

Managing Postpartum Hemorrhage in the Community Setting

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Today's Focus



Skillful management of postpartum hemorrhage is a cornerstone of safe birthing care.

Postpartum hemorrhage remains a leading cause of maternal morbidity and mortality in the United States.

Families choosing to deliver their babies at home and in birth centers need guidance through shared decision making addressing their risk, their midwife's plan for managing hemorrhage, and the resources for emergency care available in their birthing communities.

In This Presentation...

- Case presentation
- Review of risk assessment
- Review of pharmacologic management of PPH
- Comparison between hospital-based and CPM-relevant formularies and protocols.

Ob Hemorrhage in the Community Setting

27 YO g2p1001 at 39 weeks

First delivery noteworthy for EBL of 1200 mL, no other record available. Pt remembers “getting a shot”

Otherwise healthy, active, normal labs (including H/H PLT)

Spontaneous, 7 hour labor.

20 minutes after delivery, brisk trickle bleed noted.

Pitocin IM, methergine IM.

Placenta delivered 45 minutes after delivery, manual removal without antibiotics.

Called for transfer (pt stable but distance to hospital was about 45 minutes)

No retained products and pt remained stable.

This patient’s 3rd pregnancy, morbidly adherent placenta was diagnosed.

Active vs. Expectant Management

- Evidence indicates that active management of the third stage of labor (AMTSL), specifically administration of oxytocin, reduces the risk of severe postpartum hemorrhage (> 1000 mL blood loss) and the need for blood transfusion. However, in women considered low risk for postpartum hemorrhage, the advantages are not as clear.
- Research is lacking regarding the potential effect of synthetic oxytocin administration, particularly as part of the AMTSL, on maternal endogenous oxytocin, mother-infant bonding, and breastfeeding initiation.
- It is the responsibility of midwives and other maternity care providers to discuss the benefits and potential risks of AMTSL with women so that they can make informed decisions regarding labor and birth.

Prevention: How Safety Begins



Prevention: Risk Assessment

Before Birth

- known placenta previa
- suspected or proven placental abruption
- carrying twins or triplets
- pre-eclampsia and/or high blood pressure
- having had a PPH in a previous pregnancy
- having a BMI (body mass index) of more than 35
- anemia
- fibroids
- blood clotting problems
- taking blood-thinning medication
- other medications

In Labor

- induction of labor
- delay in delivery of your placenta (retained afterbirth)
- perineal tear or episiotomy (a surgical cut to help delivery)
- Operative vaginal delivery
- having a long labor (more than 12 hours)
- having a large baby (more than 4 kg or 9 lb)
- having your first baby if you are more than 40 years old
- having a raised temperature (fever) during labor
- needing a general anesthetic during delivery

Prevention: Abnormal Placentation

Risk is rising: 1970s and 1980s 1 in 2,510 and 1 in 4,017 compared with a rate of 1 in 533 from 1982 to 2002 ([4](#)).

Risk factors include:

- Prior cesarean section
- Prior uterine surgery or curettage
- Advanced maternal age
- Asherman's Syndrome
- Placenta previa
- Unexplained AFP elevation (placental biomarkers)

Prevention: Labor Disposition

- Prolonged OR precipitous
- Hyperdistended uterus (macrosomias, multiples, polyhydramnios)
- Infection (chorioamnionitis, maternal fever)
- Medication exposure (MGsO4 or Pitocin)
- Bladder inattention/obstruction



Prevention: Care Environment and Resource Availability

- Consider your transfer distance and level of first responder assistance available
- Consider your own level of practice (will you start IVs, carry medications, are there enough skilled hands available?)
- What could inhibit a timely transfer of care?
- Consider the receiving hospital's capacity and availability of resources (platelets, blood bank, who is in-house)

Prevention: Partnership With Patients

- Shared decision-making
- What can be done to lower the risk of ob hemorrhage?
- Patient understands risk, how the care team will try to mitigate risk, and what would happen if there is a hemorrhage



Management: Nonpharmacologic

- Midwives, pay attention! Parents, stay upright! Your work isn't done.
- Baby to breast
- Question of fundal massage? WHO considers fundal massage and CCT optional in their definition of active management, and does not recommend these activities by an unskilled provider.

Pharmacologic Management Overview: Education

Drug Generic (Brand)	Dose and Route	Contraindications	Side Effects
First-Line Therapy			
Oxytocin (Pitocin)	20–40 U in 1000 mL of normal saline or lactated Ringer's solution run continuously or 10 U intramuscular injection	Never give undiluted as a bolus injection	Cramping Water intoxication (hyponatremia)
Second-Line Therapy			
Misoprostol (Cytotec)	800 mcg per rectum, one dose (range 400–1000 mcg)		Diarrhea and abdominal pain
Methylergonovine maleate (Methergine)	0.2 mg intramuscular injection May repeat in 5 minutes Thereafter every 2–4 hours	Hypertension	Cramping Nausea and vomiting Hypertension, seizure, and/or headache
15-methyl-F _{2α} -prostaglandin (Hemabate)	0.25 mg intramuscular injection May repeat every 15–90 minutes up to eight doses	Asthma or active cardiac, pulmonary, renal, or hepatic disease	Vomiting and diarrhea, nausea, temperature elevation
Dinoprostone (Prostin E ₂)	20 mg vaginal or rectal suppository May repeat every 2 hours	Hypotension	Vomiting and diarrhea, nausea, temperature elevation

King, Tekoa L.. Pharmacology for Women's Health . Jones & Bartlett Learning. Kindle Edition.

Pharmacologic Management Overview: Practice Updates and Comprehensive Toolkits



Postpartum Haemorrhage
Initiative

CMQCC Obstetric Hemorrhage
Toolkit

Management: Pitocin (1st Choice for Prevention AND Treatment)

Dose: 10-40 units/500-1000 mL IV fluid or 10 units IM.

Oxytocin is a synthetic version of the natural nonapeptide produced in the posterior pituitary. The drug comes in solution at a concentration of 10 units/mL. For postpartum use, including third stage of labor, oxytocin is dosed at 10-40 units per liter of IV fluid and given as an IV infusion. The rate of infusion should be sufficient to maintain uterine contractility. The plasma half-life of oxytocin is 1-6 minutes and the clinical response is rapid after IV infusion.

Alternatively, the agent may be given as an IM injection (10 units). Intramuscular response to the drug occurs within 3-5 minutes, with a clinical response lasting about 2-3 hours. The drug may be stored at room temperature.

Side effect profile is favorable when compared to other uterotonics. Side effects include hypotension and tachycardia (when given as a rapid bolus). Side effects are rare in the absence of prolonged use at low doses. Nausea and vomiting have been reported. The most serious side effect from prolonged use of IV oxytocin is water intoxication with subsequent dilutional hyponatremia.

The only contraindication is hypersensitivity to the drug.

Management: Misoprostol

Dose: 600 mcg orally... OR... 800 mcg SL.

Previously recommended 800 mcg PR is no longer the standard of care (FIGO, CMQC).

Misoprostol (Cytotec), a PGE1 analogue, is currently the most effective drug therapy for acute postpartum hemorrhage. *Some research supporting this conclusion is mixed. This drug is used off label because it is not FDA approved for this indication. Side effects include diarrhea, shivering, pyrexia, and headache.

Contraindications include hypersensitivity.

King, Tekoa L.. Pharmacology for Women's Health . Jones & Bartlett Learning.

Management: Methergine

Dose: 0.2 mg IM. May repeat in 5 minutes and then every 2-4 hours.

Ergot alkaloids are alpha-adrenergic agonists, agonists, and therefore they initiate contraction of vascular smooth muscle in both arteries and veins. Contraction of uterine muscle exhibits as an increase in force and frequency such that the contraction becomes tetanic. Side effects include: cramping, nausea/vomiting, hypertension, seizure, headache.

Methylergonovine maleate (Methergine) is contraindicated in the presence of maternal hypertension since its vasoconstrictive action may cause sudden severe hypertension. Also use with high caution after administration of other vasoconstrictive agents, such as ephedrine.

King, Tekoa L.. Pharmacology for Women's Health . Jones & Bartlett Learning.

Management: Hemabate

Dose: 250 mcg IM. May be repeated at 15-90 minute intervals for no more than a total of 8 doses.

Note: Similar to misoprostol, so unlikely to be effective if miso failed and vice versa)

Hemabate is FDA-approved for the treatment of postpartum hemorrhage secondary to uterine atony not responsive to conventional treatment (massage and oxytocin). The peak plasma level of the drug is reached about 30 minutes after injection. A successful clinical response is expected after a single injection in about 75% of cases. In refractory cases, additional dosing at 15-90 minute intervals may be beneficial. The total amount of drug given should not exceed 2 mg (8 doses). The clinical response may be enhanced with concomitant use of oxytocin. It may be less effective when used in the setting of chorioamnionitis. It should be noted that other uterotonic agents are also less effective in the setting of chorioamnionitis. The drug must be refrigerated when stored. Recognized side effects include nausea, vomiting, diarrhea, fever (up to 1 degree Celsius), bronchospasm, and hypertension.

Contraindications: It is recommended that the drug be given with caution to patients with active hepatic or cardiovascular disease, asthma, or hypersensitivity to the drug.

Management: Tranexcemic Acid

Dose: 1 g in 10 mL (100 mg/mL) IV at 1 mL per minute (i.e., administered over 10 minutes), with a second dose of 1 g IV if bleeding continues after 30 minutes. TXA should be administered via an IV route only for treatment of PPH.

TXA is a competitive inhibitor of plasminogen activation and can reduce bleeding by inhibiting the breakdown of fibrinogen and fibrin clots. Early use of IV TXA (as early as possible after clinical diagnosis of PPH, and only within 3 hours of birth) in addition to standard care is recommended for women with clinically diagnosed PPH following vaginal birth or caesarean section.

TXA should not be used in women with a clear contraindication to antifibrinolytic therapy, including known thromboembolic event during pregnancy, history of coagulopathy, active intravascular clotting, or known hypersensitivity to TXA.

Updated WHO Recommendation on Tranexamic Acid for the Treatment of Postpartum Haemorrhage

Management: Not Discussed (But Don't Forget)

- Start IV(s)
- Fluid replacement
- Manual removal (ideally with administration of antibiotics)
- Uterine tamponade (Bakri)
- OR resources: B-Lynch, hysterectomy



Bidirectional Learning Opportunity

- Some certified professional midwives practice in environments where the pharmacologic formulary is limited. By necessity, CPMs must develop their skills of initial and ongoing risk assessment, partnering with and educating pregnant patients in order to decrease risk, ongoing evaluation of labor disposition, and the timely activation of consultation and transfer. These skills may be deemphasized in hospital practice where medications, procedures, and surgery are readily available.
- Risk assessment and planning skills may be deemphasized in hospital practice where medications, procedures, and surgery are readily available and where there may not be continuity between prenatal care and delivery.
- What are your challenges in working with your local healthcare system? What is going well?

Thank You

