Postpartum hemorrhage survival guide

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Why should I care?

- Frequency of postpartum hemorrhage
- Number of deaths per year from postpartum hemorrhage
- Unrecognized morbidity
Frequency of postpartum hemorrhage

- 1 to 5% of deliveries,
- Definition, varies
- A condition in which a woman loses a large amount of blood postpartum, up-to-date
- Greater than 500 ML’s after vaginal delivery
- Greater than 1000 ML’s after a C-section delivery
- Massive postpartum hemorrhage, greater than 1500 ML’s
- Other definitions

Number of deaths per year from postpartum hemorrhage

- 0.6% of postpartum hemorrhages in developed countries
- Up to 20% in parts of Africa
- WHO believes that up to 60% of maternal deaths are from postpartum hemorrhage
Unrecognized morbidity

- Sheehan syndrome
- Asherman syndrome
- Deep vein thrombosis/thromboembolism
- Anemia
- Abdominal compartment syndrome
- Hemodynamic instability and end organ failure

How not to be a hero

- Risk factors for postpartum hemorrhage
- Predelivery hemorrhage risk assessment
- Intrapartum hemorrhage risk assessment
- Postpartum hemorrhage risk assessment
- Uterotonics
- Avoiding trouble
- Assessing blood loss
Risk factors for postpartum hemorrhage

- Many risk factors have been recognized
- Obesity
- Labor induction and augmentation
- Chorioamnionitis
- Magnesium sulfate
- Prior postpartum hemorrhage
- Etc.

Pre-delivery PPH risk assessment

- Induction of labor with oxytocin
- Multiple gestations
- Multipara
- Prior uterine incision
- Large uterine fibroids
- History of previous postpartum hemorrhage
- Chorioamnionitis
Pre-delivery postpartum hemorrhage risk assessment continued

- Family history of postpartum hemorrhage
- Fetal demise
- LGA, greater than 4 kg
- Morbid obesity with BMI greater than 35
- Polyhydramnios
- Placenta previa, accreta or percreta
- Low hematocrit or platelets

Intrapartum risk factors for PPH

- Labor greater than 18 hours,
- temperature greater than 100.4 degrees Fahrenheit,
- augmentation of labor with Pitocin
- Magnesium sulfate
- Prolonged 2nd stage greater than 2 hours
- Active bleeding or suspected abruption
Postpartum risk factors for PPH

- Uterine atony
- Large uterine fibroids, operative vaginal delivery or C-section
- 3rd or 4th degree perineal laceration
- Vaginal or cervical laceration and/or medio-lateral episiotomy
- Precipitous delivery
- Shoulder dystocia
- Difficult placental extraction
- Uterine inversion or concealed abruption

Uterotonics

- Pitocin IV, IM or IU
- Methergine 0.2mg IM
- Hemabate 250 micrograms IM
- Cytotec 800 to 1000 microgram per rectum
Avoiding trouble

- Recognize risk factors
- Prepare in advance, consider transfer to larger facility, 2 IVs
- Have a plan: practice the plan: follow the plan
- Avoid unnecessary interventions
- Active management of 3rd stage of labor
- Examine the placenta, ensure it is all out
- Give Pitocin postpartum, as soon as the cord is clamped

Assessing blood loss

- Underestimation of blood loss is the norm, practice your skills
- Actual weight of dry vs wet laps, 4X4, towels, clots etc
- Direct measurement via sterile under buttocks drapes
- Different materials hold different but fairly consistent amounts of blood
- 4 X 4 is ~12ml
- Lap pad ~100ml
- Surgical sponge
How to be a hero

- “HEMOSTASIS” algorithm
- Early TXA
- Uterotonics, Pitocin, Hemabate, Methergine and Cytotec
- Massive transfusion protocol
- Uterine packing
- Bakri balloon
- B Lynch procedure
- Post delivery hysterectomy

“HEMOSTASIS”

- Get Help
- establish etiology
- massage the uterus
- oxytocin infusion and prostaglandins
- shift to operating theater
- tamponade test
- apply compression sutures; systematic pelvic devascularization; interventional radiology; subtotal/total abdominal hysterectomy)
Early TXA

- Make sure TXA is available where and when you need it
- If you think TXA is needed be sure you called in all the extra help you might need!

TXA

- Antifibrinolytic agent
- Displaces plasminogen from fibrin, inhibition of fibrinolysis
- Not FDA approved for obstetrical associated hemorrhage
- Contraindicated if SAH or active intravascular clotting
- Used in Europe for PPH, studies here show level A evidence
- Adjunctive treatment, use early
- 1 g IV IVPB (~100ml) over 10 minutes or slow IVP, 2nd dose p 30 min
- Can cause side effects
Uterotonics

- Poor uterine tone is the #1 cause of postpartum hemorrhage
- Remember your uterotonics, Pitocin, Methergine, Hemabate and Cytotec
- Bimanual massage of the uterus
- Make sure the uterus is not inverted.
- Make sure retained placenta is not the problem

Massive transfusion protocol

- Does your hospital have a plan?
- What can you give, not give?
- Packed cells, uncross matched blood, fresh frozen plasma, platelets
- What labs can you do?
- CBC, CMP, PT, PTT, lactate, ionized calcium, fibrinogen
- Have you practiced your plan?
Uterine packing

- Mechanically fills uterus with packing material
- Easing quick to perform, can temporize until surgery and sometimes prevent surgery from being necessary
- Tight packing of the uterus with packing forceps and rolled gauze
- Give broad-spectrum antibiotics, do not forget about uterotonics

Bakri balloon

- 500 ML Balloon device that goes inside the uterus then is inflated. It puts direct pressure on the uterine walls creating hemostasis.
- “Ebb” complete tamponade system, dual balloon catheter, 750 mL uterine balloon and vaginal balloon to anchor the uterine balloon
- Both are easy to use, quick and simple to learn
B Lynch suture

- Open procedure, easiest to do following a cesarean delivery
- See the model for demonstration and to try your hand at performing this stitch.
- Start below the uterine incision then come out above the uterine incision. Drape the stitch over top of the uterus then enter the low back wall of the uterus exiting the opposite side but still on the back wall. Drape the stitch over the top of the uterus from back to front, and to the uterus from above the lower uterine incision exiting below. Have your assistant compress the uterus while you tighten and tied the stitch.

Post delivery hysterectomy

- Should be considered a last resort
- Should be considered before calling the coroner
- Provided informed consent prior to going to the operating room when possible
References

- St. Luke’s policies and procedures
- Gnosis postpartum hemorrhage module
- Up-to-date
- Medscape
- Pub med
- Wikipedia
- Video of Dr. Lynch demonstrating his procedure
- Etc..