



INFORMATION FOR PATIENTS AND FAMILIES ABOUT ALTERNATIVES TO BLOOD TRANSFUSION

Fractionated Blood Products

Plasma fractions are blood products extracted from human plasma collected from many blood donors. The plasma is pooled and then separated into different parts. The process of separation is called fractionation.

Cryoprecipitate

- Cryoprecipitate is extracted from plasma and contains substances (clotting proteins) important for blood clotting such as fibrinogen, factor 8 and von Willebrand factor.
- Transfusion of cryoprecipitate may be necessary to prevent or stop bleeding in patients with slow blood clotting.

Albumin

- Albumin is a protein from human plasma that may be given to increase the amount of fluid circulating in the blood.

Plasma derived factor concentrates

- These are also known as clotting factor concentrates and are used to stop bleeding.

Immune globulins

- Immune globulins contain antibodies and are used to prevent or fight infections.

Fibrin sealants

- Fibrin sealants are clotting factors that are used as a medical glue to seal wounds or stop bleeding during surgery.

DRUGS

The medications listed below can be used to minimize or help to avoid the need for blood transfusion.

Erythropoietin

- This medication stimulates the body to produce more red blood cells which can decrease the need for blood transfusion. Some formulations contain traces of albumin but most do not. It is generally started a few weeks before surgery and given once a week by subcutaneous injection (under the skin).

Recombinant clotting factors

- These clotting factors are made in a lab using recombinant DNA technology and therefore do not contain human blood products. These medications are used to prevent or stop bleeding.

PROCEDURES

These medical procedures involve using a patient's own blood. A physician must explain exactly what is involved to ensure that it is acceptable to the patient.

Pre-operative autologous blood donation



- The patient's own blood is collected into a special bag. The process starts approximately 4 weeks prior to surgery. A patient must be first assessed by a healthcare professional to ensure the donation procedure is safe for the patient. The patient's own blood is stored in a hospital transfusion medicine department and given back to the patient if needed during the time of the surgery.

Acute normovolemic hemodilution

- Hemodilution is a process that involves collecting approximately 2 units of the patient's own blood. This occurs in the operating room just before the surgery starts. The blood is replaced with an IV solution such as normal saline or other solutions not containing blood. This causes the remaining blood in the patient to become diluted so that fewer blood cells are lost when bleeding occurs. This process can be done maintaining a continuous circuit.

Intraoperative cell salvage

- A device called the cell saver is used to collect shed blood from a wound or body cavity. The patient's shed blood is then washed, filtered and transfused back to the patient. This process can be done maintaining a continuous circuit.

Controlled hypotension

- This is a process whereby the anesthetist immediately or during the surgery uses medications to lower the blood pressure. This reduction in blood pressure often decreases the amount of surgical bleeding.

PROCEDURES FOR BLOOD PROCESSING

These procedures are usually used to treat certain conditions or illness. The cardiopulmonary bypass machine temporarily takes over the function of the heart and lung and is often used during open heart surgery.

Cardiopulmonary bypass

- Is a procedure where the patient's blood is diverted through an artificial heart lung machine where it is oxygenated and returned back to the patient in a continuous circuit.

Hemodialysis

- Involves using a dialysis machine that replaces the function of the kidney in patients who have kidney failure. The dialysis machine filters and cleans the patient's blood before returning it to the patient in a continuous circuit.

Plasmapheresis

- Involves using a device that withdraws blood from the patient. The patient's blood is filtered by the device to remove plasma. A plasma substitute is added for replacement and the blood is returned back to the patient. Sometimes human plasma is used. In some cases albumin or a volume expander can be used depending on why the plasmapheresis treatment is needed. It is a continuous circuit procedure.