Western Health and Social Care Trust

Treatment of Patients who decline transfusion of Blood Components and/or Blood Products

November 2008

Western Health and Social Care Trust

Title: Treatment of Patients who decline transfusion of Blood Components and/or Blood Products

Reference Number: Corp09/003

Implementation Date: This policy will be implemented after being signed off by the Chief Executive

Review date: This policy will be reviewed one year after the effective date and thereafter every two years

Responsible Officer: The officer responsible for reviewing this policy is the Haemovigilance Practitioner on behalf of the Hospital Transfusion Committee

This policy has been developed within the context of Equality and Human Rights statutory obligations and requirements.

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1. Introduction

Occasionally patients presenting for surgery, or other procedures, may request to have bloodless procedures on the basis of a deeply held religious belief (Jehovah's Witnesses) or personal conviction. The patient has every right not to expect to receive blood if they have made it clear in advance that they do not wish to do so.

To administer blood to a competent adult who has refused to accept it either by an advance directive or by its exclusion in a consent form is unlawful, ethically unacceptable and may lead to criminal and civil proceedings. This does not mean that these patients have any wish to die prematurely and it is essential for the medical or surgical team involved to give this patient group the optimal care at all stages of their treatment. This will include a multidisciplinary approach at each of the stages of informed consent, pre-procedure optimisation, intra-operative management and post-operative care.

2. Alternatives to Blood Transfusion

According to the HSS Circular MD6/03 Better Blood Transfusion, Appropriate use of Blood (2003), patients at risk of transfusion should be informed of their choices which include information relating to alternatives to blood transfusion.

3. Jehovah's Witnesses view of Blood

Jehovah's Witnesses have strong beliefs based upon passages from the Bible that are interpreted as prohibiting the 'consumption' of blood. As a result of this belief, they do not accept transfusion of whole blood or its primary component.

It is important to ascertain if the patient is a fully dedicated Jehovah's Witness – this can be confirmed if the patient is carrying an Advance Decision to Refuse Specified Medical Treatment Card (Appendix One) hereafter referred to as an Advance Directive card. Many Jehovah's Witnesses have lodged a copy with their general practitioner, as well as with associates and relatives (Royal College of Surgeons, 2002). If there is doubt, and time permits, ADVICE may be sought from a family member, the patient's General Practitioner, a member of the Jehovah Witness congregation or by contacting the Hospital Liaison Committee for Jehovah Witnesses' (Appendix Two). Relatives and associates CANNOT consent to or refuse treatment for a patient, other than in the case of a minor.

Staff, on learning that a patient is a Jehovah's Witnesses, should enquire fully as to which aspects of treatment are acceptable and which are not. It is also necessary to identify how these beliefs will affect treatment, whether immediate or planned.

<u>Acceptable Medical Treatment</u>

- Most medical treatments, surgical & anaesthetic procedures, devices & techniques, as well as haemostatic & therapeutic agents that do not contain blood
- Non-blood volume expanders (e.g. saline, dextran)
- Non-blood management techniques such as Hypotensive Anaesthesia, Meticulous Haemostasis and Diathermy
- Agents such as Erythropoietin, Aprotinin, Desmopressin, Vasoconstrictors and Recombinant Factor V11a

Matters of Patient Choice

Each Jehovah's Witness will decide whether he or she wishes to accept the following as a matter of personal choice. Hence it is essential to discuss whether or not these procedures are acceptable with each patient: -

- Intra-operative and post-operative cell salvage (*not available in Western Health & Social Care Trust*)
- Heart by-pass (pumps must be primed with non-blood fluids) (*not available in Western Health & Social Care Trust*)
- Haemodialysis
- Plasma derivatives or cellular components (e.g. albumin, immunoglobulins, anti-D, clotting factors, haemophilic preparations, vaccines)
- Haemoglobin based oxygen carrying solutions, not yet licensed in the UK, may soon be available
- Organ Transplants (*not available in Western Health & Social Care Trust*)

Unacceptable Medical Treatment (All Jehovah's Witnesses)

- Transfusion of whole blood, packed red cells, white cells, plasma (FFP) & platelets.
- Preoperative autologous blood collection and storage for later reinfusion.

Values of a Jehovah's Witnesses

The decision of individual Jehovah's Witness to absolutely refuse blood and primary blood components is their own choice and should be free from any external influence. Jehovah's Witnesses accept full legal responsibility for their decision and release those treating them from any liability for any adverse consequences directly arising from their management options being curtailed by the exclusion of blood or primary blood components.

It should be noted that it is highly significant for a baptised Jehovah Witness to wilfully and without regret accept blood transfusion since by doing so he/she rejects a previously held core value and thus indicates by his or her own actions that he/she no longer wishes to be a Jehovah Witness.

4. **Consent Issues regarding treatment without Blood Components and/or Blood Products**

The basic rule applies that a patient, whatever his or her condition, may not be treated without their consent except where emergency treatment is required and/or the patient is unable to give consent and where no valid advance directive card has been received by the Trust.

The Blood Components / Blood Products Advance Directive / Consent (Appendix Three) supplements the Department of Heath, Social Services & Public Safety (DHSSPS) Form 'Consent for Examination, Treatment or Care' and it does not replace a current Jehovah's Witnesses Advance Directive card.

It is not only the patient who needs to be involved in the consent process as other key members of the peri-operative team (e.g. anaesthetist) needs to be alerted well in advance to clarify that they have no personal objections to proceeding with the proposed bloodless procedures in the patient – especially when there may be a considerable risk of morbidity and/or mortality.

An accurate record of all discussions about consent and treatment options should be made in the patient's hospital notes.

5. **Clinical Management of Patient who declines transfusion of Blood Components and/or Blood Products.** (The Association of Anaesthetists of Great Britain and Ireland, 2005). (Appendix Four & Five)

Personnel Recruitment

- In an elective patient who declines transfusion of blood component or blood product, the anaesthetic department should be contacted as soon as possible to ensure that a consultant anaesthetist is prepared to manage the patient's care. Anaesthetists have the right to refuse to anaesthetise an individual in an elective situation but should attempt to refer the case to a suitable qualified colleague prepared to undertake it. The surgeon should be informed as soon as possible if any difficulty ensues. In an emergency, the anaesthetist is obliged to provide care and MUST respect the patient's competently expressed views.
- As with any surgical procedure, the surgeon may decline to undertake a procedure if the perceived risk/benefit ratio is unacceptable and will attempt to contact a colleague who is prepared to manage the patient's care.

- With any major surgical procedure, the opinion of the consultant surgeon should be sought, and the operation undertaken by a surgeon of seniority appropriate to the risks involved (Royal College of Surgeons, 2002).

Planning Surgery

- Major procedures can be carried out in stages in order to limit acute blood loss and the choice of operative technique may also influence outcomes.
- Consideration should be given, before surgery, to one or more techniques to reduce intra-operative blood loss such as meticulous haemostasis and drug therapy.

Obstetric Considerations

- The introduction of an antenatal alert of the anticipated delivery of a child to a Jehovah's Witness mother can be beneficial so that appropriate senior staff will be available. This arrangement should apply to booking of delivery dates by both obstetricians and midwives (The Association of Anaesthetists of Great Britain and Ireland, 2005).
- An appropriate care plan for 'Women in labour refusing a Blood Transfusion' should be agreed between patient and the Consultant Obstetrician (Appendix Six).

Pre Operative Assessment/Discussion

- Pre-operative anaemia should be investigated and treated. Discussion of an individual case with a Consultant Haematologist could be beneficial.
- Full pre-operative investigations and consultations with the patient should take place as early as possible, in order to ascertain the degree of limitation on intra-operative management.
- Risks of blood loss should be reduced by identifying bleeding disorders and discontinuation of drugs that interfere with coagulation if feasible e.g. warfarin and antiplatelet drugs.
- At the pre-operative visit, it is important to take the opportunity to see the patient without relatives or members of the local community (if a Jehovah's Witness) who may influence and impede full and frank discussion of the acceptability of certain forms of treatment. Treatments that are regarded as acceptable should be established and the patient made fully aware of the risks of refusal of blood or blood products. Agreed procedures and non-acceptable treatments should be documented in the clinical notes, witnessed by the patient and dated, timed and signed. At the patient's request, family members or members of the Hospital

Liaison Committee for Jehovah's Witnesses may be included in these discussions (Appendix Two for contact numbers).

Post Operative

- Post-operative blood loss should be carefully monitored and accurately recorded.

6. Legal Position

- **Conscious Adult Patient – Elective Treatment**

- A conscious, mentally competent adult (over 18 years old) cannot be given treatment without his or her valid consent. Refusal of treatment can be for reasons, which are rational, irrational or for no reason at all. Health care professionals may be legally liable if they administer blood in the face of a refusal by a competent patient who has refused either verbally, by signing a consent form against blood transfusion and/or by carrying an Advance Directive card.
- Consultation with an experienced practitioner who is aware of blood loss that is likely, pre-optimisation pathway & risks that bloodless procedures present to the patient.
- Review, consider & discuss non-blood alternatives & treatments without use of homologous blood (Jehovah's witnesses do not accept pre-deposit autologous transfusions).
- Consultation with other doctors who may have experience with non-blood management & treatment without recourse to homologous blood.
- Consider transferring the patient to another site more familiar or willing to comply with the treatment permitted.
- Complete relevant documentation (Appendix Three & Four).

- **Conscious Adult Patient – Emergency Treatment**

- If patient is conscious & his/her condition not so extreme as to impair capacity to understand what is proposed, then the patient's wishes must be respected.
- No other person has the authority to consent to or refuse treatment on behalf of the conscious adult patient.
- If patient, having refused blood product, gives reliable indication at any point that he has changed his mind, then he may be treated in accordance with that wider consent despite the dissent of relatives.

- Whenever possible consent should be expressly given in writing by the patient to prevent any misunderstanding.

- **Unconscious Adult Patient – Elective Treatment**

- Investigate any suggestion that patient is a Jehovah's Witness & enquire as to restrictions in treatment this may dictate.
- Any documents found with patient or produced by patient's relatives (most Jehovah's Witnesses carry an Advance Directive card) or information as to patient's beliefs notified by relatives must be carefully noted. If a relative or associate suggests that a patient would not accept a blood transfusion, they must provide documentary evidence such as an Advance Directive card. Without this, blood should not be withheld in life-threatening circumstances (Milligan & Bellamy, 2004).
- Many Jehovah's Witnesses lodge a copy of the Advance Directive card with their General Practitioner, who should be contacted if documentation required (or contact the Hospital Liaison Committee for Jehovah Witnesses' – Appendix Two).
- If relevant documents are produced that clearly indicates the patient has adopted particular views with regard to use of blood products, then those restrictions must be observed.

- **Unconscious Adult Patient – Emergency Treatment**

- If an Advance Directive card is signed, dated and the signature witnessed, then there can be no reasonable doubt concerning its validity.
- If there is obvious doubt as to the validity of the documents or no documents available, the patient should receive such treatment as is immediately necessary and in his/her best interest. DO NOT delay transfusion so as to put the patient at risk.
- No other person can consent or refuse treatment. Thus in the absence of a direct expression from the patient of his/her views or a valid Advance Directive card, treatment should proceed without restriction from others.

- **Patient with Mental Illness – Elective Treatment**

- Investigate any suggestion that patient is a Jehovah's Witness & enquire as to restrictions in treatment this may dictate.
- Any documents found with patient or produced by patient's relatives (most Jehovah's Witnesses carry an Advance Directive card) or information as to patient's beliefs notified by relatives must be carefully noted.
- Many Jehovah's Witnesses lodge a copy of the Advance Directive card with their General Practitioner, who should be contacted if documentation required (or contact the Hospital Liaison Committee for Jehovah Witnesses' – Appendix Two).
- If relevant documents produced that clearly indicates the patient has adopted particular views with regard to use of blood products, then those restrictions must be observed.
- Where it is suggested by relatives that there should be limitations imposed on treatment options seek senior medical and risk management guidance.

- **Patient without Capacity – Emergency Treatment**

- If an Advance Directive card is signed, dated and the signature witnessed, then there can be no reasonable doubt concerning its validity.
- If there is obvious doubt as to the validity of the documents, the patient should receive such treatment as is immediately necessary and in his/her best interest. DO NOT delay transfusion so as to put the patient at risk. If a relative or associate suggests that a patient would not accept a blood transfusion, they must provide documentary evidence such as an Advance Directive card. Without this, blood should not be withheld in life-threatening circumstances (Milligan & Bellamy, 2004).
- No other person can consent or refuse treatment. Thus in the absence of a direct expression from the patient of his/her views treatment should proceed without restriction from others.

- **Child capable of giving informed consent (Gillick competent)**

- A child who is adjudged capable of giving informed consent to treatment (including blood transfusion) can do so and can thus override parental wishes if he or she so chooses.
- Young people between aged 16 and 17 years old are presumed to be competent to give consent (refusal may still be challenged), and should be treated as such unless there is evidence to suggest otherwise.
- Where a competent child up to the age of 18 refuses treatment and the treating team considers the refusal not to be in the child's best interests, the Trust's solicitors should be contacted (Litigation Department, Westcare Ext 2376 or 02871865121) and a Court can be asked to authorise the proposed treatment on the child's behalf.

- **Child unable to give informed consent – Elective Treatment**

- Where parents refuse consent to a blood transfusion on behalf of a minor (i.e. a person below the age of 18) and the treating team believe that blood is necessary, the Trust's legal advisors should be contacted (Litigation Department, Westcare Ext 2376 or 02871865121) to consider making an application to the Court.
- It is important, before this serious step is taken, that two doctors of Consultant status, should make an unambiguous, clear & signed entry in the clinical notes that the blood transfusion is essential, or likely to become so, to save life or prevent serious permanent harm.
- In the event that a court order is sought, it is strongly recommended that the parents be given the opportunity to be properly represented & are kept fully informed of the practitioner's intention to apply for the court order.
- Involvement of Litigation Department (Westcare Ext 2376 or 02871865121) is essential.

- **Child unable to give informed consent – Emergency Treatment**

- Management of a Jehovah's Witnesses child in an emergency situation, who is likely to succumb without the immediate administration of blood, is viewed in law in a different light. In this situation, application to the courts would be too time consuming & blood should be transfused without consulting the court. (Courts are likely to uphold decision of doctor who gave blood).
- Two doctors, Consultant status, should make an unambiguous, clear & signed entry in clinical notes that the blood transfusion is essential to save life or prevent serious permanent harm.
- The Trust's legal department (Litigation Department, Westcare Ext 2376 or 02871865121) should be informed as early as possible.

- If any patient has additional support needs to ensure effective communication to ensure informed consent, e.g. language and signing interpreting, then this will be provided for as appropriate.

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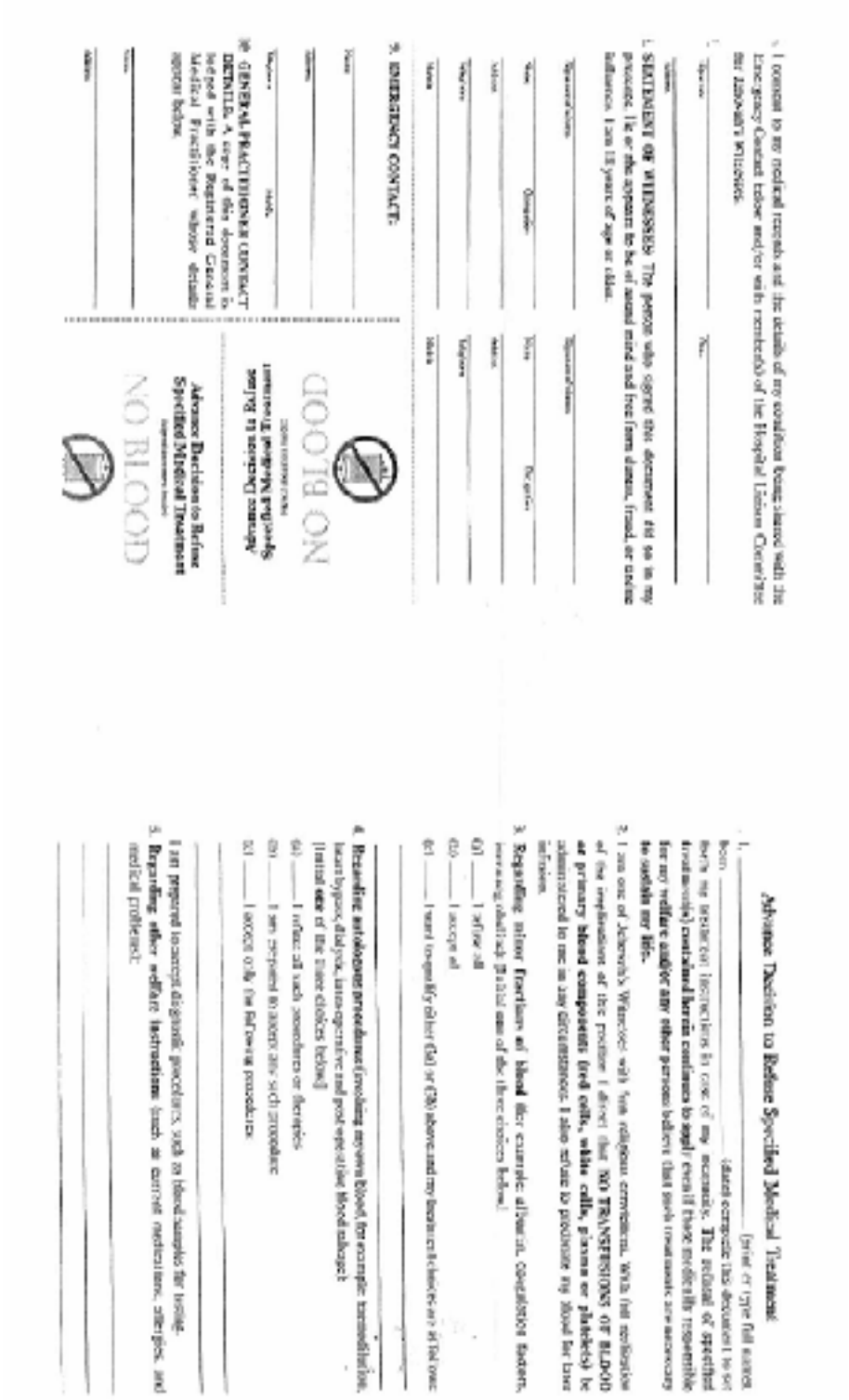
Appendix One



Advance Decision to Refuse Specified Medical Treatment

Advance Decisions to Refuse Specified Medical Treatment

NO BLOOD

NO BLOOD

Treatment of Patients who decline transfusion of Blood Components and/or Blood Products

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Appendix Two

Hospital Liaison Committee for Jehovah Witnesses' Contact Numbers

The prime role of members of the Hospital Liaison Committee for Jehovah Witnesses' is to assist in avoiding confrontation between doctor and patient and to assist understanding on both sides.

They can provide reference material and information about the latest developments in blood surgical and medical management. They will be able to provide a contact list of consultant surgeons and physicians who have had experience in providing non-blood medical management for Jehovah Witnesses' patients.

Jehovah Witnesses' patients may require the hospital staff to contact members of the Hospital Liaison Committee on their behalf.

Hospital Liaison Committee members for Western Area: -

Mr David Benstead (Chairman)	Telephone	00353749736974
	Mobile	00353862285077
Mr John Mayne	Telephone	02871882317
	Mobile	07708222583
Mr Tim Nightingale	Telephone	02871811784
	Mobile	07935223764
Mr Ronald Bacon	Telephone	02870353502
	Mobile	07867690764

Nonurgent communications, email: daveandmaggie@eircom.net

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Appendix Three

Blood Components / Blood Products Advance Directive / Consent

Ideally this advance directive / consent must be gained by an informed Consultant Practitioner after the patient has had sufficient information and adequate time (to consult others if necessary) to make a fully informed decision. This section is to be completed by the patient and a Consultant Anaesthetist / Consultant Surgeon / Consultant Physician.

I _____ (print patient's full name), born on the _____ day of _____ (month), _____ (year), am of sound mind and I voluntarily make this health care advance directive. This will remain in force until specifically revoked by me.

Concerning the following medical treatments:

Treatment	Patient's Wishes
Blood transfusion from a donor (whole blood)	**I will accept ☐ I will not accept ☐**
Blood transfusion predonated by me (whole blood)	**I will accept ☐ I will not accept ☐**
Red blood cell from a donor	**I will accept ☐ I will not accept ☐**
Red blood cell predonated by me	**I will accept ☐ I will not accept ☐**
White blood cells	**I will accept ☐ I will not accept ☐**
Platelets	**I will accept ☐ I will not accept ☐**
Fresh Frozen Plasma	**I will accept ☐ I will not accept ☐**
Albumin	**I will accept ☐ I will not accept ☐**
Cryoprecipitate	**I will accept ☐ I will not accept ☐**
Coagulation factors	**I will accept ☐ I will not accept ☐**
Recombinant coagulation factors	**I will accept ☐ I will not accept ☐**
Immunoglobulins (including Anti-D)	**I will accept ☐ I will not accept ☐**
Crystalloids (Saline, Hartmann's, dextrose)	**I will accept ☐ I will not accept ☐**
Colloids (Gelofusion, Haemacell, Dextran)	**I will accept ☐ I will not accept ☐**
Recombinant Erythropoietin	**I will accept ☐ I will not accept ☐**
Haemodialysis	**I will accept ☐ I will not accept ☐**
Haemodilution	**I will accept ☐ I will not accept ☐**
Patient confirms that above details are correct Full Name (Print): Signature: Date: Time:	
Completed by: - Full Name (Print): Signature: Consultant Anaesthetist / Consultant Surgeon / Consultant Physician (Please select appropriate response) Date: Time:	

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Appendix Four

Elective Surgery – Patient who declines Transfusion of Blood Components and/or Blood Products

Statement of Health Care Professional

Please affix patient addressograph label

Proposed Procedure: Planned Date:

Estimate expected blood loss: _____ ml

If expected blood loss > 500ml, Consultant Surgeon/Physician must be involved

Patient informed about procedure and blood loss? Yes No

Blood samples taken:

FBC	Yes	No	Coagulation Screen	Yes	No
Ferritin	Yes	No	B12	Yes	No
Folate	Yes	No	Thyroid Profile	Yes	No
LFTs	Yes	No	U&E	Yes	No

Warfarin/Antiplatelet drugs to be stopped before procedure Yes No N/A

Iron supplementation required Yes No

If expected blood loss > 500ml:

Is a suitable alternative treatment possible? Yes No

If 'yes', please specify _____

Has this been explained to the patient? Yes No

If the *patient wishes to proceed with proposed procedure with blood loss > 500ml expected:*

Patient referred to Anaesthetist at earliest opportunity? Yes No

Patient advised of additional risks of morbidity / mortality
Because of refusal to accept blood and/or blood products? Yes No

Completed by: -

Full Name (Print): Signature:

Date: Time:

Consultant/Specialist Registrar/Staff Grade (Please select appropriate response)

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Appendix Five

Summary of Clinical management for Medical Staff to consider

Pre-operative

- Liaison with Anaesthetic / Haematological Personnel
- Consider iron supplements
- Consider erythropoietin

Intra-operatively

Anaesthetic

- Experienced senior personnel should be present
- Correct patient positioning
- Normothermia maintained (use of fluid warmer and temperature of theatre)
- Haemodilution should be employed
- Hypotensive technique followed by optimal filling & normo / hypertension before closing the wound (considered essential)
- Anti-fibrinolytics

Surgical

- Experienced senior personnel should be present
- Correct patient positioning
- Meticulous surgical haemostasis
- Use of topical haemostatic agents
- Staged procedure (if possible)
- Low risk operative technique (if choice available)
- Use vasoconstrictor (if appropriate)
- Tourniquet (if possible)

Post-operative

- Early Hb check (Use micro-sampling)
- Careful record of blood loss
- Early re-exploration, if indicated
- Early discussion with a Consultant Haematologist

Appendix Six

CARE PLAN FOR WOMEN IN LABOUR REFUSING A BLOOD TRANSFUSION*

As referred to in the RCOG News (October 2000) and the MOET course manual 2000 of the Royal College of Obstetricians & Gynaecologists

This document has been prepared as an aid for medical staff and midwives who are managing a Jehovah's Witness or other patient who refuses a blood transfusion and is at risk of, or experiencing, postpartum haemorrhage. We urge clinicians to plan in advance for blood loss, which includes correction of antenatal anaemia (see: "Management of postpartum anaemia," second bullet point, italicized note). This should be discussed with the patient in keeping with her wishes that blood or blood products will not be used. Readiness to act promptly to prevent or stop bleeding is paramount.

- Consider booking high risk patients into a unit with facilities such as interventional radiology, cell salvage and surgical expertise[1].
- Please ensure that the consultant obstetrician and anaesthetist are aware a Jehovah's Witness has been admitted in labour.
- All such patients should have the third stage of labour actively managed with oxytocic drugs together with early cord clamping and controlled cord traction after placental separation. Do not leave the patient alone for the first hour after delivery.

Risk factors predisposing to postpartum haemorrhage (PPH):

If the patient has any of the risk factors below, an IV infusion of oxytocin (Syntocinon) should be considered after delivery of the baby.

- Previous history of bleeding, ante or postpartum haemorrhage
- Prolonged labour (especially when augmented with oxytocin)
- Abnormal placentation
- Large baby (>3.5 kg) and/or polyhydramnios
- Increased maternal age (>40 yrs)
- Fibroids/myomectomy scars
- More than 3 children
- Maternal obesity
- Multiple pregnancy

Management of active haemorrhage:

First steps: involve obstetric, anaesthetic and haematology consultants. Establish IV colloid infusion e.g. Gelofusine. Give oxytocic drugs first, then exclude retained products of conception or trauma (this could save time). Proceed with bimanual uterine compression. Give oxygen. Catheterize & monitor urine output. Consider CVP line. Aortic compression against the spine, using a fist just above the umbilicus, may buy time in an emergency[2]. Slow but persistent blood loss requires action. Anticipate coagulation problems. Keep patient fully informed. Proceed with following strategies if bleeding continues:

- Ergometrine with oxytocin (Syntometrine) marginally more effective than oxytocin alone. If patient is hypertensive, use oxytocin 10IU (not 5IU) by slow IV injection (in PPH, benefits of the higher dose outweigh the risks)[3,4].
- Carboprost (Hemabate) 250μg/ml IM, can be repeated after 15 min. Direct intra-myometrial injection is faster (less hazardous at open operation). If not available use 1 or 2 Gemeprost pessaries in the uterus[5].
- Oral misoprostol (Cytotec 200μg tablets) 600μg (3 tablets, prostaglandin E_1 analogue), use when unresponsive to oxytocin and ergometrine[6]. Intrauterine misoprostol 800μg (4 tablets), has been successfully used when refractory to oxytocin, ergometrine and also to carboprost[7]. Rectal misoprostol 800 or 1000μg (5 tablets), rapid absorption and control of haemorrhage reported when unresponsive to oxytocin and ergometrine, avoids problems associated with oral administration[8,9]. Misoprostol does not cause hypertension.
- Recombinant factor VIIa (rFVIIa; NovoSeven) 90μg/kg, provides site specific thrombin generation. Increasingly used to successfully treat uncontrollable haemorrhage, for example: in placenta accreta/percreta, ruptured uterus, uterine atony and HELLP syndrome[10-17] (in 7 of these cases bleeding was controlled even in the presence of DIC despite the failure of all conventional therapies, including packing of pelvis, arterial ligation and hysterectomy[11-16]). Expert advice on this drug will be available from the local Haemophilia Comprehensive Care Centre or Novo Nordisk 24-hour medical advice line (0845 600 5055; emergency UK-wide delivery available). Some hospitals now hold a small stock of factor VIIa to avoid delivery delay. Aprotinin (Trasylol), 2,000,000 U followed by 500,000 U/hr or tranexamic acid (Cyklokapron), 1gm IV x 6h; both are anti-fibrinolytic agents well-established for controlling haemorrhage[18,19]. Additionally, consider IV vitamin K.
- Intrauterine balloon tamponade: Stomach balloon of a Sengstaken-Blakemore tube used to control PPH in 14 of 16 cases, including bleeding from an atonic uterus in 9 cases[21,22]. Rusch urological balloon catheter also used[23]. Consider having a purpose-designed 500 ml tamponade balloon available (J-SOS-100500-Bakri, Cook (UK) Ltd. tel. 01462 473100)[24]. Balloon tamponade is able to indicate if bleeding will stop (as measured via catheter drainage shaft; the "tamponade test"), thus avoiding unnecessary surgery[25]. Systematic uterine packing also an option[26].
- B-Lynch brace suture[26,27]. Simple suture technique to control massive haemorrhage. Can be combined with intrauterine balloon catheter if bleeding persists[28] (Note: prophylactic insertion of this suture has been used in high risk caesarean section[29]).
- Embolisation/ligation of internal iliac arteries, or embolisation/bilateral mass ligation of uterine vessels[27,30].
- Blood salvage may be life-saving if substantial blood loss anticipated[1,31]. Check if acceptable to patient. Used at caesarean section in at least 400 reported cases, without complications of amniotic fluid embolism or coagulopathy[32]. A cell saver with leucocyte depletion filter together with separate suction (one for amniotic fluid and one for blood salvage) minimises amniotic fluid contamination[32,33].
- Hysterectomy: subtotal hysterectomy can be just as effective, also quicker and safer[34]. Clamp uterine arteries as early as possible.

Management of postpartum anaemia:

- For severe anaemia give oxygen and use recombinant human erythropoietin (rHuEPO, NeoRecormon or Eprex) 300 IU/kg (not 50 IU) x3 weekly subcutaneously or IV without delay, for accelerated haemoglobin recovery[35,36,37]. Augment with iron, vitamin B-12 and folic acid.
- Iron supplementation essential with EPO. Oral iron is too slow and unreliable, use IV iron sucrose (Venofer) by drip infusion or slow IV bolus (200mg x 3 weekly)[35,38]. This drug is rarely associated with anaphylaxis. (Note: *Optimization of antenatal haemoglobin essential. When unresponsive to oral iron, iron sucrose can be efficacious in reversing iron deficiency*[39,40]. *The addition of EPO (which does not cross the placenta and is reportedly safely used in pregnancy) enhances the response*[41,42,43,44]. *Suggested dosages of EPO and IV iron as above, but x 2 weekly*[45]).
- Consider elective ventilation in the ICU. Use microsampling techniques (such as HemoCue haemoglobin analyser).
- Hyperbaric oxygen therapy is an option in life-threatening anaemia due to PPH[46] – tel 0151 648 8000 (24-hrs) for available centres.

This document reflects current clinical and scientific knowledge and is subject to change. The strategies are not intended as an exclusive guide to treatment. Good clinical judgement, taking into account individual circumstances, may require adjustments.

* Reviewed by consultants in obstetrics and gynaecology, anaesthesia, and haematology (including experts in haemostasis).

Hospital Information Services for Jehovah's Witnesses UI 2815692 — Sept 2003

References

1. Hall MH. Haemorrhage (chapter 4). Why Mothers Die 2000-2. Confidential enquiry into maternal and child deaths. http://www.cemach.org.uk/publications/WMD2000_2002/wmd-04.htm (date accessed 24.08.05).
2. Riley DP, Burgess RW. External abdominal aortic compression: A study of a resuscitation manoeuvre for postpartum haemorrhage. Anaesth Intensive Care 1994; 22: 571-575.
3. Scottish Obstetric Guidelines & Audit Project (SOGAP). The management of postpartum haemorrhage. Section 2.4.6 Arresting the bleeding. Website- http://www. sign.ac.uk/guidelines/sogap/sogap6.html (date accessed 18.08.05).
4. Choy CMY, Lau WC, Tam WH, Yuen PM. A randomised controlled trial of intramuscular syntometrine and intravenous oxytocin in the management of the third stage of labour. BJOG 2002; 109: 173-177.
5. Barrington JW, Roberts A. The use of gemeprost pessaries to arrest postpartum haemorrhage. Br J Obstet Gynaecol 1993; 100: 691-692.
6. El-Refaey H, O'Brien P, Morafa W, Walder J, Rodeck C. Use of oral misoprostol in the prevention of postpartum haemorrhage. Br J Obstet Gynaecol 1997; 104: 336-339.
7. Oboro VO, Tabowei TO, Bosah JO. Intrauterine misoprostol for refractory postpartum haemorrhage. Int J Gynaecol Obstet 2003; 80: 67-68.
8. Adekanmi OA, Purmessur S, Edwards G, Barrington JW. Intrauterine misoprostol for the treatment of severe recurrent atonic secondary postpartum haemorrhage. Br J Obstet Gynaecol 2001; 108: 541-542.
9. Lokugamage AU, Sullivan KR, Niculescu I, Tigere P, Onyangunga F, El Refaey H, Moodley J, Rodeck CH. A randomised study comparing rectally administered misoprostol versus Syntometrine combined with an oxytocin infusion for the cessation of primary post partum haemorrhage. Acta Obstet Gynecol Scand 2001; 80: 835-839.
10. O'Brien P, El-Refaey H, Gordon A, Geary M, Rodeck CH. Rectally administered misoprostol for the treatment of postpartum hemorrhage unresponsive to oxytocin and ergometrine: A descriptive study. Obstet Gynecol 1998; 92: 212-214.
11. Branch DW, Rodgers GM. Recombinant activated factor VII: A new weapon in the fight against hemorrhage. Obstet Gynecol 2003; 101: 1155-1156.
12. Moscardó F, Pérez F, de la Rubia J, Balerdi B, Lorenzo JI, Senent ML, Aznar I, Carceller S, Sanz MA. Successful treatment of severe intra-abdominal bleeding associated with disseminated intravascular coagulation using recombinant activated factor VII. Br J Haematol 2001; 114: 174-176.
13. Zupančić Šalek S, Sokolić V, Viskovič T, Šanjug J, Šimić M, Kaštelan M. Successful use of recombinant factor VIIa for massive bleeding after caesarean section due to HELLP syndrome. Acta Haematol 2002; 108: 162-163.
14. Bouwmeester FW, Jonkhoff AR, Verheijen RHM, van Geijn HP. Successful treatment of life-threatening postpartum hemorrhage with recombinant activated factor VII. Obstet Gynecol 2003; 101: 1174-1176.
15. Segal S, Shemesh IY, Blumenthal R, Yoffe B, Laufer N, Ezra Y, Levy I, Mazor M, Martinowitz U. Treatment of obstetric hemorrhage with recombinant activated factor VII (rFVIIa). Arch Gynecol Obstet 2003; 268: 266-267.
16. Price G, Kaplan J, Skowronski G. Use of recombinant factor VIIa to treat life-threatening non-surgical bleeding in a post-partum patient. Br J Anaesth 2004; 93: 298-300.
17. Ahonen J, Jokela R. Recombinant factor VIIa for life-threatening post-partum haemorrhage. Br J Anaesth 2005; 94: 592-595.
18. Valentine S, Williamson P, Sutton D. Reduction of acute haemorrhage with aprotinin. Anaesthesia 1993; 48: 405-406.
19. Gai M-y, Wu L-F, Su Q-F, Tatsumoto K. Clinical observation of blood loss reduced by tranexamic acid during and after caesarian section: A multi-center, randomized trial. Eur J Obstet Gynecol Reprod Biol 2004; 112: 154-157.
20. As AK, Hagen P, Webb JB. Tranexamic acid in the management of postpartum haemorrhage. Br J Obstet Gynaecol 1996; 103: 1250-1251.
21. Condous GS, Arulkumaran S, Symonds I, Chapman R, Sinha A, Razvi K. The "tamponade test" in the management of massive postpartum hemorrhage. Obstet Gynecol 2003; 101: 767-772.
22. Katesmark M, Brown R, Raju KS. Successful use of a Sengstaken-Blakemore tube to control massive postpartum haemorrhage. Br J Obstet Gynaecol 1994; 101: 259-260.
23. Johanson R, Kumar M, Obhrai M, Young P. Management of massive postpartum haemorrhage: use of a hydrostatic balloon catheter to avoid laparotomy. Br J Obstet Gynaecol 2001; 108: 420-422.
24. Bakri YN, Amri A, Abdul Jabbar F. Tamponade-balloon for obstetrical bleeding. Int J Gynaecol Obstet 2001; 74: 139-142.
25. Maier RC. Control of postpartum hemorrhage with uterine packing. Am J Obstet Gynecol 1993; 169 (2 pt 1): 317-323.
26. B-Lynch C, Coker A, Lawal AH, Abu J, Cowen MJ. The B-Lynch surgical technique for the control of massive postpartum haemorrhage: an alternative to hysterectomy? Five cases reported. Br J Obstet Gynaecol 1997; 104: 372-375.
27. Dildy III GA. Postpartum hemorrhage: New management options. Clin Obstet Gynecol 2002; 45: 330-344.
28. Danso D, Reginald P. Combined B-Lynch suture with intrauterine balloon catheter triumphs over massive postpartum haemorrhage. BJOG 2002; 109: 963.
29. Kidson B, Whyte G, Crowther G, Findley I, Marryonda L. Triplet pregnancy in a Jehovah's Witness: recombinant human erythropoietin and iron supplementation for minimizing the risks of excessive blood loss. BJOG 2000; 107: 720-728.
30. Drife J. Management of primary postpartum haemorrhage. Br J Obstet Gynaecol 1997; 104: 275-277.
31. de Souza A, Permezel M, Anderson M, Ross A, McMillan J, Walker S. Antenatal erythropoietin and intra-operative cell salvage in a Jehovah's Witness with placenta praevia. BJOG 2003; 110: 524-526.
32. Catling S, Joels L. Cell salvage in obstetrics: the time has come. BJOG 2005; 112: 131-132.
33. Waters JH, Biscotti C, Potter PS, Phillipson E. Amniotic fluid removal during cell salvage in the cesarean section patient. Anesthesiology 2000; 92: 1531-1536.
34. Johanson R, Cox C, Grady K, Howell C. Managing Obstetric Emergencies and Trauma – The MOET Course Manual. RCOG Press. 2003, 248.
35. Bonsall D, Cappelletto A. Management of blood loss in Jehovah's Witnesses. Recombinant human erythropoietin helps but is expensive. BMJ 1995; 310: 1115-1016.
36. Breymann C, Richter C, Hüttner C, Huch R, Huch A. Effectiveness of recombinant erythropoietin and iron sucrose vs. iron therapy only, in patients with postpartum anaemia and blunted erythropoiesis. Eur J Clin Invest 2000; 30: 154-161.
37. Rizzo JD, Lichtin AE, Woolf SH, Seidenfeld J, Bennett CL, Cella D, et al. Use of epoetin in patients with cancer: evidence-based clinical practice guidelines of the American Society of Clinical Oncology and the American Society of Hematology. Blood 2002; 100: 2303-2320.
38. Perewusnyk G, Huch R, Huch A, Breymann C. Parenteral iron therapy in obstetrics: 8 years experience with iron-sucrose complex. Br J Nutr 2002; 88: 3-10.
39. Breymann C, Visca E, Huch R, Huch A. Efficacy and safety of intravenously administered iron sucrose with and without adjuvant recombinant human erythropoietin for the treatment of resistant iron-deficiency anemia during pregnancy. Am J Obstet Gynecol 2001; 184: 662-667.
40. Sifakis S, Angelakis E, Vardaki E, Koumantaki Y, Matalliotakis I, Koumantakis E. Erythropoietin in the treatment of iron deficiency anemia during pregnancy. Gynecol Obstet Invest 2001; 51: 150-156.
41. McLoughlin PL, Cope TM, Harrison JC. Hyperbaric oxygen therapy in the management of severe acute anaemia in a Jehovah's Witness. Anaesthesia 1999; 54: 891-895.

Recommendation to Mothers: You have two copies of this document, one of which should be placed in your obstetric notes (usually a folder in which your antenatal workup records are kept). It should be discussed with the most senior clinician at the antenatal visit. The other copy should be presented to the obstetrician on admission to the maternity/labour ward for delivery of the baby.

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References:

DHSSPS (2003) *Better Blood Transfusion – Appropriate Use of Blood* (HSS Circular MD6/03) www.dhsspsni.gov.uk

DHSSPS (2003) *Good Practice in Consent – A Handbook for the HPSS*. www.dhsspsni.gov.uk

Milligan, LJ, Bellamy, MC (2004) Anaesthesia and critical care of Jehovah's Witnesses. *Continuing Education in Anaesthesia*, Critical Care & Pain, 4, 2, 35 – 39.

The Association of Anaesthetists of Great Britain and Ireland (2005) *Management of Anaesthesia for Jehovah's Witnesses*. Hampshire: Alfresford Press.

Royal College of Surgeons (2002) *Code of Practice for The Surgical Management of Jehovah's Witnesses*. London: IBSA.

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