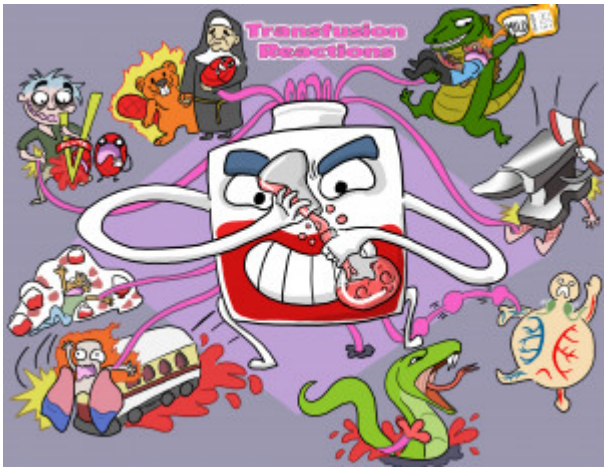
Transfusion Reactions

Transfusion reactions can range from mild to severe and vary in their types. It is important to be aware of the different types of reactions and assess any patient carefully, especially during the initial administration of blood products. The first line management in any transfusion reaction is to stop the infusion, be sure to maintain an IV line with normal saline, and notify the health care provider immediately.



PLAY PICMONIC

Acute Hemolytic

Acute-angle with Hemolysing RBCs

These reactions usually develop within the first 15 minutes. They result in chills, fever, lower back pain, flushing, tachycardia, tachypnea, hematuria/oliguria, decreased BP, and possibly acute renal failure. A hemolytic reaction may also lead to DIC and death.

Febrile, Non-Hemolytic

Fever-beaver with Nun RBCs

The most common type of reaction. These reactions most classically appear with a sudden fever rising more than 1 degree and chills, along with headache, flushing, anxiety, vomiting, and muscle pain.

Mild Allergic

Mild Allergy-alligator

This reaction is minor and only requires a temporary stop of the infusion. A mild allergic reaction manifests as flushing, itching or pruritus, urticaria or hives.

Anaphylactic

Anvil-axes

An anaphylactic reaction requires having epinephrine ready for injection and manifests quickly as anxiety, urticaria or hives, difficulty breathing often with wheezing, bronchospasm, hypotension, shock, and possible cardiac arrest.

Circulatory Overload

Circulatory-system Overloaded

This occurs when a volume of blood is administered that is larger than the circulatory system can handle. Circulatory overload manifests with difficulty breathing, cough, dyspnea, pulmonary congestion, adventitious breath sounds, headache, hypertension, tachycardia, and distended neck veins.

Sepsis Reaction

Sepsis-snake

This occurs when bacteria have contaminated the blood products and is also known as septicemia. Patients will often have a rapid onset of chills, high fever, warm skin, vomiting, diarrhea, and severe hypotension, which may lead to shock.

Transfusion-Related Acute Lung Injury (TRALI)

Trolley Lungs

This may occur as white blood cells release cytokines which increases capillary leakage. This increases the amount of fluid in the lungs causing noncardiogenic pulmonary edema. The pulmonary fluid causes frothy sputum, dyspnea, and eventually hypoxemia and respiratory failure. Patients may also have a fever and hypotension.

Massive Blood Transfusion

Massive-amounts of Blood Transfusion-IV

Electrolyte disturbances are the major concern for patients who receive large volumes of blood via transfusion. Citrate is a compound added to blood products to prevent coagulation prior to administration. In large volume transfusions citrate toxicity can lead to transient hypocalcemia. While blood products are stored, the red blood cells may leak potassium and when infused cause hyperkalemia. If the blood products are not warmed prior to administration, the patient may experience hypothermia.