



# KNOW ABOUT BLOOD TRANSFUSION



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DIGITAL VERSION

A blood transfusion occurs when a person receives human blood through an intravenous (IV).

Human blood is made up of many components. Three main components of blood may be transfused.

**1. RED BLOOD CELLS** - RBC carry oxygen throughout the body. All of the body's organs (especially the heart, lungs, brain, kidney) need oxygen to work properly.

**2. PLATELETS** - Platelets are small sticky cells that the body needs to start blood clotting mechanism, and this mainly prevents or stops bleeding.

**3. PLASMA** - Plasma is the fluid component of blood. It is mostly water but also has a number of proteins that help blood to clot.

#### WHO NEEDS A BLOOD TRANSFUSION?

- You may need a blood transfusion because of illness, surgery, or injury.
- A blood transfusion may be given because of a shortage of red blood cells in the blood, either because the body is not making enough of them or because of blood loss.
- Sometimes the bone marrow, which produces blood cells, fails to work properly and is unable to make enough of them. This may be due to disease or as a result of treatments, such as chemotherapy.
- Haemolytic anaemias like thalassemia and sickle cell anaemia
- Bleeding disorders due to thrombocytopenia or haemophilia

#### WHAT ARE THE BENEFITS OF BLOOD TRANSFUSION?

- Blood transfusion can save a patient's life and limit the complications of severe blood loss.
- Blood transfusion benefits patients by treating or preventing following situations.
- A lot of bleeding can lead to a seriously low haemoglobin level and cause damage to body organs due to a lack of oxygen. If bleeding continues the platelets and plasma volumes are also decreased. Then, blood cannot clot, and bleeding will not stop.

#### WHAT IS NEEDED BEFORE TRANSFUSION?

- You will have a blood test to determine your blood type. This is necessary to know what kind of blood your body will accept and to match it to the donor blood.

#### WHAT ARE THE RISKS OF BLOOD TRANSFUSION?

- Blood products are very carefully cross-matched to the patient's blood type. But sometimes, it's difficult to obtain fully cross-matched blood products. In rare occasions transfused blood can also have effects on your immune system. Side-effects could include: IMMEDIATE / DELAYED AND NON-IMMUNOLOGIC

#### IMMEDIATE

- Haemolytic transfusion reaction- Immune destruction of red cells occurs due to the incompatibility of transfused red cells to the recipient's plasma

- Immune mediated platelet destruction-Due to the allo antibodies in the recipient
- Febrile Non-Haemolytic reaction- Temperature rise of more than 1 Degree or 2 F during or 4 hours after transfusion
- Allergic reactions- Occurs due to mild or self-limiting urticaria which usually responds to antihistamines.
- Anaphylactoid/Anaphylactic reactions - May present with Hypotension / Nausea / Vomiting / Diarrhoea / Abdominal pain / Severe dyspnoea / Laryngeal edema / Bronchospasm
- TRALI-Transfusion related acute lung injury-Acute onset of Hypoxemia and non- cardiogenic pulmonary edema occurring within 6 hours of blood or blood component transfusion in the absence of other causes of acute lung injury or circulatory overload.

#### DELAYED

- Mainly occurring due to the previously transfused red cell all immunised patients in whom antigens on transfused red cells provoke anamnestic production of antibody.
- Iron overload - Occurring due to chronic repeated transfusions.
- Alloimmunisation to antigens of red cells/white cells/platelets/plasma may occur unpredictably after transfusion
- PTP-Post transfusion purpura occurs dramaticsudden and self-limited thrombocytopenia
- TAGVHD-Transfusion associated graft Vs host disease - Is rare but with a fatality rate of 100% due to the overwhelming infection in the setting of pancytopenia

#### NON-IMMUNOLOGIC COMPLICATIONS

- TTI-Transfusion transmitted infections-Transmission of Virus/Bacteria/Parasites/vCJD
- Bacterial sepsis
- TACO-Transfusion associated circulatory overload-Complication of blood transfusion leading to the cardiogenic pulmonary oedema occurring due to the excessive volumes of blood and blood product transfusion.
- Hypothermia-Occurs due to rapid infusion of cold blood and blood products
- Metabolic Complications-May accompany large volume transfusions especially in neo-nates s and patients with liver/Kidney disease.

Few other risks of transfusion-transmitted disease for each unit of blood are:

- HIV (AIDS) about 1 in 4 million
- Hepatitis C about 1 in 3 million
- Hepatitis B about 1 in 1.2 million
- West Nile Virus about 1 in 1 million

All blood units are carefully screened to exclude any transmissible pathogens as far as possible.