization during a first pregnancy (Rh- mother, Rh+ fetus) and how this leads to a second pregnancy (Rh- mother, Rh+ fetus) where the mother's immune system attacks the fetus's red blood cells, causing hemolytic disease of the newborn. The diagram shows the mother's blood, the fetus's blood, and the placenta, with arrows indicating the flow of blood and the presence of Rh factor.

Type III Hypersensitivity Response-Immune Complex Disease

- Cause-AG
- Responsible Antibody-IgG
- Mechanism-AG-AB complexes precipitate in tissues, activating complement, causing inflammatory response
- Examples-Rheumatoid arthritis, systemic lupus erythematosus, serum sickness



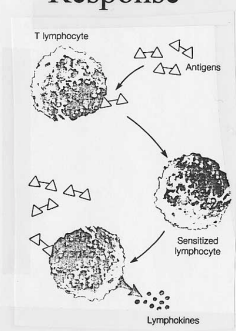




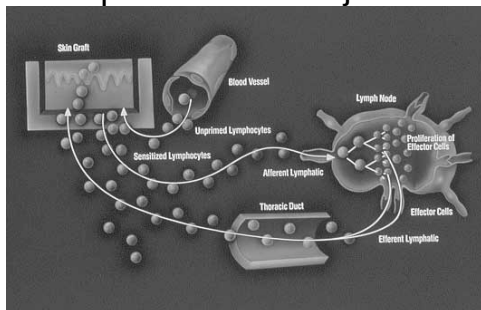
Type IV Hypersensitivity Response-Delayed/Cell Mediated

- Cause-Foreign protein, cells, or tissue
- Mediated by T lymphocytes
- Mechanism-Sensitized T cells react with specific AG, inducing inflammatory response through direct cellular action or lymphokine activity
- Examples-Contact dermatitis, transplant graft reaction

Type IV Hypersensitivity Response



Type IV Hypersensitivity Response: Graft Rejection



Type IV Hypersensitivity
Response: Contact Dermatitis