



JW Support for PBM

Tom Gregory & Mike Lancaster

HLC - Hospital Liaison Committee for Jehovah's Witnesses

JW Patient – Difficulty or Opportunity?

**A Pessimist Sees The Difficulty
In Every Opportunity;
An Optimist Sees The
Opportunity In Every Difficulty**

- Winston Churchill

JW's Views on Treatment

Whole
Blood

RBC

WBC

Platelets

Plasma

Autologous
Procedures

Plasma
Derivatives

Transplants

Surgical &
Anaesthetic
Techniques

Bloodless
Haemostatic
Agents

Volume
Expanders

Pharmaceuticals

“Care Plan for Women in Labour Refusing a Blood Transfusion”





CARE PLAN FOR WOMEN IN LABOUR REFUSING A BLOOD TRANSFUSION
<p>(As referred to in the RCOG Flow of the Royal College of Obstetricians & Gynaecologists)</p> <p>This document is an aid for medical staff and midwives managing a Jehovah's Witness (JW) or other patient who declines blood. Autologous procedures such as blood salvage and the use of plasma-derived products such as clotting agents are matters of personal choice for each Witness. Most will carry an advance decision document expressing their wishes. Please check with the patient.</p>
<p>Risk management</p> <ul style="list-style-type: none">All Jehovah's Witnesses and others declining a blood transfusion should be seen in a consultant clinic.Clinicians should plan in advance for blood loss. If the Hb is $\leq 105\text{g/L}$, use ferrous sulphate 200mg tds and folic acid with acidic fruit juice or 100mg ascorbic acid to aid absorption. If unresponsive to oral iron, use IV iron which replenishes iron stores faster and more effectively than oral iron (IV iron is contraindicated in the first trimester; see overview for current iron preparations)¹⁴. To further enhance response to a critically low Hb, the addition of recombinant human erythropoietin (EPO) has been reported safe in pregnancy¹⁴.High-risk patients should be booked into a unit with facilities such as interventional radiology, blood salvage, and surgical expertise. All elective surgery must be planned as far ahead as possible.For high-risk caesarean section, e.g. abnormal placental placement, consider with the interventional radiologist elective preoperative insertion of balloon catheters for intraoperative uterine artery embolisation as needed, and arrange blood salvage.At the time of labour ensure the consultant obstetrician and anaesthetist are aware a Jehovah's Witness has been admitted.The third stage of labour should be actively managed with oxytocics as well as prophylactic syntonin infusion.Delay umbilical cord clamping for at least 1 minute for healthy term infants and up to 3 minutes for healthy pre-term infants to allow time for a transfusion of placental blood to maximise their Hb level¹⁵.Check patient's vital signs and evidence of uterine contraction every 15 minutes for 1 to 2 hours after delivery.Contact the Hospital Liaison Committee for Jehovah's Witnesses in an emergency (contact details over page).
<p>Management of active haemorrhage</p> <p>First steps: AVOID DELAY. Involve obstetric, anaesthetic, and haematology consultants. Establish IV infusion, along with uterine massage (every 10 minutes for 1 hour can reduce blood loss¹⁶). Give oxytocic drugs first, then exclude retained products of conception or trauma (this could save time). Proceed with bimanual uterine compression. Give oxygen. Catheterise and monitor urine output. Consider DVP line. Slow, but persistent blood loss requires action. Anticipate coagulation problems. Keep patient fully informed. Proceed with following strategies if bleeding continues:</p> <p>Oxytocic agents: Ergometrine with oxytocin (Syntometrine) marginally more effective than oxytocin alone. If patient is hypertensive, give 5 IU oxytocin by slow IV injection then reassess; if bleeding not settled or uterus not contracted after a few minutes, give another 5 IU¹⁶. Carboprost (Hemabate) 250µg/ml IM, can be repeated after 15 minutes. Direct intra-myometrial injection is faster (less hazardous at open operation).</p> <p>Medical (Clotting): Useful option in atonic PPH where first-line treatment has failed. Can be given either by sub-lingual (600-800µg) or rectal route (800-1000µg)^{16,17}. Intravenous route (800µg) also reported to be effective¹⁸. Control of haemorrhage reported for rectal and intrathecal routes when unresponsive to oxytocin, ergometrine, and carboprost^{18,19}.</p> <p>Intrauterine balloon tamponade: Use 500 ml Bakri tamponade balloon (Cook Medical). Drainage of blood and cessation of bleeding can be observed via the catheter drainage shaft. Continue oxytocin. Evulsion of balloon can be prevented by vaginal packing. To minimise bleeding-risk during removal, use graduated deflation or slowly deflate to half volume and observe; if no bleeding, continue deflation; if bleeding starts, re-inflate²⁰. Alternatively, in emergency, stomach balloon of Sengstaken-Blakemore oesophageal catheter can be used, average indwell time of balloon 24 hours²¹. Bakri balloon used to control PPH due to vaginal lacerations when suturing or vaginal packing fails²².</p> <p>Haemostatic agents:</p> <p>Transaminic acid: Antifibrinolytic agent well-established for controlling haemorrhage (Egm IV a tds slowly)²³. Also consider IV vitamin K.</p> <p>Fibrinogen concentrate (BibSTAP), plasma-derived alternative to cryoprecipitate: Fibrinogen enhances clot strength and is used to normalise coagulation in PPH¹⁷. A reduced fibrinogen level is a critical marker for the severity of PPH, with greatest risk if the level falls $< 2\text{g/L}$^{18,19}. For ongoing bleeding consider 4gm (70 mg/kg) fibrinogen concentrate.</p> <p>Prothrombin complex concentrates (PCCs) (Beriplex & Octaplex): Widely prescribed in preference to FFP in Europe. Use 15-20 U/kg.</p> <p>PCCs combined with fibrinogen concentrate: Used to effectively replace FFP as first-line therapy in 80 cases of trauma coagulopathy²⁴. The refusal of FFP by JWs may be resolved to a large extent by the use of these plasma-derived products which are a matter of patient choice.</p> <p>JMs may be resolved to a large extent by the use of these plasma-derived products which are a matter of patient choice.</p> <p>Recombinant factor VIIa (Novoseven): (Note: may contain traces of animal serum proteins). Consider off-licence use under consultant guidance for life-threatening PPH unresponsive to standard therapies. 90 µg/kg provides site-specific thrombin-generation, repeat if unresponsive. Successfully used to control bleeding in 88% of 118 massive PPH cases and in 17 anecdotal PPH cases complicated by DIC, also to prevent hysterectomy in 20 of 22 patients when all other methods failed^{25,26}. To avoid possible failure of rFVIIa ensure fibrinogen level is adequate and use antifibrinolytics (transaminic acid) to stabilise the clot beforehand, also correct acidosis (pH>7.2) and hypothermia which decrease the efficacy of rFVIIa¹⁷.</p> <p>Tissue sealants (plasma-derived): Can be a useful adjunct to control surface bleeding in life-threatening situations. FloSeal: Used (off-licence) to control intractable massive bleeding in surgical bed following obstetric hysterectomy²⁷. Tissel: Used to arrest uncontrollable bleeding of complicated vulval and vaginal lacerations in 2 cases where haemostasis and other methods failed due to friable/edematous tissue²⁸.</p> <p>Non-inflatable anti-shock garment: Recently-developed neoprene Velcro-fastened garment (zoemiasg.com) can be applied in 2 minutes and allows perineal access for obstetric procedures. Can reduce blood loss and reverse hypovolaemic shock within minutes by the transfer of blood from the lower body and abdomen to the vital organs. Enables patient to be stabilised e.g. in home birth while awaiting transfer or in hospital while awaiting more definitive treatment. Successful trials have been conducted with more than 400 women experiencing PPH in developing countries²⁹.</p> <p>Uterine or internal iliac artery embolisation or ligation: Emergency interventional radiology can be performed in theatre using angioplasty balloon catheters for temporary occlusion, with transfer for later definitive embolisation³⁰.</p> <p>B-Lynch uterine compression suture: The B-Lynch brace suture can also be successfully combined with intrauterine balloon catheter if bleeding persists^{31,32}. Prophylactic insertion of this suture has been used in high-risk caesarean section³³. For some the Hayman suture technique may be a simpler procedure and quicker to apply as the lower uterine segment is not opened³⁴.</p> <p>Intraoperative blood salvage: Endorsed for use during caesarean section by NICE (2005) and RCOG guidelines (2008). Should be set up whenever possible (check if acceptable to the patient). Either single- or double-suction methods can be used for collection. However, to maximise blood recovery, there is good evidence that single-suction is a safe procedure³⁵. Swab-washing also increases RBC recovery. A 'collect-only' setup of the anticoagulation/suction tubing will enable blood salvage to begin within minutes of surgery³⁶. Conventionally a leukocyte filter has been used when reinfusing, though in an emergency situation the filter may be removed completely to maximise the flow rate, as prior to availability of filters no adverse events were reported. These are clinical decisions based on the balance of benefit/risk.</p> <p>Hypothermia and care in theatre: Subtotal hysterectomy can be just as effective, also quicker and safer. Use Flowtron Excel to decrease risk of DVTs. Avoid hypothermia (impairs coagulation), use fluid warmer, Bair Hugger, hats etc. Avoid unnecessary over-dilution.</p> <p style="text-align: right;"><small>Management of postpartum anaemia—see over page</small></p>

Includes:

- Risk Management
- Management of active haemorrhage
- Management of postpartum anaemia

39 medical references

Care Plan for Surgery in JW's

Action Checklist	Treatment Choices	Care Plan for Surgery in Jehovah's Witnesses	Planning Surgery	During Surgery	After Surgery
<p>Action for treating team</p> <ul style="list-style-type: none"> <input type="checkbox"/> Discuss patient's treatment choices <input type="checkbox"/> If it is decided to proceed with the operation, arrange for a blood screen and optimization of patient's haematological condition <p>As soon as possible before the operation ensure that necessary information about the patient's treatment choices have been passed to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Anaesthetic Department <input type="checkbox"/> Haematology Department <input type="checkbox"/> Specialist Practitioner of Transfusion <input type="checkbox"/> Operating Department <p>Checklist for patient/patient advocate:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Booked in for early blood screen? <p>Are the following fully aware of my treatment choices</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surgical Department <input type="checkbox"/> Anaesthetic Department <input type="checkbox"/> Haematology Department <input type="checkbox"/> Specialist Practitioner of Transfusion <input type="checkbox"/> Operating Department <ul style="list-style-type: none"> <input type="checkbox"/> Is there a clear way of identifying me in Recovery to prevent me being transfused (e.g. a No Blood wristband)? 	<p>Acceptable medical treatment</p> <p>✓ Jehovah's Witnesses accept most medical treatments, surgical and anaesthetic procedures, devices and techniques, as well as haemostatic and therapeutic agents that do not contain blood. They accept non-blood volume expanders, pharmaceuticals that control haemorrhage and stimulate the production of red blood cells, and all other non-blood management strategies.</p> <p>Unacceptable Medical Treatment</p> <p>X Transfusions of whole blood and its primary components (red cells, white cells, platelets and plasma).</p> <p>X Pre-operative autologous blood collection and storage for later reinfusion (pre-deposit).</p> <p>Matters of patient choice</p> <p>a) <i>Minor fractions of blood</i> (e.g. albumin, coagulation factors, immunoglobulins).</p> <p>b) <i>Procedures that make use of the patient's own blood (autologous)</i> (e.g. haemodilution, intraoperative and postoperative blood salvage)</p> <p>Please keep this document together with the patient's Advance Decision to Refuse Specific Medical Treatment document. Please note that treatments listed in the centre of this document which may not be acceptable to the patient are indicated by red asterisks (*).</p> <p>For more information on any technique mentioned herein, please contact:</p> <hr/> <p>SH 1.1.8.2011</p>	<p>Care Plan for Surgery in Jehovah's Witnesses</p> <p>To assist in communicating the patient's choices to the clinical team</p>  	<p>Correct anaemia</p> <p>Oral or IV iron Folic acid Vitamin B₁₂ Minimize blood sampling Treat menorrhagia Erythropoiesis Stimulating Agents (ESAs)</p> <p>Correct clotting abnormalities</p> <p>Review NSAIDs, warfarin, antibiotics, etc. (When appropriate, in advance of the operation, change these for drugs without anticoagulant effects, or with a shorter half-life, such as low molecular weight heparin, thus allowing intraoperative management).</p> <p>Patient's Medical History</p> <p>Examine patient's notes Ask patient about bleeding abnormalities Ask patient about circulatory problems</p> 	<p>Techniques to minimize blood loss</p> <p>Meticulous haemostasis Haemostatic dissecting devices (such as laser, argon beam, microwave, ultrasonic, etc.) Radiology guided arterial occlusion (pre- or intraoperative) Minimally invasive procedures Stenolectomy radiology Enlarged surgical team—shorter operation Surgical positioning Intraoperative blood salvage * Staging of complex procedures</p> <p>Anaesthetic</p> <p>Hypotensive anaesthesia Normovolemic/hypervolemic haemodilution * Full near-patient monitoring (TEG, HemosVue) Artificial oxygen carriers Tolerance of anaemia Maintain normothermia</p> <p>Haemostatic agents</p> <p>Topical – surgical adhesives, tissue sealants * Injectable – Tranexamic acid, desmopressin, vitamin K Other – conjugated oestrogens, cryoprecipitate, prothrombin complex concentrates, recombinant factor VIIa, vasopressin</p> <p>* Check on acceptability with patient (see over)</p>	<p>Blood Salvage</p> <p>Wound drainage and reinfusion after filtration *</p> <p>Anaemia</p> <p>Oxygen support Erythropoiesis Stimulating Agents (ESAs) IV iron Folic acid Vitamin B₁₂ Prophylaxis of infection Minimize phlebotomy – microsampling, sample multi-testing Hyperbaric oxygen</p> <p>For Bleeding</p> <p>Radiology guided arterial occlusion Prompt re-operative surgery Direct pressure Elevate body part above level of heart Haemostatic agents Tourniquet Controlled hypotension</p> <p>For Shock</p> <p>Trendelenburg/shock position (patient supine with head lower than legs) Medical antishock trousers (MA.S.T.) Appropriate volume replacement after bleeding controlled</p> <p>Monitoring and Observation</p> <p>Enhanced schedule to detect haemorrhage quickly *</p> <p>* Check on acceptability with patient (see over) * Directive from National Patient Safety Agency</p> 

Local Successful Cases...



15 years Ago!

Anaesthesia 1999; 54:891-895

Overview and strategies:

Anaesthesia, 1999, 54, pages 873-888 Case reports

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CASE REPORT
Hyperbaric oxygen therapy in the management of severe acute anaemia in a Jehovah's Witness

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Summary
A case is described in which a Jehovah's Witness patient who refused blood transfusion suffered massive antepartum haemorrhage, her haemoglobin falling as low as 2.0 g.dl⁻¹. She was treated on an intensive care unit with intermittent positive pressure ventilation and general supportive measures, pulsed hyperbaric oxygen therapy and recombinant human erythropoietin.

Keywords Religion; Jehovah's Witness. Oxygen therapy; hyperbaric. Anaemia.

- 38yr old female – University Hospital Aintree
- Massive antepartum haemorrhage (hb 2.0g.dl)
Lost 3 litres of blood
- Minimise blood loss and oxygen requirements
- Maximise oxygen delivery and erythropoiesis
- Sedated, paralysed and ventilated
- Aprotinin
- Tranexamic acid
- Vitamin K
- Paediatric blood sampling
- Erythropoietin (20,000 units 3x per week)
- Haematinics (Vitamin B12, folic acid, iron)
- Hyperbaric oxygen
- Discharged after 114 days with hb at 11.3g.dl and having received no blood products

How the HLC can help you

- *Act as facilitators*
- *Share medical articles*
- *Provide experienced contacts*
- *Make presentations*



Q&A



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Conclusion

BMJ

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ENDGAMES

Preparing a Jehovah's Witness for major elective surgery

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A 75 year old woman who was scheduled to undergo elective right sided mastectomy and axillary node clearance was seen in the preoperative assessment clinic. She had been diagnosed as having a grade 3 invasive ductal carcinoma (human epidermal growth factor receptor 2/HER2 positive and oestrogen receptor (ER) positive). A course of neoadjuvant chemotherapy had been completed two months earlier. Because she was a Jehovah's Witness, her advanced directive stated that she would not accept blood products. Her medical history included mitral regurgitation, diverticulitis, and autoimmune hypothyroidism for which she took levothyroxine. After extensive multidisciplinary preoperative planning, she underwent successful surgery without the use of blood products. Her haemoglobin was 90 g/L preoperatively (reference range 115-160 g/L), normocytic anaemia—folate, B₁₂ and ferritin were within normal ranges) 122 g/L on admission, and 109 g/L postoperatively.

Questions

- 1 How should this patient be counselled preoperatively?
- 2 How could the patient be optimised preoperatively?
- 3 What measures can help minimise blood loss?
- 4 Who can the medical team turn to for advice?
- 5 Is it possible to perform major surgical procedures without the use of blood products?

Answers

1 How should this patient be counselled preoperatively?

Short answer
In the United Kingdom and United States, the autonomy of competent patients must be respected above other ethical principles (this is not the case in all countries) and an individual management plan agreed and formalised with a legally binding advanced directive. The beliefs and opinions of Jehovah's

Witnesses may procedures.

Long answer
In the UK and Ireland, one would not contact a patient. Not all patients, even those who are Jehovah's Witnesses, are competent to accept blood products. In addition, hospital liaison committees are established in 33 major cities across the UK. They teach medical staff directly, facilitate communication between medical staff and patients who are Jehovah's Witnesses, and are available 24 hours a day. One such national society is The Watchtowers—a group of Jehovah's Witnesses that may offer support and advocacy to the patient and information to doctors seeking advice. Family and church elders may also be turned to if the patient consents. Outside the UK, strong emphasis is placed on seeking the advice of experienced multidisciplinary teams. Furthermore, the Better Blood Transfusion website features a helpful checklist.¹³ Once advice has been sought and advocates provided for the patient, it is important to give patients the space and privacy to make an independent decision, so long as they are competent.

2 How could the patient be optimised preoperatively?
The patient should be optimised for surgery. This includes ensuring she is well hydrated, has adequate electrolyte and nutritional status, and is free from infection. She should also be counselled on the risks of surgery and the benefits of blood conservation. A preoperative haemoglobin of 90 g/L is acceptable for elective surgery. A target haemoglobin of 70 g/L is reasonable for major surgery. A target haemoglobin of 50 g/L is reasonable for minor surgery. A target haemoglobin of 30 g/L is reasonable for emergency surgery. A target haemoglobin of 10 g/L is reasonable for life-threatening surgery.

3 What measures can help minimise blood loss?
The patient should be counselled on the risks of surgery and the benefits of blood conservation. A preoperative haemoglobin of 90 g/L is acceptable for elective surgery. A target haemoglobin of 70 g/L is reasonable for major surgery. A target haemoglobin of 50 g/L is reasonable for minor surgery. A target haemoglobin of 30 g/L is reasonable for emergency surgery. A target haemoglobin of 10 g/L is reasonable for life-threatening surgery.

4 Who can the medical team turn to for advice?
The patient should be counselled on the risks of surgery and the benefits of blood conservation. A preoperative haemoglobin of 90 g/L is acceptable for elective surgery. A target haemoglobin of 70 g/L is reasonable for major surgery. A target haemoglobin of 50 g/L is reasonable for minor surgery. A target haemoglobin of 30 g/L is reasonable for emergency surgery. A target haemoglobin of 10 g/L is reasonable for life-threatening surgery.

5 Is it possible to perform major surgical procedures without the use of blood products?
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haemoglobin monitoring could also be used to minimise blood letting. Use of closed arterial line circuits and methods to avoid dissecting blood when sampling from central lines are also crucial in extreme blood conservation.

4 Who can the medical team turn to for advice?

Short answer
For immediate advice the on-call haematologist can be contacted. In addition, every UK hospital has a transfusion committee and can access one of the 33 national hospital liaison committees. Furthermore, local or national societies may be able to offer support and advocacy for the beliefs of Jehovah's Witnesses. Strong emphasis is placed on seeking the advice of experienced multidisciplinary teams.

Long answer

All UK hospitals have a transfusion committee that will have produced a local guideline on management after liaising with Jehovah's Witnesses' representatives. If this cannot resolve a problem the on-call consultant haematologist can be contacted. In addition, hospital liaison committees are established in 33 major cities across the UK. They teach medical staff directly, facilitate communication between medical staff and patients who are Jehovah's Witnesses, and are available 24 hours a day. One such national society is The Watchtowers—a group of Jehovah's Witnesses that may offer support and advocacy to the patient and information to doctors seeking advice. Family and church elders may also be turned to if the patient consents. Outside the UK, strong emphasis is placed on seeking the advice of experienced multidisciplinary teams. Furthermore, the Better Blood Transfusion website features a helpful checklist.¹³ Once advice has been sought and advocates provided for the patient, it is important to give patients the space and privacy to make an independent decision, so long as they are competent.

5 Is it possible to perform major surgical procedures without the use of blood products?

Short answer
Yes. Evidence suggests that the use of extreme blood management strategies has an equal or better outcome in the short and long term than giving allogeneic blood transfusion. Patient selection is key, communication and consultation are essential, and planning is crucial to optimise outcome.

Long answer

In this case the surgery was relatively uncomplicated and for a major procedure had a low risk of serious blood loss. The discussion may be extrapolated, however, to more extreme examples. Recent research suggests that Jehovah's Witnesses are not at increased risk of surgical complications, increased hospital stay, or long term mortality compared with patients who receive blood transfusions for cardiac surgery. In fact, the opposite is true.¹⁴

Some people suggest that Jehovah's Witnesses should take financial responsibility for the extra expense and time incurred by their choice not to accept blood products. One case report described a Jehovah's Witness who survived emergency surgery for a leaking abdominal aneurysm despite having a preoperative haemoglobin concentration of only 30 g/L; he spent 14 weeks in hospital, which would have been extremely costly to the

NHS.¹⁴ Conversely however, strong evidence suggests that patients who avoid transfusion have a shorter length of hospital stay than those who receive blood transfusions.¹⁵

This case highlights two points. Firstly, that we respect patients' autonomy as medical practitioners, and that in many situations where patients have low or very low haemoglobin concentrations, blood transfusion can be avoided safely. In patients with extremely low haemoglobin concentrations, however, blood transfusions can save lives. Secondly, we hypothesise that bloodless surgical management could be extrapolated to surgical patients in general. In appropriate cases, this may improve patient outcomes and avoid the known complications and side effects of blood transfusions,¹⁶ an expensive and threatened resource.

Patient outcome

Despite the surgery not having a major risk of blood loss, it was important to correct our patient's preoperative anaemia to optimise her recovery. This was achieved with erythropoietin injections and intravenous iron, and her haemoglobin increased by 30 g/L before surgery. As expected, she experienced minimal blood loss intraoperatively, recovered well, and was discharged in good health after four days for ongoing management of her breast cancer.

Competing interests: All authors have completed the ICMJE uniform disclosure form at www.icmje.org/online_disclosure.pdf (available on request from the corresponding author) and declare no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work.

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