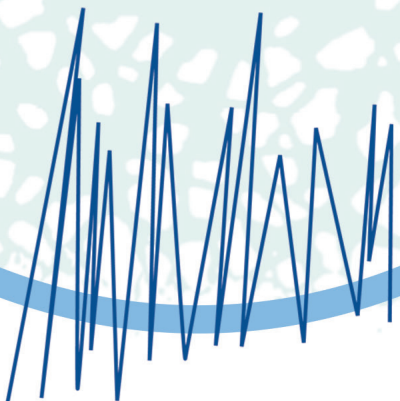
NHS
Royal Papworth Hospital
NHS Foundation Trust

Guide for patients who refuse blood

A patient's guide



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Introduction

You have been given this information leaflet as you told the team looking after you during your treatment at Royal Papworth Hospital that you have specific wishes concerning blood transfusion.

Although we appreciate that many patients may already be well informed about the different components and products, and potential alternatives available, it is important that we help make sure that all patients have enough information to help them make an informed choice, and that the teams looking after you have clear information about your final decisions.

This information leaflet is a brief introduction to the different options. The doctor looking after you will explain further when they are discussing your treatment.

Please note: this leaflet does not replace a discussion with your doctor, but is given as supplementary advice.

If there is anything you do not understand, it is essential that you ask the doctors looking after you to explain further. This will help prevent any misunderstandings at a time when a clinical decision may need to be made quickly.

In addition, if time permits, the doctor looking after you should have made the haematology medical team aware that you are or may be imminently receiving treatment at Royal Papworth Hospital. You can also specifically ask to be reviewed by the consultant haematologist or deputy, who specialises in transfusion and its alternatives.

Explanation of transfused blood

It is important for patients to understand that we do not transfuse patients' 'whole blood'. Donors donate whole blood, but this is separated out into its components (as described below), so that patients are only transfused the blood component of which they have become deficient.

- **Red cells** transport oxygen around the body. If you become deficient in red

cells, the side effect can range from mild tiredness through to death.

- **White cells** are part of your immune system and help you fight infections. It is very rare for patients to be transfused white cells. It is highly unlikely, if not unheard of, that you would require a white cell transfusion during your treatment at Royal Papworth Hospital.

- **Platelets** are essential to help prevent and stop you from bleeding. If your platelet levels drop significantly there is a risk of spontaneous bleeding, particularly in critical sites such as the brain or eyes, or significant surgical bleeding which may be difficult to control and result in severe side effects or death.

- **Plasma** has many functions but one important one is to stop you bleeding. Therefore, if you become deficient in plasma, you are at risk of bleeding that is difficult to control and may result in severe side effects or even death.

- **Cryoprecipitate (fibrinogen)** is a substance found in plasma that isimportant to stop bleeding. Thus if you become deficient in fibrinogen you are at risk of bleeding that is difficult to control and may result in severe side effects or even death.

For any of the above, the doctor looking after you will explain the particular risks for you in more detail.

Plasma may be given in its crude, whole form, as 'fresh frozen plasma' (frozen after donation and then defrosted prior to transfusion). Additionally, plasma may be further processed into several different forms for transfusion, depending on the patient's clinical need. The information below explains this in more detail.

Plasma products

There are a number of plasma products available in the UK, all of which originate from human plasma. These products are unlike the crude plasma components discussed above as they undergo further processing steps.

To produce these 'plasma products', individual plasma donations are taken from paid donors in Europe or the United States. These donations are then pooled into large batches of up to 20,000 donors, which are then subject to a complicated production process. This process involves the addition of chemicals, changes in temperature and physical separation techniques. This concentrates the proteins that are the essential building blocks which help prevent or stop bleeding.

The majority of plasma products have been treated to reduce the risk of any infectious agent by techniques known as pasteurisation (heat process), microfiltration (separation step) or the addition of detergent. After this treatment the product is then either frozen for thawing when needed, or lyophilised (turned into a powder) for reconstitution when needed.

When patients are bleeding, giving plasma products can help to get bleeding under control. In an emergency they may be life-saving for a patient who has lost a lot of blood, those whose blood has become very dilute or where they have been treated with blood thinning agents, such as drugs to prevent blood clots.

Before, during or after your surgery your doctor may consider giving you the following plasma products, depending on your individual circumstances:

- **Prothrombin complex concentrate, fibrinogen concentrate or antithrombin concentrate.** These products are lyophilised and then mixed with water to enable them to be given by injection when required.

- **Solvent detergent treated fresh frozen plasma.** This product is frozen and then defrosted when required.

Fibrin glues

Fibrin glues, also known as fibrin sealants, are substances that can be applied to tissue sites or skin to help 'glue them together' to control bleeding and promote wound healing. Fibrin glues are mainly derived from human plasma, and once applied require 'activation' by applying a substance called thrombin, which is sourced from human blood and chemically processed.

Human albumin solution

Albumin is a protein found in plasma and has a number of important roles within the body. Human albumin solution may be given to patients for a number of reasons, one of which is to maintain circulating blood volume. It is an essential part of the anaesthetic protocol for some procedures. Your surgeon will be able to explain this in more detail if this is required in your case. Albumin undergoes the same production process as the clotting products detailed above and is stored as a clear liquid.

Recombinant Factor VIIa (rVIIa)

This is the only product issued by the transfusion laboratory for patients at Royal Papworth that is **not** derived from humans. It is made in a laboratory using recombinant genetic production techniques so that at no point is it in contact with human blood. It is usually only used to treat exceptional uncontrollable bleeding that has become immediately life-threatening, at the discretion of consultants as there are risks associated with its use. It is, however, important that if you are having surgery, your surgical team is clear as to whether it could be used in the event where your life is at risk and there is no alternative.

Non 'transfusion' alternatives

Surgical techniques

In addition to the above 'components and products' which can be administered to you with your consent, if you are having surgery there are a number of surgical techniques which your surgeon may use to help reduce the amount of blood that you may lose. Your surgeon will discuss these with you further, but a more common one, 'cell salvage', is described below.

Cell salvage

This is a technique where any of your own blood that you may lose is suctioned (collected) into a machine, which then cleans and filters it, enabling your own red cells to be returned to you.

There are two different methods of doing this and you will be asked by your surgical team to confirm which, if any, you would be willing to accept.

1. Open circuit cellsalvage

With this technique, any collected and cleaned red cells are held in a collection reservoir in a machine by your bedside and then transfused back to you, if and when required. However, the time interval is only a matter of hours, i.e. although the salvaged red cells are not directly connected to you they are not stored away from you for re-infusion days later.

2. Closed circuit (or closed loop) cell salvage.

With this technique, any collected and cleaned red cells are immediately re-infused to you through a continuous 'closed circuit' thus although your blood does leave the body, this is only for a very short time.

Acute normovolaemic haemodilution

Dependent on the procedure, your anaesthetist and surgeon may be able to reduce the amount of haemoglobin lost with every drop of shed blood. Whether this is a suitable intervention is something you need to discuss with your surgeon. As part of this procedure some of your blood is removed into a container and stored outside your body during the procedure and returned to you at the end.

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