RESPONSE:

OB HEMORRHAGE EMERGENCY MANAGEMENT

JENNIFER BOLAND, MSN, RN
MATERNAL OUTREACH COORDINATOR
THE MEDICAL CENTER NAVICENT HEALTH
WHAT WE HAVE COVERED...

• READINESS
  • EVERY UNIT

• RECOGNITION & PREVENTION
  • EVERY PATIENT
RESPONSE...

• EVERY HEMORRHAGE

• UNIT-STANDARD, STAGE-BASED, OBSTETRIC HEMORRHAGE EMERGENCY MANAGEMENT PLAN WITH CHECKLISTS

• SUPPORT PROGRAM FOR PATIENTS, FAMILIES, AND STAFF FOR ALL SIGNIFICANT HEMORRHAGES
HEMORRHAGE

CUMULATIVE BLOOD LOSS $\geq$ 1,000 ML OR BLOOD LOSS ACCOMPANIED BY S&S OF HYPOVOLEMIA

- $> 500$ ML BLOOD LOSS IN A VAGINAL DELIVERY SHOULD PROMPT INVESTIGATION
- TACHYCARDIA & HYPOTENSION ARE LATE SIGNS OF BLOOD LOSS IN PREGNANT WOMEN
- PRIMARY HEMORRHAGE- EXCESSIVE BLEEDING THAT OCCURS WITHIN FIRST 24 HOURS AFTER DELIVERY
- SECONDARY HEMORRHAGE OCCURS $>24$ HOURS AFTER DELIVERY AND MAY OCCUR UP TO 12 WEEKS PP
ETIOLOGIES

- TONE
- TRAUMA
- TISSUE
- THROMBIN

Lacerations/Episiotomies
Uterine Atony
Lacerations/Episiotomies
Uterine rupture
Retained Placenta
Placenta Accreta
MANAGEMENT

• STANDARDIZED, MULTIDISCIPLINARY & MULTIFACETED APPROACH

• GOAL: HEMODYNAMIC STABILITY WITH ID AND TREATMENT OF UNDERLYING ISSUE

• RESOURCES:
  • WWW.SAFEHEALTHCAREFOREVERYWOMAN.ORG/PATIENT-SAFETY-BUNDLES/OBSTETRIC-HEMORRHAGE/
  • HTTPS://WWW.CMQCC.ORG/RESOURCES-TOOL-KITS/OB-HEMORRHAGE-TOOLKIT
MANAGEMENT

• FACILITIES WITH LIMITED RESOURCES
  • RURAL HOSPITALS
  • NEED TO DEVELOP A COMPREHENSIVE PLAN FOR OB EMERGENCIES INCLUDING PPH
  • ASSESS FOR AVAILABLE RESOURCES
  • CONSIDER TRANSFERRING “AT RISK” PATIENTS TO HIGHER LEVEL OF CARE FACILITY
STAGE 0

ALL BIRTHS: PREVENTION & RECOGNITION OF OB HEMORRHAGE

- ACTIVE MANAGEMENT OF THIRD STAGE
  - OXYTOCIN
  - FUNDAL MASSAGE
- ONGOING QBL
- ONGOING EVALUATION OF VS
- IF:

  CUMULATIVE BLOOD LOSS >500 ML VAGINAL OR >1000 ML C/S
  OR
  VS >15% CHANGE OR HR > 110, BP < 85/45, O₂ SAT <95%
  OR
  INCREASED BLEEDING DURING RECOVERY/POSTPARTUM

PROCEED TO STAGE 1

Taken from CMQCC toolkit on OB Hemorrhage
STAGE 1
CUMULATIVE BLOOD LOSS > 500 ML VAGINAL BIRTH OR >1000 ML FOR C/S OR VITAL SIGNS >15% OR HR >110, BP ≤85/45, O₂ SATS <95% OR INCREASED BLEEDING DURING RECOVERY OR POSTPARTUM

• NOTIFY CHARGE NURSE • ACTIVATE OB HEMORRHAGE PLAN/PROTOCOL • INCREASE IV FLUIDS AND OXYTOCIN RATE • VS WITH O₂ SATS & LOC Q 5 MIN • CUMULATIVE QBL Q 5-15 MIN • GIVE SECOND UTEROTONIC AGENT AS ORDERED BY MD/CNM • CONTINUE VIGOROUS FUNDAL MASSAGE • EMPTY BLADDER • R/O RETAINED POC, LACERATION, HEMATOMA • CONSIDER POTENTIAL ETIOLOGY (4 T’S) • IF C/S AND STILL OPEN: INSPECT FOR UNCONTROLLED BLEEDING AT ALL LEVELS: BROAD LIGAMENTS, POSTERIOR UTERUS, RETAINED PLACENTA

IF:
CONTINUED BLEEDING or CONTINUED VS INSTABILTY, and <1500 ML CUMULATIVE BLOOD LOSS
PROCEED TO STAGE 2

Taken from CMQCC toolkit on OB Hemorrhage
<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
<th>Dose Frequency</th>
<th>Side Effects</th>
<th>Contraindications</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitocin</td>
<td>10-40 units/ 1000cc LR or NS</td>
<td>IV infusion</td>
<td>Continuous</td>
<td>Usually none N/V, H₂O intoxication</td>
<td>Hypersensitivity to drug</td>
<td>Room Temp</td>
</tr>
<tr>
<td>Methergine</td>
<td>0.2 mg</td>
<td>IM</td>
<td>Q2-4hr</td>
<td>HTN, N/V, hypotension</td>
<td>HTN, Pre-eclampsia, heart disease</td>
<td>Refrigerate Protect from light</td>
</tr>
<tr>
<td>Hemabate (PG F₂α)</td>
<td>0.25mg</td>
<td>IM</td>
<td>Q15-90min Max = 8/24 hours</td>
<td>N/V, F/C, diarrhea</td>
<td>Active cardiac, renal, liver, asthma, HTN</td>
<td>Refrigerate</td>
</tr>
<tr>
<td>Cytotec (Misoprostol)</td>
<td>600-1000 mcg</td>
<td>PR</td>
<td>Single dose</td>
<td>Fever</td>
<td>Rare Known allergy to prostaglandin</td>
<td>Room Temp</td>
</tr>
</tbody>
</table>
Stage 2
CONTINUED BLEEDING OR VS INSTABILITY AND <1500 ML CUMULATIVE BLOOD LOSS

- Initiate response team
- Notify blood bank
- Order products as ordered by MD
- Assign single person to communicate with blood bank
- Initiate OB hemorrhage record
- Place Foley with urometer
- Assist primary nurse prn
- Establish 2nd large bore IV
- Maintain adequate fluid volume
- Titrate oxytocin infusion to uterine tone
- Assess & announce vs q 5 min
- Announce cumulative qbl q 5-10 min
- Set up blood warmer/administration set
- Administer blood products, medications, draw labs as ordered
- Keep patient warm
- Additional uterotonic agents
- Bimanual uterine massage
- Order 2 units PRBC
- Order stat labs (CBC/PLTS, CHEM 14, PT/PTT, FIBRINOGEN)
- Transfuse PRBC based on clinical signs (do not wait for lab results)
- Think 4 T's:
  - Tone
  - Trauma
  - Tissue
  - Thrombin

Blood bank: Determine availability of thawed plasma, FFP, and PTLS. Consider thawing 2 FFP & use if transfusing >2 units PRBCs; prepare for possible massive hemorrhage.

Taken from CMQCC toolkit on OB Hemorrhage
STAGE 2

VAGINAL BIRTH

• TONE (UTERINE ATONY)
• INTRAUTERINE BALLOON
• TRAUMA (VAGINAL, CERVICAL)
• VISUALIZE & REPAIR
• TISSUE (RETAINED PLACENTA)
• D&C

C-SECTION

• TONE (UTERINE ATONY)
• COMPRESSION SUTURE
• TRAUMA (UTERINE RUPTURE)
• REPAIR IF POSSIBLE
• TISSUE (PLACENTA ACCRETA)
• TRY AND REMOVE
• POSSIBLE HYSTERECTOMY

RE-EVALUATE BLEEDING and VS IF CUMULATIVE BLOOD LOSS >1500ML, >2 UNITS PRBCS GIVEN, VS UNSTABLE or SUSPICION FOR DIC

PROCEED TO STAGE 3

OTHER:

• IF UTERINE INVERSION:
  • ANESTHESIA & UTERINE RELAXATION DRUGS FOR MANUAL REDUCTION
• IF AMNIOTIC EMOBOLISM:
  • MAXIMALLY AGGRESSIVE RESPIRATORY, VASOPRESSOR AND BLOOD PRODUCT SUPPORT

RE-EVALUATE BLEEDING and VS UNSTABLE or SUSPICION FOR DIC

PROCEED TO STAGE 3

Taken from CMQCC toolkit on OB Hemorrhage
STAGE 3
CUMULATIVE BLOOD LOSS >1500ML, >2 UNITS PRBCS GIVEN, VS UNSTABLE OR SUSPICION FOR DIC

**PRIMARY NURSE:**
- VS AND CUMULATIVE BLOOD LOSS Q 5-10 MIN
- APPLY UPPER BODY WARMING BLANKET
- USE FLUID WARMER FOR FLUIDS AND BLOOD PRODUCT ADMINISTRATION
- APPLY SCDS TO LOWER EXTREMITIES
- CIRCULATE THE OR

**CHARGE NURSE:**
- CALL IN ADDITIONAL RESOURCES NOT PRESENT
- CONTINUE TO OB HEMORRHAGE RECORD OR ASSIGN TO ANOTHER

**2ND NURSE:**
- ASSIST WITH ADMINISTRATION OF MEDS, BLOOD PRODUCTS, DRAW LABS

**3RD NURSE:**
- RECORDER

**OB PHYSICIAN:**
- ORDER/INITIATE MTP
- MOVE TO THE OR (IF NOT ALREADY THERE)
- ORDER REPEAT OF LABS Q30-60 MIN

**ANESTHESIOLOGIST:**
- ABGS
- A-LINE
- CENTRAL LINE
- VASOPRESSOR SUPPORT
- INTUBATION

**CONSIDER OPTIONS:**
- SELECTIVE EMBOLIZATION (IR)
- ETIOLOGY BASED INTERVENTIONS NOT YET COMPLETED
- PREVENT HYPOTHERMIA, ACIDEMIA
- CONSERVATIVE OR DEFINITIVE SURGERY:
  - UTERINE ARTERY LIGATION
  - HYSTERECTOMY

**BLOOD BANK:** PREPARE TO ISSUE ADDITIONAL BLOOD PRODUCTS PRN - STAY AHEAD

Taken from CMQCC toolkit on OB Hemorrhage
BLOOD PRODUCTS

- **PRBCS**
  - BEST FIRST LINE PRODUCT FOR BLOOD LOSS
  - TRANSFUSE O NEGATIVE BLOOD IN EMERGENCY

- **FFP**
  - GIVEN IN >2 UNITS PRBCS GIVEN OR PROLONGED PT/PTT

- **PLTS**
  - PRIORITY IF PLTS <50,000

- **CRYO**
  - PRIORITY IF FIBRINOGEN <80
  - BEST FOR DIC WITH LOW FIBRINOGEN AND NO NEED FOR VOLUME REPLACEMENT

Taken from CMQCC toolkit on OB Hemorrhage
OB HEMORRHAGE MANAGEMENT: MEDICAL & SURGICAL APPROACHES

MEDICAL MANAGEMENT

- UTEROTONIC AGENTS
- BIMANUAL UTERINE EXAM/ MASSAGE
- TAMPONADE TECHNIQUES
  - INTRAUTERINE BALLOON TAMPONADES
  - FOLEY CATHETER
  - UTERINE PACKING
- UTERINE ARTERY EMBOLIZATION
OB HEMORRHAGE MANAGEMENT: MEDICAL & SURGICAL APPROACHES

SURGICAL MANAGEMENT:

• D&C

• VASCULAR LIGATION

• UTERINE COMPRESSION SUTURES

• HYSTERECTOMY
OB HEMORRHAGE MANAGEMENT:
MEDICAL & SURGICAL APPROACHES

OTHER:

• UNDIAGNOSED PLACENTA ACCRETA
• UTERINE RUPTURE
• INVERTED UTERUS
• SECONDARY HEMORRHAGE
RESOURCES:

- HTTPS://WWW.CPQCC.ORG/
- HTTPS://SAFEHEALTHCAREFOREVERYWOMAN.ORG/PATIENT-SAFETY-BUNDLES/OBSTETRIC-HEMORRHAGE/