

## **Blood transfusion disadvantage:**

### **A. Transfusion Reactions**

#### **1. Acute hemolytic –**

Symptoms: chills, fever, pain in the chest or lower back, flushing of the face, hematuria, tachycardia, tachypnea, hypotension, dyspnea, bleeding, acute renal failure, shock, severe respiratory or cardiac collapse.

Cause: ABO incompatible red cells, red cell antibodies in patient's plasma attached to antigens on transfused red cells causing red cell destruction.

#### **2. Febrile, non-hemolytic –**

Symptoms: Fever (rise of 1 C or 2 degrees F), chills, headache, flushing, anxiety, rigors, and muscle pain.

Cause: Release of interleukins from lysed white cells in the blood product.

#### **3. Mild allergic –**

Symptoms: flushing, itching, urticaria (hives).

Cause: Sensitivity to foreign plasma proteins or blood product preservative.

#### **4. Anaphylactic –**

Symptoms: anxiety, urticaria, wheezing, laryngeal edema, progressing to cyanosis, shock, and possible cardiac arrest.

Cause: Severe sensitivity to foreign plasma proteins or blood product preservatives, especially patient who developed anti-IgA antibody to IgA plasma protein.

### **B. Transfusion Complications:**

#### **1. Circulatory overload –**

Symptoms: dyspnea, pulmonary congestion (rales), headache, hypertension, tachycardia, distended neck veins.

Cause: Fluid administered faster than circulation can accommodate.

## 2. Sepsis –

Symptoms: Rapid onset of chills, high fever, vomiting, diarrhea, and marked hypotension and shock.

Cause: Contaminated blood products.

3. **Transfusion-related acute lung injury**, commonly called TRALI. Clinical signs and symptoms of 1 to 2 degree/s C rise in temperature, usually accompanied by chills or rigors, shortness of breath associated with oxygen destruction hypotension, and tachycardia. Reaction symptoms are noted between one to six hours after completion of transfusion. Chest x-ray shows interstitial and alveolar infiltrates which are diffuse and bilateral (ARDS-like). TRALI cases are associated with presence of HLA antibodies or anti-neutrophil antibodies in plasma of the blood donor.

4. **Delayed transfusion reaction** – Delayed hemolysis from destruction of transfused red cells by alloantibodies not detected during pre-transfusion compatibility testing.

5. **Transmission of infectious disease** – hepatitis, HIV, CMV (Cytomegalovirus), HTLV-I/II (Human T-cell lymphotropic virus, Malaria, Babesiosis, West Nile Virus, Creutzfeldt Jakob Disease (CJD), and other potential infectious agents.

6. **Iron overload** (patients receiving >100 units for chronic anemia)

7. **Graft-versus-host disease**