Transfusion Alternatives for patients who refuse blood and blood products

Department of Haematology
Patient Information Booklet

This information is for patients who refuse blood and blood products and it explains the alternatives to blood transfusions. There are two main methods used as alternatives to transfusions. There are also drugs (medicines) that can be used to prevent / manage blood loss. This booklet tells you about each alternative and explains the safety issues of each one.

Drugs used to prevent / manage blood loss as transfusion alternatives

The following information covers a few examples of common drugs used as transfusion alternatives. The use of such drugs depends on the type of surgery you will be having and also your current medical condition. Your medical team will talk to you about the use of such medicines and other treatments.

Tranexamic Acid (Cyklokapron)

This medication is used to prevent heavy bleeding from dental extractions and nose bleeds in particular. It works by increasing clot formation and is useful in stopping severe blood loss during and after surgery. The drug can be given orally (by mouth) or intravenously (by injection). As with any medicine there are side effects. The main side effects of Tranexamic acid are:

- nausea
- vomiting
- diarrhoea

Novoseven

Novoseven is a blood coagulation (thickener) factor (ingredient). It works by making the blood clot at the site of bleeding when the body’s own clotting factors are not working. It can be used to treat severe bleeding episodes and to prevent excessive bleeding during surgery. It is usually given by injection. Again as with most drugs, Novoseven can have side effects. Common side effects include:

- rash
- fever
- nausea
Erythropoietin

Erythropoietin is a naturally occurring hormone produced by the kidneys. It stimulates the body to produce more red blood cells and is used to treat anaemia. It is widely used as a transfusion alternative. It is usually given by injection between one and three times per week. Side effects of erythropoietin include:

- high blood pressure
- skin reactions
- headaches
- bone pain
- flu-like symptoms

As with all medicines there are risks associated with taking or receiving such drugs. The side effects listed alongside each drug are those which have been reported by patients who have received the medication and listed by the manufacturer as possible side effects. Patients can react differently to medicines and the risks and benefits of each of the listed medicines will be explained by your Consultant or a member of his team.

Fibin Sealants

Evicel is a medicine that is used as a sealant (glue). The substances in Evicel, fibrinogen and thrombin, are natural substances obtained from human plasma (the liquid part of the blood). It is used by surgeons to reduce local bleeding during an operation when standard techniques are not sufficient. Evicel can also be used in addition to sutures (stitching) during vascular surgery (surgery on the blood vessels).

Plasma (volume) expanders

A volume expander is a type of blood substitute that has the function of providing volume for the circulatory system. It may be used for fluid replacement in the event of blood loss. There are two main types of volume expanders; crystalloids and colloids. Crystalloids are solutions of mineral salts or other water-soluble molecules. Colloids contain larger molecules, such as gelatin. Product names include; Gelofusine, Volplex, Haemacell.

Iron treatments

Iron deficiency anaemia is a common anaemia that occurs when iron loss (often from intestinal bleeding and/or the dietary intake or absorption of iron is insufficient. In such a state, haemoglobin, which contains iron, cannot be formed. If the cause is dietary iron deficiency, eating more iron-rich foods such as beans and lentils or taking iron supplements, such as Ferrous Sulphate will correct the anaemia. Iron can also be administered by an infusion (drip) in some cases of severe iron deficiency.
Methods used as transfusion alternatives

Intra-operative cell salvage

What is cell salvage?

Cell salvage is a method of collecting blood loss during an operation and giving it back to the patient. When cell salvage is used, blood that is lost during the operation is collected into a machine (see picture below). This filters and washes the blood to remove any contaminants. The blood can then be given back to the patient during the operation or afterwards. The advantages of this are that the patient is given a transfusion of their own blood. Cell salvage is deemed acceptable by many as it does not involve transfusion of blood from an unknown donor.

How safe is it?

It is a procedure that is now very common in modern healthcare. There have not been any reports of any serious adverse incidents. The National Institute for Clinical Excellence (NICE) has issued guidelines

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