Post-partum Hemorrhage: Beyond the Basics

Objectives

• Define Post-partum Hemorrhage
• Discuss the Scope and Significance of This Problem
• Discuss Medications, Transfusions, and Surgeries for treatment
• Develop Order Sets and Protocols

This workshop will be an interactive learning session, including some didactic instruction, some hands-on demonstration, and some institution-specific discussions.

In an effort to avoid too much data to download, the on-line information will be limited to these objectives, a sample of hospital protocols, and an extensive bibliography.

SAMPLE OB HEMORRHAGE PROTOCOL
(Based on Meriter Hospital Protocol, Madison, WI)

I. PATIENT POPULATION AND/OR AREA AFFECTED

Obstetrical patients whether patient is in intra-operative, post-operative or post-partum phase of her hospital stay.

II. GENERAL INFORMATION

This protocol outlines the process for responding to an identified obstetrical hemorrhage. It identifies the process for obtaining required human, clinical and technical resources to respond to an obstetrical hemorrhage whether the patient is in the intra-operative, post-operative, or post partum phase of her hospital stay.

III. PROTOCOL

A. Stage 0: Prevention and Recognition of OB Hemorrhage

1. All patients will be identified for hemorrhage risk upon admission and ongoing through the labor and delivery process.
a) Low risk patients will be observed in labor and if condition changes, actions will be taken based on risk factor

b) Medium risk patients- CBC, Type and screen order will be obtained from provider, RN will review OB Hemorrhage Protocol and Initiate capped IV (saline well)

c) High risk patients- Order for CBC, Type and Cross match for 2 Units PRBC’s will be obtained from provider, OB anesthesia will be notified, RN will review OB Hemorrhage Protocol and Initiate IV line with 1000 ml LR, unless otherwise ordered by the attending provider

2. Throughout labor and delivery, the RN will note additional risk factors and assess patient for bleeding in order to provide early intervention, such as: Prolonged 2nd stage, Prolonged oxytocin use, Active bleeding, Chorioamnionitis, and Magnesium sulfate treatment

3. At the time of delivery, all patients will be given Oxytocin 10 Units IM. If IV already running, infuse 30 Units/500ml solution; oxytocin infusion rate ordered by provider and titrated to uterine response. This is in addition to the Oxytocin IM. (Oxytocin is not to be given IV push)

4. Capped IV (saline well) or IV running at KVO rate will continue to infuse after delivery for patients at medium to high risk for postpartum hemorrhage.

5. Provider will communicate estimated blood loss to nurse prior to ending case.

6. After delivery of infant, place under buttocks drape under patient. Old drape will be removed at that time.

7. If cumulative blood loss is>500ml for vaginal birth or >1000ml for Cesarean birth, OR VS>15% change or HR>110, BP <85/45, O2 sat<95% or increased bleeding during recovery or postpartum, proceed to Stage 1.

a) Postpartum Hemorrhage Risk Assessment Reference can be used as a tool to determine early warning signs of impending postpartum hemorrhage

b) See Addendum A: Postpartum Hemorrhage Risk Assessment Reference Chart

c) OB provider should be contacted if patient triggers one red or two yellow scores utilizing the Postpartum Hemorrhage Risk Assessment Reference Chart

**B. Stage 1: Activation of OB Hemorrhage Protocol**
Cumulative blood loss >500ml vaginal birth; 1000ml C-Section or VS >15% change or HR >110, BP <85/45, O2 saturation <95% or increased bleeding during recovery or postpartum (See Addendum B: Stage 1: Activation of OB Hemorrhage Protocol)

1. Primary Nurse or designee responsibilities:

a) Notifies OB provider (attending). If attending not available, call in house physician, Notifies L&D charge and Postpartum/Antepartum unit charge RN (depending on unit origin), Notifies Anesthesiologist, Notifies Senior OB Resident per provider request, and OB Tech

b) Activates the OB Hemorrhage Protocol & Checklist

c) Establish IV, 18 gauge or larger, increases IV fluids and increases oxytocin infusion (30 Units/500ml solution). Oxytocin infusion rate to be ordered by provider; titrate to uterine response. Consider second line uterotonic agent if no response.

d) Measure all pads & linens and cumulative record of blood loss will be documented and declared to team every 5-15 minutes

e) Administer oxygen to maintain O2 saturations at >95%

f) Empty bladder: insert Foley indwelling catheter with urometer

g) Assure CBC and Type and Cross match for 2 units of PRBC’s STAT order is received by provider if not already done by this point.

h) Keep patient warm

i) Obtain postpartum hemorrhage kit

j) Document patient care on OB Hemorrhage Record (See Addendum F)

k) See medication list for Uterotonic Agents Vital Signs

l) Monitor and record O2 sat & level of consciousness (LOC) q 5 minutes

2. OB Provider responsibilities

a) Assess and manages atony and rules out retained products of conception, laceration or hematoma

b) OB-GYN (during Cesarean birth) assesses and manages atony and inspects for uncontrolled bleeding at all levels—especially broad ligament, posterior uterus, and retained placenta

3. If patient stabilizes at this stage, increase postpartum assessments and surveillance.

4. If patient continues bleeding or VS continue to be unstable and cumulative blood loss is <1500 ml, proceed to Stage 2.

C. Stage 2: OB Hemorrhage Sequential Advancement & Mobilization

Continued bleeding or vital sign instability and <1500ml cumulative blood loss (See Addendum C: Stage 2 OB Hemorrhage Sequential Advancement & Mobilization)
1. Team Leader—OB-GYN responsibilities
   a) Orders additional uterotonic medications as needed. Options include:
      (1) Hemabate 250mcg IM (if not contraindicated)—can be repeated up to 3 times every 20 minutes and/or
      (2) Misoprostol 800-1000 mcg PR
   b) Performs bimanual uterine massage
   c) Move to OR (if patient not already in OB OR/Main OR)
   d) Order transfusion PRBCs based on clinical signs and response—do not wait for lab results
   e) Considers the following other procedures/options for treatment
      (1) Vaginal birth- Visualize and repair lacerations/tears, treat Uterine atony or lower uterine segment bleeding—consider intrauterine balloon, If uterine inversion—anesthesia & uterine relaxation drugs for manual reduction
      (2) C-Section- Uterine hemostatic suture (i.e. B-Lynch suture, O'Leary, Multiple squares), Intrauterine balloon, Selective embolization
      (3) Amniotic fluid embolism—treat with maximally aggressive respiratory, vasopressor and blood product support

2. HUC responsibilities- Initiate emergency order set as directed, Per provider order: 2 units PRBCs is brought to bedside, order the following labs STAT: CBC/Plts, Pt/apt, INR, Fibrinogen

3. OB Technician responsibilities- Obtain D&C and hysterectomy procedure tray, Have cell saver available in room

4. Primary Nurse (or designee) responsibilities may include- Activate and alert the following OB Hemorrhage Response Team members to attend: Obstetrician, Anesthesiologist, Blood bank/phlebotomist, Order blood products as directed, Perform the following patient care duties:
   (1) Establishes 2nd large bore IV, at least 18 gauge, maintains adequate fluid volume with LR and adequate uterine tone with oxytocin infusion
   (2) Assess and announces vital signs and cumulative blood loss q 5-10 minutes
   (3) Sets up blood administrations set and blood warmer for transfusion
   (4) Administers meds, warm blood products as ordered
   (5) Keeps patient warm

5. Second RN/Charge nurse responsibilities- May notify the following personnel as an alert and to identify their availability per OB-GYN request: Senior GYN surgeon (Uro-GYN or GYN-oncologist), Pharmacist—alert to possible need for rFactor VIIa, Interventional radiologist if embolization is being considered,NAC—for coordination of possible lab, OR team (including the perfusionist), blood bank and family communication, OB Tech, 2nd anesthesiologist—may be called in this phase based on feedback from the anesthesiologist, Post partum/antepartum charge RN Performs the following patient care duties per OB-GYN request- Place Foley with urometer (if not already done)
Obtain OB Emergency Cart,
Obtain blood products from the blood bank tube station,
Obtain U/S machine and move into room with patient
Assist with move to OR (if indicated)
Documents care provided during response on OB Hemorrhage Record (See Addendum F)

6. Blood Bank responsibilities
   a) Determine availability of thawed fresh frozen plasma and platelets; initiate delivery of platelets if not present on site
   b) Consider thawing 2 FFP (takes 30 minutes); use if transfusing >2 units PRBCs
   c) Prepare for possibility of initiating the Massive Transfusion Protocol (Hospital Protocol 57)

7. All members continue to re-evaluate bleeding and vital signs. If cumulative estimated blood loss is >1500ml or >2 units PRBCs given or VS unstable or suspicious for DIC, proceed to Stage 3

D. Stage 3: OB Hemorrhage—Activate Massive Transfusion Protocol

Cumulative blood loss >1500ml and >2 units of PRBCs given, and VS unstable or suspicious for DIC (See Addendum D: Stage 3 OB Hemorrhage—Activate Massive Transfusion Protocol)

1. OB team leader responsibilities:
   Establish team membership and assign roles
   Manage surgical care
   Order Massive Hemorrhage Pack (see Massive Transfusion Protocol)
   Consider conservative or definitive surgery or interventional radiologic procedures
   Uterine Artery Ligation
   Hysterectomy
   Selective embolization
   Communicate additional support/personnel needs to charge RN

2. Anesthesiologist responsibilities:
   Obtain arterial blood gases
   Provide central hemodynamic monitoring
   Insert/manage CVP/PA line
   Insert/manage arterial line
   Provide vasopressor support
   Perform intubation
   Order additional labs as necessary
   Repeat CBC/PLTS, PT/pt, Fibrinogen, ABG STAT q30-60 min
3. Primary RN/circulator responsibilities-
Announce VS and cumulative measured blood loss q 5-10 minutes
Apply upper body warming blanket if feasible Use fluid warmer and/or rapid infuser for fluid & blood product administration
Apply sequential compression stockings to lower extremities if not already applied
Circulator duties in OR

4. Charge RN responsibilities
Reassign staff as needed
Assign the following roles:
One RN to assist anesthesiologist
Primary—assign as circulator
One person to enter labs and communicate with blood bank; one person to obtain blood products
Personnel to man doors that will allow non-OB staff access to Birthing Center
RN to function as interim charge nurse to attend to unit activity and staffing
Notify postpartum nurse carrying ‘crash’ beeper to respond to OR for assignment
Recorder Documentation in EPIC or on OB Hemorrhage Record
Notify the following personnel or specialists as requested
   GYN oncologist, 2nd anesthesiologist (if not already called), 2nd OB Tech, Main OR surgical team (NAC to call in on off shift) —include OR tech to assist with surgery set up and specialty instrument tray location; Perfusionist to bring and set-up cell saver, Spiritual care to escort family/SO to a private location off the Birthing Center and provide support, NAC to provide assistance as directed

5. 3rd RN responsibilities: Act as recorder, Care provided is documented on OB Hemorrhage Record

6. Blood Bank responsibilities:
Prepare necessary blood products per Massive Transfusion Protocol
Issue blood products per protocol; notify OB staff by phone after 4th set of products are issued; verbalize need to re-enter order in EPIC for continued MTP products
Issue additional blood products as needed

7. Pharmacy responsibilities:
After 8-10 units PRBC’s and coagulation factor replacement team may order rFactor VIIa.
Prepare for rFactor VIIa for administration; Consult with hematologist on-call for OB specific dosing

IV. Quality Improvement Monitoring
Bibliography for Post-Partum Hemorrhage: Beyond the Basics

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