Aplastic anemia

Aplastic anemia (AA) is a disease in which the bone marrow, and the blood stem cells that reside there, are damaged.

This causes a deficiency of all three blood cell types (pancytopenia): red blood cells (anemia), white blood cells (leukopenia), and platelets (thrombocytopenia).

Aplastic refers to inability of the stem cells to generate the mature blood cells.

It is most prevalent in people in their teens and twenties, but is also common among the elderly. It can be caused by exposure to chemicals, drugs, radiation, infection, immune disease, and heredity; in about half the cases, the cause is unknown.

The definitive diagnosis is by bone marrow biopsy; normal bone marrow has 30-70% blood stem cells, but in aplastic anemia, these cells are mostly gone and replaced by fat.

First line treatment for aplastic anemia consists of immunosuppressive drugs, typically either anti-lymphocyte globulin or anti-thymocyte globulin, combined with corticosteroids and cyclosporine. Hematopoietic stem cell transplantation is also used, especially for patients under 30 years of age with a related, matched marrow donor.