

Hypersensitivity Type III

Hypersensitivity Type III reaction occurs due to circulating antigen-antibody immune complexes that deposit in various locations (especially vessel walls) and cause inflammation. It can result in systemic (i.e. Serum sickness) or local immune complex disease (i.e. Arthus reaction).



PLAY PICMONIC

Immune Complex

Moon-Antibody-Complex

Antibody circulating within blood vessels attaches to antigen forming circulating immune complexes that then deposit in various locations.

Antigen-antibody (IgG) complex activates complement

Ant-gem Ant-tie-body and Gold Globulin-goblin Hugging and Complimenting

These immune complexes activate complement via antibody binding to Fc receptors of leukocytes. This results in inflammation.

Neutrophils release lysosomal enzymes

Nude-trojan Spraying Lysos-bottle

Inflammation occurs due to neutrophil release of lysosomal enzymes and reactive oxygen intermediates.

Examples

Arthus Reaction

Artist Painting

This is an example of a local immune complex disease that usually occurs in the skin.

Serum Sickness

Syrup sickness

This is an example of systemic immune complex disease that occurs due to a patient receiving non-human animal serum in significant amounts.

Systemic Lupus Erythematosus (SLE)

Loopy-butterfly

This is a chronic type of serum sickness that occurs due to antibody formation against nuclear antigens.