Hypersensitivity Type II

This is a reaction due to antibody binding with cellular antigens, which leads to opsonization and phagocytosis, complement-mediated inflammation and cellular dysfunction.



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Cytotoxic
Side-toe-toxic
This reaction is cytotoxic to cells as cells become opsonized by antibody leading to phagocytosis or cell lysis without phagocytosis via antibody-dependent cellular cytotoxicity (ADCC).

IgM or IgG antibody-mediated
Mountain Globulin-Goblin and Gold Globulin-Goblin
IgM or IgG antibody binds to antigen on the cell, coating it. This leads to the reactions that ensue.

Membrane Attack Complex (MAC)
MAC-gun
IgM or IgG antibodies on the cell surface may activate the classical pathway of the complement system which can lead to opsonization and phagocytosis and formation of the membrane attack complex, which punctures cellular membranes leading to osmotic lysis.

Mechanism

Opsonization
Ops-signing
Antibody binds to antigens on cells thus opsonizing them. Phagocytes recognize this and phagocytose these cells, thus destroying them.

Complement Activation
Complimenting
The complement system is activated due to antibody on the surface of cells leading to cellular lysis with phagocytosis and inflammation.

NK Cells
NK Lime-Assassin Executioner
These are the primary cells responsible for antibody-dependent cellular cytotoxicity (ADCC).

Testing

Direct Coombs test
Direct-route Comb
This is used to test for autoimmune hemolytic anemia. Best testing for the presence of antibodies bound to the patient’s red blood cells.

Indirect Coombs Test
Indirect-route Comb
This is used to test if you have a reaction to a blood transfusion by testing for the presence of unbound antibody in the patient’s serum.

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