Transfusions Encyclopedia Article

Transfusions

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Contents

Transfusions Encyclopedia Article.....1

Contents.....2

Transfusions.....3

Transfusions

Transfusions most commonly involve the addition of whole **blood**. Blood components such as red blood cells and **plasma** are also capable of being used in transfusions. For example, the transfusion of plasma infuses the body with factors such as **platelets**, which are vital for the clotting of blood.

The intent of transfusion with whole blood or with blood components is to replace blood or its particular constituent that has been lost by injury, or to replace blood that is functionally defective with blood that contains a full functional complement of cells. Blood can become functionally defective after **chemotherapy**, because of defects in blood cell production in the bone marrow, or because of medical conditions like hemophilia (a blood clotting disorder) or **sickle cell anemia**.

Transfusion carries a risk of **immune system** reaction against a foreign antigen in the added fluid. This can occur, for example, if blood of type A is given to someone whose blood is of type B. Severe illness of even **death** can result. Those belonging to the blood group designated as O-negative are called universal blood donors. The blood from these people may be transfused to anyone regardless of their blood type.

Over 90% of the complications from blood transfusions are attributable to the presence of white blood cells, and the viral agents they may carry, in the transfused blood. Evidence is mounting that filtering blood to reduce or eliminate white blood cells prior to transfusion is a recommended course of action.

Transfusions also carry a risk of the so-called graft versus host reaction. Here, the donated blood cells attack the recipient.

Another risk from transfusions is the transmittance of an infectious agent to the patient. For example, in the 1980s, thousands of patients in the United States and Canada received blood contaminated with the viral agents of hepatitis or acquired immunodeficiency syndrome. Improved molecular-based screening methods have virtually eliminated this possibility.

The possibility of immune reaction to the transfused fluid can be reduced greatly by the use of a patient's own (also called autologous) blood or blood products. This can be an option with prior knowledge of an operation requiring transfusion. However, and unexpected or emergency need for a transfusion necessitates the use of blood or blood product from a "bank" of available supply.