Bloodless Medicine (Jehovah’s Witness-JW) Obstetric Care Protocol (for Anticipated Vaginal or Cesarean Deliveries)


**Antenatal Management:**

- JW patients should be identified at, or prior to, their first prenatal visit and should be scheduled in the HROB clinic for consultation as early in the pregnancy as possible. Patients with co-existent medical conditions and/or significant risk factors for intrapartum and/or postpartum hemorrhage are recommended to follow with HROB for entirety of antenatal care. It is recommended that JW bloodless medicine patients under the care of Family Practice who plan to deliver by Cesarean section undergo prenatal care and delivery with the UIHC obstetric service (either COC or HROB clinics as appropriate).

- Patient should be referred to the UIHC Anemia Management Clinic as early as possible in prenatal care (at or around first prenatal visit) for evaluation of hematological status and therapeutic interventions as indicated. Follow up care throughout pregnancy should then continue as frequently as appropriate for following hematological parameters, instituting therapy and maximizing preparation for delivery (whether by anticipated CD or SVD).

- There will be a template available in EPIC for antenatal care visits for obstetric patients desiring bloodless medicine (see separate document). There will also be an OB JW patient checklist for antenatal care through postpartum care available in EPIC (see separate document).

- When delivery timing has been estimated/established for a JW patient deemed at high risk for intra- and/or postoperative hemorrhage, the Hyperbaric Medicine Service should be notified to give advance notification that the facilities may be needed postoperatively.

**Formal comprehensive meeting with key JW healthcare team members**

- As early in pregnancy as possible (at or before 20 weeks) and again closer to anticipated delivery (preferably around-34 weeks), it is vital that there is a formal planning meeting with the patient, involving the obstetric provider (if not known yet, then HROB MFM staff) and anesthetist who will be performing the surgery/attending the delivery, along with input from the hematological team (UIHC Anemia Management Clinic). The main aims of this meeting are to (1) ensure the patient is fully informed of the risks of bleeding and (2) establish and document the extent of the patient’s consent.
in terms of exactly what blood products/ maneuvers are acceptable and what are not acceptable for that individual patient using the UIHC Blood product refusal/acceptance form. It is important for clinic to inform patient in advance of specific purposes of meeting so they can be well prepared.

*Early warning system: The fact that a JW patient requires delivery must be ascertained and communicated to the ‘JW healthcare team’ (see above) as early in the pregnancy as possible and again in early third trimester closer to the anticipated delivery date.

**Format of the Preoperative Meeting**

- This is flexible, but should contain the following. The meetings may be held individually with the providers as their schedule allows or as a group if feasible. The patient is assured that the meeting is to formulate a plan for surgery that complies with her wishes and beliefs, and that no attempt will be made to frighten her or place her under duress. She should be asked if she has consulted the advice of the Hospital Liaison Committee for Jehovah’s Witnesses on permissible products for infusion, and if she differs from the view/recommendations of the Anemia Management Clinic in any respect. The patient is advised to utilize the UIHC blood product refusal/acceptance document to ensure all wishes are communicated thoroughly and consistently. This is in addition to the procedure consent form (which is signed at time of presentation for the procedure/surgery/delivery).

- All comments, questions and answers must be documented in the patient’s EPIC chart. The OB provider outlines the proposed operation, describes possible complications that may result in bleeding, and reminds the patient of the ever-present risk of bleeding with any surgery/delivery. This description and its understanding by the patient are also documented. The anesthetist outlines techniques used to avoid transfusion of blood. The patient’s informed consent to these matters is obtained and documented (via the UIHC blood product refusal/acceptance document. The anesthetist asks what actions are and are not sanctioned by the patient if she is unconscious or otherwise unable to communicate and dying of unexpected blood loss, and this too is documented. The hematologist (or transfusion nurse specialist) asks the JW patient which therapeutic agents are acceptable to infuse to support blood volume and/or hemostatic function in the event of bleeding. The written or spoken advice of the Hospital Liaison Committee for Jehovah’s Witnesses to the patient may be helpful at this stage (see below). The answer to this question is documented.

- If clinically appropriate and timely, the hematologist explains the technique of preoperative Hb enhancement using rHuEPO. If the patient accepts this therapy, clinical assessment and rHuEPO therapy (if appropriate) is arranged via the UIHC Anemia Management Clinic.

- At the end of the discussion, the JW patient and her supporter(s) should be asked if they have any further questions or concerns. The clinical team then agrees (or disagrees) with the patient to go forward with the scheduled delivery on the terms agreed upon, and the commitment is documented.

- If the patient has made an Advance Directive, it should be read and a copy placed in the notes. We recommend all bloodless medicine obstetric patients complete and sign an advance directive and have it scanned into their EPIC chart as early in prenatal care as possible. This document should be available at the time of anticipated delivery.
As noted above, it may not always be possible for all interested parties to meet simultaneously. In this situation, the transfusion nurse specialist/hematologist and the patient can meet with the surgeon (and/or MFM) and anesthetist separately, using the aforementioned UIHC blood product refusal/acceptance document* to document discussions for both consultations.

**Preoperative Assessment**

The patient should be seen by a hematologist (via the UIHC Anemia Management Clinic) to review her medical history for bleeding episodes, hypertension, previous anemia and any drug history for medications that may exacerbate bleeding, such as aspirin, anti-coagulants and non-steroidal anti-inflammatory drugs. The presence of infection, inflammation or malignancy predicts a less than optimal response to rHuEPO. If possible, cause should be addressed and/or dosage increased. Any evidence of anemia should be thoroughly investigated and treated preoperatively. The following investigations are recommended: full blood count, coagulation screen, serum B12, folate and ferritin, serum urea and creatinine, electrolytes and liver function.

**Other Practical Issues**

Rationalizing the frequency and volume of blood sampling is important to reduce blood loss postoperatively. The use of pediatric blood sample tubes is recommended. Postoperative folic acid should be considered when reduced oral intake is anticipated, and folinic acid used when oral intake is not possible. Iron supplementation should be used if there is postoperative bleeding. If the patient is unable to take oral iron or if rHuEPO is being used, then intravenous iron infusions, such as iron sucrose (Venofer), can be given safely. There is some evidence that intravenous iron may be more efficacious than oral iron generally when rHuEPO is used preoperatively and when used in dialysis patients, but some centers use oral iron supplementation and only reserve intravenous iron if there is a poor response on the basis of iron studies.

**Erythropoietin (rHuEPO) Administration**

In critically ill patients, one randomized study showed that rHuEPO significantly increased Hb levels and reduced blood transfusion requirements, although it had no impact on clinical outcome or mortality35. rHuEPO is effective in boosting the Hb level in individuals undergoing autologous blood donation (although this maneuver is unacceptable to JW patients). For some JW, it can be used pre- and postoperatively, or in the ante- or postnatal period. High doses are often needed. The current dosing guidelines for UIHC will be provided. From a practical point of view, having started on a program of rHuEPO preoperatively, it is important to ensure the approximate date of delivery. In the event of delay, rHuEPO would need to be continued to avoid a fall in Hb level when it is discontinued.

**Management of Life-Threatening Bleeding in an Unconscious Adult JW Patient**

When faced with an unconscious obstetric patient who is at immediate risk of dying from blood loss, whether in ICU or labor and Delivery, where the relatives inform the medical team that the patient is a JW and produce an Advance Directive signed by the patient confirming her wish not to be transfused, even if their death is imminent from massive bleeding, there must be the following certainties: (1) that the patient is a
committed JW, (2) they have independently and freely decided to refuse transfusion, and (3) they had considered this to the point of death at the time of making their Advance Directive.

- These directives may need to be reviewed if the fetus is undelivered. This is a circumstance where UIHC ethics and legal teams may be asked to get involved. The Hospital Liaison Committee for Jehovah’s Witnesses can provide cases such as these separately, not necessarily in these documents.

- In re Fetus Brown (Illinois Appellate Court 1997), the court ruled that “the State may not override a pregnant woman’s competent treatment decision, including refusal of recommended invasive medical procedures, to potentially save the life of the viable fetus. We … find that a blood transfusion is an invasive medical procedure that interrupts a competent adult’s bodily integrity.”


Guidelines for Life-Threatening Bleeding in an Unconscious Adult JW

(1) Any documentary evidence, for example, an Advocate Directive (living will), stating that the patient will not accept blood transfusion even in the event of life-threatening bleeding, should be requested from relatives or associates of the patient and examined, if time permits.

(2) A copy should be put in the patient’s EPIC chart (scanned in or documented as a note) and its contents respected.

(3) The doctor, if time permits, should discuss with the patient’s relatives the implications of withholding blood.

If (1) is true make clear this meeting is informational only.
If (1) is not true meeting may include discussion for decision making

(4) The doctor should act in the best interests of the patient and will be expected to perform to the best of his/her ability, which may involve giving blood if steps 1, 2 and 3 are impossible.

(5) A clear and signed entry of the steps taken should be written in the patient’s EPIC records.

Intrapartum and Postpartum Management:

SCHEDULED Cesarean deliveries

- Consent for refusal/acceptance of blood products and interventions should be reviewed again pre-operatively upon arrival to the hospital on day of delivery. The consent should be confirmed and available to all members of the obstetrical, anesthesia, and nursing team members via the patient’s EPIC chart. The case should not start until this consent form has been reviewed by the surgical and anesthesia teams.

- JW patients and patients with refusal of blood products who necessitate SCHEDULED Cesarean delivery, and with an anticipated INCREASED risk/surgical complexity, should be scheduled for delivery in the MAIN OR, preferably in OR suites 8 or 9 (hybrid rooms) to ensure rapid accessibility to Interventional Radiology Services for emergency embolization if indicated. The obstetric and anesthesiology teams should use their discretion as to what patients constitute increased risk for surgical
complications and hemorrhage. In general, if the patient’s risk is not extremely low, one should err on the side of caution and schedule the patient in the main OR. Hybrid rooms should be scheduled when available and the highest risk patients should have priority for these rooms when scheduling (ex: suspected placenta accreta, 3-4 or more prior c sections and/or previous c sections with placenta previa and/or suspected accreta, and/or any surgical case with a BMI over 60 can be considered highest risk.

- Cases should be scheduled as early in the day as possible (10 am or earlier start)
- Cell saver technology and associated personnel (if deemed acceptable by JW patient) should be arranged confirmed prior to surgical date.
- Cases should be scheduled with experienced obstetric surgeons (one primary surgeon + senior resident and/or fellow and 1 back up staff obstetric/gynecologic surgeon) and gynecologic oncologist surgeons on consult, depending on level of anticipated surgical risk (ex: history of 3 or more prior c sections, suspicion for abnormal placentation, BMI greater than 40, multifetal pregnancy with increased blood loss anticipated, or other anticipated risk factors.
- In cases considered high risk for hemorrhage (especially suspected placenta accreta, 3+ prior c sections), consider pre-operative placement of pelvic artery balloon catheters with occlusion after delivery of infant.
- Intra- and post-operative blood loss should be minimized with aggressive preventative measures.
- *Bloodless Medicine Obstetrical Hemorrhage Protocol, excluding unaccepted blood products and blood conservation techniques, should be utilized at earliest indication. See separate document for the revision to the existing Obstetric hemorrhage protocol following Cesarean or vaginal delivery to allow for earlier conservative, bloodless intervention.

- Additional measures to consider for bloodless medicine patients if acceptable:
  -consider pre op pelvic artery balloon placement (will discuss via GYN ONC input).
  (1) Permissive moderate hypotension ie: blood pressure at the lowest possible level that maintains tissue perfusion during bleeding (maintain MAP of 50-70 mmHg)
  (2) Avoid hypertension. Effect slow, gradual return to normal blood pressure after control of bleeding with moderate postoperative hypotension (systolic blood pressure of 80-90 mmHg in a normotensive patient)
  (3) Controlled/limited fluid resuscitation
     -hemodilution
  (4) Pre-, peri- and post-operative use of:
     -tranexamic acid eg: Cyklokapron (per anesthesia protocol)
     - Desmopressin eg: DDVAP (per anesthesia protocol)
     - Recombinant activated factor VIIa eg: NovoSeven (per anesthesia protocol, doses range from 60 –212 ug/kg)
     -clotting factors available as recombinant products (Factors VIIa, VIII IX)
     -Prothrombin complex Concentrate (eg: Autoplex)
     -Cryoprecipitate
     *the aforementioned medications will be verified by labor and delivery nursing staff as well as labor and delivery anesthesiology staff to confirm dosages and availability for use on labor and delivery.
  (5) Judicious use of topical hemostatic agents (tissue adhesive/fibrin glue, collagen,
gelatin based hemostats (Flo-Seal, Gel Foam), thrombin soaked packing
(6) Use of Cell Saver/Blood Cell Salvage during procedure
(7) Continued postoperative use of erythropoieses stimulating agents and iron
(8) Mechanical intubation, when indicated, to decrease metabolic requirements
  Early referral to Hyperbaric Medicine Service for therapy

- Post-operative management to be undertaken on appropriate unit depending on post-
  operative hemodynamic status. ICU post-operative admission should be undertaken
  for any cases with hemorrhage, increased blood loss, increased risk for postpartum
  hemorrhage.

- Only stable patients should undergo postpartum observation on Labor and Delivery (for
  12-24 hours postpartum and then to Mother Baby Unit for remainder of hospital stay).
  Stable patients include those with no needs for hematologic management or increased
  risk for postpartum hemorrhage.

**Anticipated Vaginal Deliveries, Including Vaginal Birth After Cesarean, and
Unanticipated Cesarean Deliveries During Routine Labor and Delivery:**

- When possible, induction of labor should be considered at approximately 39 weeks to
  ensure delivery at UIHC.

- Consultation with anesthesia team immediately upon arrival to Labor and delivery and
  prior to any interventions.

- Until a cell saver is available 24/7 on Labor and delivery, arrangement of cell saver (if
  accepted by patient) and personnel for urgent use on Labor and delivery (should a c
  section be indicated) should be arranged as soon as a JW/bloodless medicine patient is
  admitted to labor and delivery. This process may be initiated by anesthesia staff upon
  patient arrival to L and D. Even if the patient is deemed “low risk” for hemorrhage at
  admission, the cell saver should still be arranged for immediate, urgent availability if
  needed.

- Consent for refusal/acceptance of blood products and interventions should be reviewed
  again by obstetric team (anesthesiologists, nursing staff, obstetric staff and residents)
  upon arrival to labor and delivery. The consent should be confirmed and available to all
  members of the obstetrical, anesthesia, and nursing team members via the patient’s
  EPIC chart.

- Consideration of performing operative vaginal delivery (vacuum or forceps when
  indicated) in the OR on labor and delivery (as opposed to the labor room) to ensure
  immediate access to surgical resources and maximal control of obstetrical hemorrhage.

- Unanticipated Cesarean section, including those indicated during attempted trial of
  vaginal delivery, will most likely not be able to be undertaken efficiently in the Main OR
  (due to logistical reasons—getting a Main OR room in a timely fashion, neonatal and
  obstetric set up in the main OR, etc.). Therefore, Labor and delivery must be prepared
  to enforce appropriate Bloodless Medicine Hemorrhage protocols as needed.

- For unanticipated Cesarean deliveries presenting to labor and delivery (ex: breech
  presentation in active labor, repeat c section with labor, multifetal gestation in labor
  without indication for attempted vaginal delivery, acute decompenation requiring
  immediate delivery), OB Bloodless Medicine Patient Safety Hemorrhage Protocol
  should be initiated as in Main OR and resources brought to L and D if time permits
  (especially: cell saver). An emergent delivery would not be delayed for cell saver
arrival but if cell saver could be mobilized for use mid surgery (ie: after delivery of baby), that would be an ideal situation.