

Infections Transient, mild blood count depression is frequent in the course of many viral and bacterial infections. Aplastic anemia can rarely follow infectious mononucleosis. Parvovirus B19 does not usually cause generalized bone marrow failure.

Immunologic Diseases Aplasia is a major consequence and the inevitable cause of death in *transfusion-associated graft-versus-host disease* (GVHD) that can occur after infusion of nonirradiated blood products to an immunodeficient recipient. Aplastic anemia is strongly associated with the rare collagen vascular syndrome eosinophilic fasciitis that is characterized by painful induration of subcutaneous tissues ([Chap. 360](#)). Thymoma and hypogammaglobulinemia are occasional associations with aplastic anemia. Pancytopenia with marrow hypoplasia can also occur in systemic lupus erythematosus (SLE).

Hepatitis Posthepatitis marrow failure accounts for ~5% of etiologies in most series. Patients are usually young men who have recovered from a bout of liver inflammation 1–2 months earlier; the subsequent pancytopenia is very severe. The hepatitis is seronegative (non-A, non-B, non-C); intensive laboratory efforts including deep sequencing have not disclosed an infectious agent, and the hepatitis is presumed to be immune-mediated. Fulminant liver failure in childhood can follow seronegative hepatitis, and marrow failure occurs at a high rate in these patients.

Pregnancy Aplastic anemia very rarely may occur and recur during pregnancy and resolve with delivery or with spontaneous or induced abortion.

Paroxysmal Nocturnal Hemoglobinuria An acquired mutation in the *PIG-A* gene in a hematopoietic stem cell is required for the development of PNH, but *PIG-A* mutations probably occur commonly in normal individuals. If the *PIG-A* mutant stem cell proliferates, the result is a clone of progeny deficient in glycosylphosphatidylinositol-linked cell surface membrane proteins ([Chap. 100](#)). Small clones of deficient cells can be detected by sensitive flow cytometry tests in one-half or more of patients with aplastic anemia at the time of