Jehovah's Witnesses

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Abstract

The Jehovah's Witness Society is a Christian movement established in the 1870s. It has around 8 million members worldwide who believe that the Bible prohibits the transfusion of blood and its primary components. Some minor components of plasma and clotting factors may be acceptable to some members of the faith. Similarly, some will accept intraoperative cell salvage where their own blood from the surgical site can be aspirated and returned to them provided the blood remains within a closed circuit and is never stored. A competent adult may refuse or accept any treatment without giving a reason. These wishes must be respected and followed even if the patient's life is at risk. Senior medical staff must be involved in the care of Jehovah's Witnesses from the outset. They must employ any techniques which will optimize the patient's haemoglobin and minimize blood loss. This ranges from iron and erythropoietin preoperatively and postoperatively, to careful patient positioning and choice of anaesthetic technique as well as meticulous haemostasis by surgeons. Alternatives to red blood cells remain elusive despite years of research. Following significant blood loss any patient who refuses a blood transfusion is likely to require critical care, possibly for a prolonged period.

Keywords Blood transfusion; bloodless surgery; erythropoiesis stimulating agents; informed consent; intraoperative cell salvage; Jehovah's Witnesses

Royal College of Anaesthetists CPD Matrix: 1F01; 1F04; 1F05

Learning objectives

After reading this article, you should be able to:

- discuss the limitations placed upon you when looking after Jehovah's Witnesses presenting for surgery
- describe the techniques and options best suited to these patients in terms of both anaesthetic and surgical management to minimize blood loss
- optimize the patient's haemoglobin prior to elective surgery
- respect a patient's wishes even when their life may be at risk

The Jehovah's Witness Society is a Christian denomination, founded in 1872 in Pittsburgh, USA. There are currently more than 8 million Jehovah's Witnesses worldwide with over 130,000 in the UK. Jehovah's Witnesses believe that the bible prohibits the consumption, storage and transfusion of blood and its associated products (Genesis 9:3,4; Leviticus 17:11,12; Acts 15:28,29).[1] This belief was adopted in 1945 and has been reviewed regularly by the Watchtower Society who have ultimate authority over all issues of doctrine. Initially vaccines and organ transplants were also forbidden but are now generally accepted. As anaesthetists and critical care physicians looking after patients of the Jehovah's Witness faith who refuse blood and blood products we can face significant ethical challenges.

Blood products

The transfusion of whole blood, red cells, white cells, platelets and plasma are unacceptable to Jehovah's Witnesses. This religious belief is non-negotiable. Neither will they accept their own blood if it has been donated prior to surgery and stored. There are, however, some minor components of plasma (albumin, cryoprecipitate or immunoglobulins) and various clotting factors which are not completely forbidden and may be acceptable to some individuals. Similarly, intraoperative cell salvage, cardiopulmonary bypass or haemodialysis are frequently found to be acceptable to individuals since the blood remains in continuity with the patient throughout the procedure (Table 1).

Consent

In a competent adult the principle of informed consent is broadly based upon two premises:

1. That the patient has the right to receive sufficient information to make an informed choice about the treatment recommended.
2. That the patient may choose to accept or decline the physicians recommendations

A competent adult may therefore refuse or accept any treatment without giving a reason, even if such a choice puts his or her life at risk. As doctors we must respect the patient's wishes and ensure confidentiality.[2] We must also accept that patients have the right to change their mind at any point during their treatment and we must be open and non-judgemental in their care. To many Jehovah's Witnesses the consequences of accepting a blood transfusion may be worse than death itself. If

Blood products and whether they may or may not be acceptable to Jehovah's Witnesses

Prohibited/always unacceptable	A matter of personal choice
• Whole blood	• Albumin
• Red cells	• Immunoglobulins
• White cells	• Clotting factors
• Platelets	• Intraoperative cell salvage
• Plasma	• Cardiopulmonary bypass
• Autologous predonation	• Haemofiltration or haemodialysis (although in chronic renal failure peritoneal dialysis should be 1st choice)
	• Epidural blood patch — using a closed system
	• Bone marrow and solid organ transplants

Table 1

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we do not respect their wishes then we are potentially acting unlawfully and unethically and could face criminal proceedings as well as referral to the General Medical Council (GMC).

Many Jehovah's Witnesses make advance directives stipulating that they do not want blood or blood products even in an emergency situation when their life is at risk. They are encouraged to carry a copy of this document and have a copy kept by their General Practitioner. In an emergency situation where the patient is unable to express their own wishes then this document should be obtained as soon as possible.

Children

Children of Jehovah's Witnesses may present for surgery in which clinically significant blood loss is anticipated. In elective surgery this is likely to involve the courts of law which is beyond the scope of this article. In an emergency life-threatening situation the GMC guidelines on personal belief and medical practice (published in 2013) are clear that clinicians may provide treatment that is immediately necessary to save life or prevent deterioration in exceptional circumstances even against the wishes of a person with parental responsibility.[3]

Clinical management

Preoperative

Elective surgery requires meticulous planning. Both surgeon and anaesthetist must meet with the patient to discuss surgery and its associated risks. In an open, non-judgemental fashion they must ascertain exactly what the individual patient finds acceptable and unacceptable. This should take place well in advance of surgery to allow sufficient time for optimization of the patient's haemoglobin should it be required. A discussion should include the consideration of the alternative techniques of surgery and whether the procedure can be effectively performed in stages or by a minimal access technique. These patients are generally very well informed and the discussion and conclusions should be documented and witnessed. The patient may wish to have a family member or their religious advisor present during this discussion. Each hospital will have access to a representative from the religion through the local Jehovah's Witness hospital liaison committee. They will also have their own consent and refusal document for blood transfusions.

Since preoperative Hb is a predictor of the need for transfusion[4] we should ensure that these patients start with an adequate Hb. We should aim for at least 130 g/l in both men and women. At referral the Hb, ferritin, B12 and folate should be checked. These results will determine which patients will benefit from a course of iron and/or erythropoiesis stimulating agents. If ferritin is below 100 ng/ml then they should start oral iron therapy 4–6 weeks preoperatively. If time is short or oral therapy is ineffective or not tolerated then IV Iron should be used. If ferritin is above 100 ng/ml but Hb less than 130 g/l they require both an erythropoiesis stimulating agent (ESA) and oral iron. ESAs have a number of potential side effects including hypertension and thrombosis which will limit their use in patients over 70 years.

Also at this planning stage drugs which are associated with increased bleeding should be stopped if possible prior to surgery. A comprehensive review of the patient's current medication with respect to agents that may exacerbate surgical bleeding (e.g. NSAIDs, aspirin, anticoagulants) is required. A perioperative plan can be instituted that includes the timing of the reintroduction of such agents and the use of low molecular weight heparin in the prophylaxis of venous thromboprophylaxis.

Intraoperative

The main goal is to minimize blood loss and surgeon and anaesthetist must work together to achieve this. 'Bloodless surgery' is a term used to describe what we should be doing to minimize blood loss in all our patients, not just those who refuse blood. This includes patient positioning, use of a tourniquet if appropriate, minimal access surgery, arterial embolization by an interventional radiologist if appropriate, use of the harmonic scalpel, fibrin glue and, above all, meticulous haemostasis.

As an anaesthetist we can influence blood loss by our choice of anaesthetic technique. Regional techniques, particularly spinals and epidurals in joint replacement surgery are associated with less blood loss. Using hypotensive anaesthesia will also reduce intraoperative blood loss. Deliberate hypotension is generally defined as a 30% reduction from baseline MAP or a MAP of 55 mmHg provided vital organ perfusion is also maintained. Multiple drugs and techniques are available to achieve this reduction but in clinical practice it is most commonly achieved using the predictable hypotensive effects of our anaesthetic agents.

The use of antifbrinolytics such as tranexamic acid may reduce blood loss and in patients where we don't have the option to transfuse them they may well be worth using. Inadvertent hypothermia and the associated coagulopathy must also be avoided.

Although autologous blood where the patient donates their own blood to be stored in the weeks prior to surgery is forbidden for these patients many will accept intraoperative cell salvage. This is a technique widely used in vascular and orthopaedic surgery where blood from the operative site is aspirated into a pump, washed and reinfused to the patient. This may not be appropriate in all surgery and may not be acceptable to all patients but worth consideration where significant blood loss is anticipated.

In the **emergency** situation where there is major blood loss, for example after trauma or from a major GI bleed the principles of resuscitation remain - stop the bleeding as soon as possible and replace circulating volume with crystalloid and colloids as appropriate.

Postoperative

Blood loss needs to be carefully monitored and if any ongoing bleeding occurs it needs to be acted upon promptly. In some situations (e.g. after cardiac surgery or knee replacement) there are systems which can allow blood drained from the wound to be collected and returned to the patient unprocessed but only if acceptable to that individual.

It is important to consider the appropriateness of anticoagulants in the postoperative period and to avoid unnecessary blood tests, even using paediatric blood bottles if possible.

Much lower transfusion thresholds have become acceptable in recent years. There are multiple reasons for this including increased awareness of the risks of blood transfusions[5] and the

adverse effects they can have on the immune system as well as the costs and scarcity of blood donations. Evidence (partly from Jehovah's Witnesses) now supports much lower transfusion triggers than in previous years. Critical care will be required postoperatively following any significant blood loss. When there is no option to give blood it is important to minimize oxygen consumption as well as increase oxygen delivery. This will often necessitate sedation and ventilation for an extensive period of time. Other techniques which may be tried are hyperbaric oxygen therapy or active cooling, although the later can adversely affect coagulation.

It is important to continue oral iron for 3–4 weeks postoperatively and consider ESAs which will produce a more rapid increase in Hb postoperatively.

Despite years of research the hunt for a red blood cell substitute remains elusive. The two broad groups are haemoglobin-based oxygen carriers and perfluorocarbons, but both have been associated with significant side effects and none are licensed for use in the UK.[6]

Treating patients who place restrictions on our medical practice which may ultimately result in morbidity or mortality can raise complex issues of a moral and ethical nature. It may also be a very stressful experience for all involved, particularly if things do not go well. The Association of Anaesthetists and the Royal College of Surgeons have each published guidelines on how best to manage these patients.[7,8] We must care for all patients, including Jehovah's Witnesses, in a professional, non-judgemental and confidential manner. We must work on the presumption that every adult patient has the capacity to make decisions about their care and to decide whether they refuse or agree to any treatment. ◆

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