CARE PLAN FOR WOMEN IN LABOUR REFUSING A BLOOD TRANSFUSION

(As referred to in the *RCOG News* of the Royal College of Obstetricians & Gynaecologists)

This document is an aid for medical staff and midwives managing a Jehovah's Witness or other patient who declines blood. Autologous procedures such as **blood salvage** and the use of **plasma-derived products** such as clotting agents are a **matter of personal choice for each Witness**. Most will carry an advance decision document expressing their wishes. Please check with the patient.

Risk management

- All Jehovah's Witnesses or those declining a blood transfusion should be seen in a consultant clinic.
- Clinicians should **plan in advance for blood loss.** If the Hb is ≤ 10.5g/dl 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[1,2]. A single total-dose IV iron preparation may be more acceptable to the patient than repeat infusions. Addition of **recombinant human erythropoietin (EPO)**, which does not cross the placenta and is reportedly safely used in pregnancy, enhances Hb response[3,4].
- 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 placentation, consider with the interventional radiologist elective insertion of catheters for **uterine artery embolisation** immediately pre-operatively 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** with consideration of **prophylactic syntocinon** infusion.
- Consider **delayed cord clamping 1-2 min for pre-term infants** to maximise Hb, with controlled cord traction after placental separation[5].
- Check patient's **vital signs and evidence of uterine contraction** every 15 min for 1 to 2 hours after delivery.
- Contact the **Hospital Liaison Committee for Jehovah's Witnesses in an emergency** (contact details on back page).

Management of active haemorrhage

First steps: AVOID DELAY. Involve obstetric, anaesthetic and haematology consultants. Establish IV infusion, along with **uterine massage** (every 10 min for 1 hour can reduce blood loss[6]). **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 CVP line. **Slow, but persistent blood loss requires action**. Anticipate coagulation problems. Keep patient fully informed. Proceed with following strategies if bleeding continues:

Oxytocic agents: Ergometrine with oxytocin (Syntometrine): Marginally more effective than oxytocin alone. If patient is hypertensive, use **oxytocin** 10U (not 5U) by slow IV injection (in serious PPH the benefits of higher dose outweigh the risks)[7,8]. **Carboprost (Hemabate)** 250µg/ml IM, can be repeated after 15 min. Direct intra-myometrial injection is faster (less hazardous at open operation).

Misoprostol (Cytotec): Useful option in atonic PPH where first-line treatment has failed. Can be given either by **sub-lingual** (600-800µg), **rectal** (800-1000µg) or **intrauterine route** (800µg)[9,10,11]. Control of haemorrhage reported for rectal and intrauterine routes when unresponsive to oxytocin, ergometrine and carboprost[10,11].

Intrauterine balloon tamponade: Have available purpose-designed 500 ml **Bakri tamponade balloon** (Cookmedical). Drainage of blood and cessation of bleeding can be observed via the catheter drainage shaft. Continue oxytocin. Expulsion 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, reinflate[12,13]. Alternatively, stomach balloon of **Sengstaken-Blakemore oesophageal catheter** has controlled haemorrhage in 84% of 43 cases (in 2 studies), in the majority of successful cases bleeding was due to uterine atony[12,14]. Distal end of tube beyond balloon should be cut off to reduce risk of occlusion or perforation. Indwell time of balloon averaged 24 hours[14]. **Bakri balloon also used to control PPH due to vaginal lacerations**[15].

Non-inflatable anti-shock garment: Recently developed neoprene Velcro-fastened garment (zoexniasg.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 0.5 to 1.5 litres of blood from the lower body and abdomen to the vital organs. This can stabilise the patient and gain time while awaiting senior staff input. Successful trials have been conducted with >400 women experiencing PPH in developing countries[16].

Recombinant factor VIIa (NovoSeven): Increasing evidence of effectiveness for control of PPH unresponsive to standard therapies. This product and the following haemostatic agents should be used under consultant guidance. 90 µg/kg provide site-specific thrombin generation, repeat if unresponsive. Successfully used to stop or reduce bleeding in 88% of 118 massive PPH cases[17]. Also to control bleeding in 17 anecdotal PPH cases complicated by DIC[18]. (Novo Nordisk have 24-hour emergency distribution for UK-wide delivery [01889 565652] or a small stock can be held to avoid delivery delay.) Occasional failure of FVIIa has been attributed to a low fi' rinogen level[19]. The **fibrinogen concentrate Haemocomplettan** (a plasma-derived **alternative to cryoprecipitate;** available on a named-patient basis within 24 hours from CSL Behring; 01444 447400) can enhance clot strength and normalise clotting in the presence of FVIIa[20,21].

Other haemostatic agents: Prothrombin complex concentrates (PCCs) such as **Beriplex** and **Octaplex** (plasma-derived), are proposed as substitutes for fresh frozen plasma and are widely prescribed as such in Europe. Beriplex reported to achieve control of bleeding in cardiac and other surgery[22]. **Tranexamic acid (Cyklokapron)**: anti-fibrinolytic agent well established for controlling haemorrhage, use 1gm IV x tds, slowly[23]. **Fibrin sealants: Flowseal** used to arrest massive bleeding in surgical bed following hysterectomy[24]; **Tisseel** has controlled bleeding of complicated vulval and vaginal lacerations when suture haemostasis failed due to tissue friability[25]. Also consider IV **vitamin K.**

B-Lynch uterine compression suture: The B-Lynch brace suture can also be **combined with intrauterine balloon catheter** if bleeding persists[26]. **Prophylactic insertion of this suture** has been used in high-risk caesarean section[4]. The **Hayman suture technique** may be a simpler procedure and quicker to apply as the lower uterine segment is not opened[27].

Embolisation/ligation of internal iliac arteries or embolisation/bilateral mass ligation of uterine vessels: Angioplasty balloon catheters can be used for emergency temporary occlusion in theatre, with transfer to the angiography suite for definitive embolisation[28].

Hysterectomy and care in theatre: Subtotal hysterectomy can be just as effective, also quicker and safer. Use Flowtrons Excell to decrease risk of DVTs. Avoid hypothermia (impairs coagulation), use fluid warmer, bair hugger, hats etc. Avoid unnecessary over-dilution. Have blood salvage and experienced operator on hand (see below).

Intraoperative blood salvage: Endorsed by NICE (2005) and RCOG (2008) guidelines. 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 procedure[29]. Swab washing also increases RBC recovery. A 'collect only' set-up of the anticoagulation/suction tubing will enable blood salvage to begin within minutes[30]. 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.

Management of postpartum anaemia—continued on back page