Management Updates for Midwives: Cholestasis in Pregnancy & Postpartum Hemorrhage

Dr. Brenda Wagner

May 26, 2025 | 1200-1300

Audio and Video start at 12 pm

Ask questions at slido.com #midwifery

THE UNIVERSITY OF BRITISH COLUMBIA
Continuing Professional Development
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Truth and Reconciliation

- I live as a settler on the lands stewarded since time immemorial of the Sḵwx̱wú7mesh Úxwumixw (Squamish nation) which means "mother of the wind" and "people of the sacred water."
- I recognize that the Indigenous people of Canada have been disadvantaged and wrongly treated by the colonial presence and systems of government and that I as a settler must work toward reconciliation wherever and whenever possible.

LEARNING OBJECTIVES

- Review the latest evidence and guidelines for diagnosis and management of cholestasis in pregnancy
- Review best practices and current recommendations for prevention and management of postpartum hemorrhage

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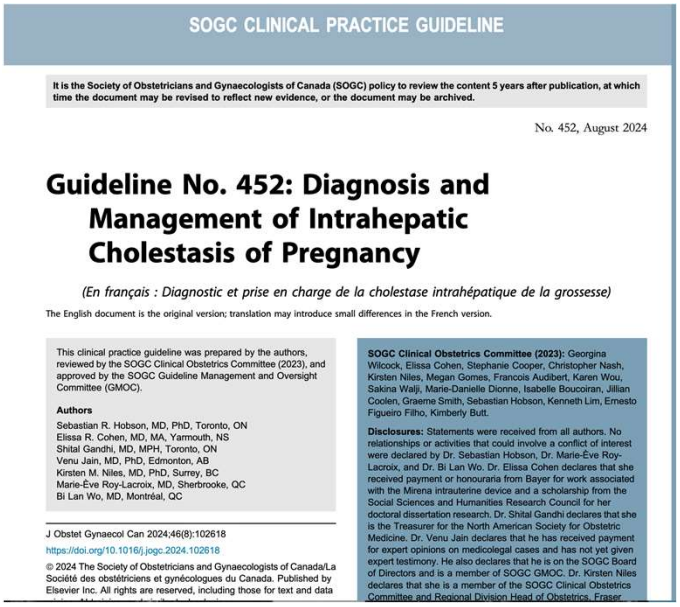
3

Conflict of Interest and Off Label

- I have no conflicts to declare , and no financial support has been received for the preparation of this talk, and I have no financial or personal benefit from any recommendations that I will make today.
- There will be off label use of medications discussed.

Intrahepatic Cholestasis of Pregnancy



SOGC CLINICAL PRACTICE GUIDELINE

It is the Society of Obstetricians and Gynaecologists of Canada (SOGC) policy to review the content 5 years after publication, at which time the document may be revised to reflect new evidence, or the document may be archived.

No. 452, August 2024

Guideline No. 452: Diagnosis and Management of Intrahepatic Cholestasis of Pregnancy

(En français : Diagnostic et prise en charge de la cholestase intrahépatique de la grossesse)

The English document is the original version; translation may introduce small differences in the French version.

This clinical practice guideline was prepared by the authors, reviewed by the SOGC Clinical Obstetrics Committee (2023), and approved by the SOGC Guideline Management and Oversight Committee (GMOC).

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Intrahepatic Cholestasis of Pregnancy (ICP)

- Complex multifactorial etiology (hormonal, genetic, environmental)
- Manifests in 2nd or 3rd trimester
- Pruritis causes maternal discomfort but no serious maternal harm
- Perinatal and Neonatal complications can occur.
- Stillbirths are felt to be related to increase bile salts in fetal circulation impacting electric impulses in the heart and/or sudden placental vasoconstriction
- Other adverse outcomes include meconium, spontaneous and iatrogenic preterm labour, neonatal respiratory distress and admission to NICU

ICP – What's New Diagnosis

- SOGC endorses diagnostic Level of TSBA >19 m/L non-fasting
  - Pregnant women and individuals (PW&I) can have higher Total Serum Bile Acids (TSBA) because of increased estrogen and progesterone.
  - Non-fasting levels are more likely to detect severe disease
- If TSBA is normal but symptoms persist – repeat every 2-4 weeks
- Follow TSBA every 2-4 weeks to monitor progressing and determine highest level to determine time of intervention
- Liver Tests to do with suspected ICP – AST, ALT (may be elevated and may be elevated before bile salts) γGT, Bilirubin (usually normal)
- Magnitude of the increase of TSBA correlates with more severe outcomes

ICP – What's Not New Differential Diagnosis

Rule out HELLP syndrome, AFLP, drug hepatotoxicity, toxins, check Hep B and C serology results, coags only when signs of bleeding abnormality.

DDX also includes atopic dermatitis, dermatoses of pregnancy, autoimmune hepatitis, biliary obstruction, hyperemesis, primary biliary cirrhosis, other systemic disease or veno-occlusive diseases (SOGC guideline has a helpful table in Appendix B)

If occurs before 20 weeks or rash, bilirubin or γGT significantly abnormal consider DDx and IM/MFM review

ICP What's New - Observation

- NST, BPP or Ultrasound does not change the outcome of stillbirth or identify those at risk for adverse outcomes
- All pregnant women and individuals should be aware fetal movement is the primary method for assessing fetal well being and should seek care if concerned.
- If units choose to monitor pregnant women or individuals with ICP with NST or BPP after shared decision making –
  - BPP or NST every 1-2 weeks is TSBA 40-99 µmol/L
  - BPP or NST 1-2 times per week if TSBA 100 µmol/L or higher
- Ultrasound for growth, fluid or doppler is not recommended

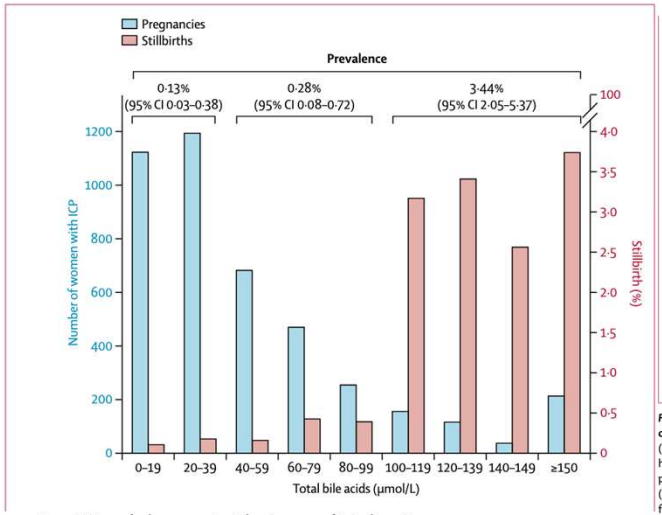
That's Not New – Treatment

- Ursodeoxycholic acid (Ursodiol)
  - 10–15 mg/kg/day, up to 20 mg/kg/day maximum, in 2-3 divided doses
  - Starting dose ~500mg BID, titrate every 1-2 weeks based on symptoms
  - Off-label use (not recommended in pregnancy)
- Rifampicin - 300-1200 mg/d
- Vitamin K – only if deficient or coagulopathy
- Topical emollients (PUPPPs cream) and antihistamines (hydroxyzine)

ICP - What's Important to Discuss

- Risk of stillbirth (related to TSBA level) and preterm labour (independent of TSBA)
- Risk of preeclampsia and gestational diabetes
- Risk of future autoimmune, liver, and cardiovascular disease
- Risk of recurrence in future pregnancies.

ICP:The Meta-analysis that changed the recommendations for induction



Association of adverse perinatal outcomes of intrahepatic cholestasis of pregnancy with biochemical markers: results of aggregate and individual patient data meta-analyses

Caroline Ovadia, Paul T Seed, Alexandros Sklavounos, Victoria Geenes, Chiara Di Ilio, Jenny Chambers, Katherine Kohari, Yannick Bacq, Nuray Bozkurt, Romana Brun-Furrer, Laura Bull, Maria C Estiú, Monika Grymowicz, Berrin Gunaydin, William M Hague, Christian Haslinger, Yayi Hu, Tetsuya Kawakita, Ayse G Kebapcilar, Levent Kebapcilar, Jūratė Kondrackienė, Maria P H Koster, Aneta Kowalska-Kanka, Linas Kupčinskas, Richard H Lee, Anna Lausatelli, Rocio I R Macias, Hanns-Ulrich Marschall, Martijn A Oudijk, Yoel Raz, Eli Rimon, Dan Shan, Yong Shao, Rachel Tribe, Valeria Tripodi, Cigdem Yayla Abide, Ilter Yenidede, Jim G Thornton, Lucy C Chappell, Catherine Williamson**

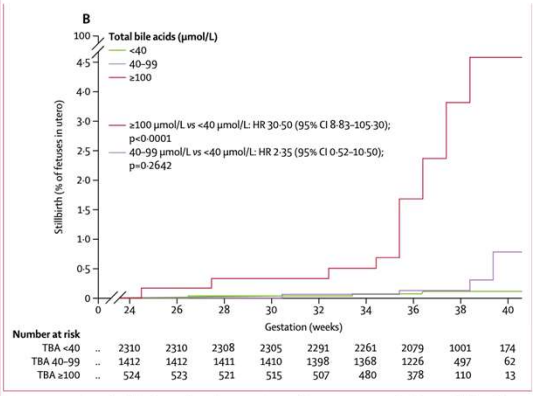


Figure 4: **Proportion of stillbirths, number of pregnancies, and time-to-event analysis, by total bile acid concentrations in singleton pregnancies with intrahepatic cholestasis of pregnancy**
(A) Number of women with intrahepatic cholestasis of pregnancy (blue bars) and proportion of those women who had a stillbirth (red bars) by peak total bile acid category for women with singleton pregnancies. Stillbirth prevalence by total bile acid groups (<40 μmol/L, 40–99 μmol/L, and ≥100 μmol/L) is shown at the top of the graph. (B) Kaplan-Meir plot showing the proportion of fetuses in utero who were stillborn from 24 to 40 gestational weeks for singleton pregnancies. Data were analysed by completed gestational week categories, with alterations plotted mid-week to reflect uncertainty by individual day of change. Data are not shown from 40 weeks because of the low remaining numbers of fetuses in utero. HR=hazard ratio. ICP=intrahepatic cholestasis of pregnancy.

ICP What's New – Induction Recommendations

SOGC recommendations.

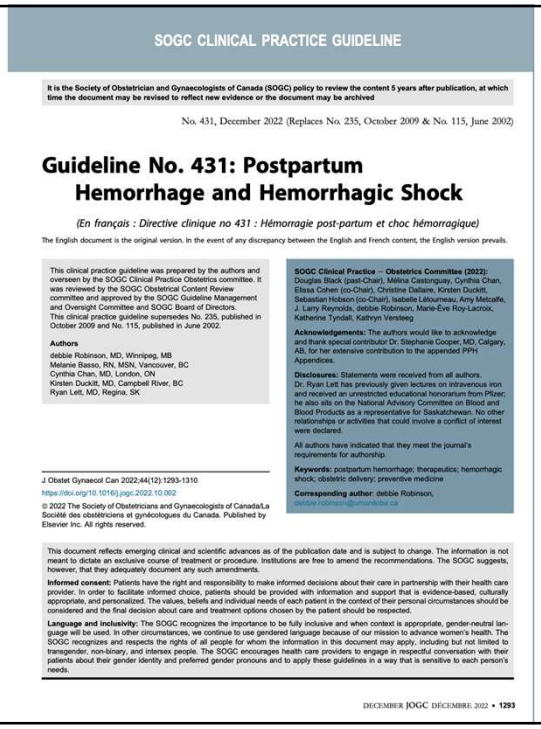
- Counsel regarding optimal delivery timing based on the highest recorded **non-fasting** TSBA: induction **may be** offered at:
  - 20- 39 µmol/L at $39^0 – 39^6$ weeks (RCOG before 40 weeks)
  - 40-69 µmol/L at – 38^0-38^6 weeks (RCOG 38-39 weeks)
  - 70- 99 µmol/L at 37^0-37^6 weeks (RCOG 38-39 weeks)

- Greater than 100 µmol/L induction **should be** offered
  - by 36 weeks (strong, high recommendation)
  - earlier induction may be considered in PW&I with comorbidities or other risks factors (i.e., multiple pregnancy, preeclampsia, gestational diabetes, previous stillbirth secondary to ICP and/or severe persistent maternal pruritus.

ICP – Summary

- Remember – itching is common in pregnancy and can be limited to the hands and feet (possibly due to edema)
- Gestational pruritic = itching and peak TSBA < 19 µmol/L
- ICP = TSBA > 19 µmol/L
- Transaminases may be elevated before TSBA
- Decision about induction is dependent on the highest TSBA
- Confirm postpartum that symptoms and TSBA and transaminases have normalized

PPH New Guideline



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No. 431, December 2022 (Replaces No. 235, October 2009 & No. 115, June 2002)

Guideline No. 431: Postpartum Hemorrhage and Hemorrhagic Shock

(En français : Directive clinique no 431 : Hémorragie post-partum et choc hémorragique)

The English document is the original version. In the event of any discrepancy between the English and French content, the English version prevails.

This clinical practice guideline was prepared by the authors and overseen by the SOGC Clinical Practice Obstetrics committee. It was reviewed by the SOGC Obstetrical Content Review committee and approved by the SOGC Guideline Management and Oversight Committee and SOGC Board of Directors. This clinical practice guideline supersedes No. 235, published in October 2009 and No. 115, published in June 2002.

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All authors have indicated that they meet the journal's requirements for authorship.

Keywords: postpartum hemorrhage; therapeutics; hemorrhagic shock; obstetric delivery; preventive medicine

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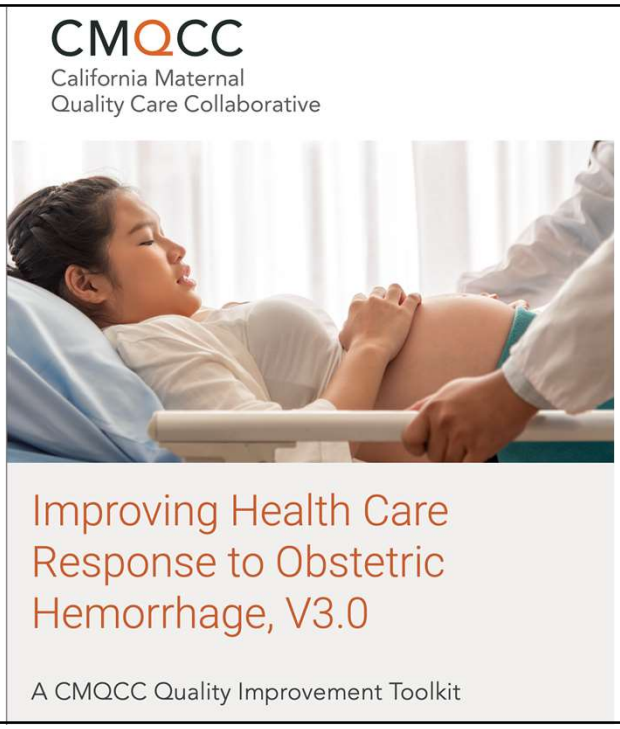
This document reflects emerging clinical and scientific advances as of the publication date and is subject to change. The information is not meant to dictate an exclusive course of treatment or procedure. Institutions are free to amend the recommendations. The SOGC suggests, however, that they adequately document any such amendments.

Informed consent: Patients have the right and responsibility to make informed decisions about their care in partnership with their health care provider. In order to facilitate informed choice, patients should be provided with information and support that is evidence-based, culturally appropriate, and personalized. The values, beliefs and individual needs of each patient in the context of their personal circumstances should be considered and the final decision about care and treatment options chosen by the patient should be respected.

Language and inclusivity: The SOGC recognizes the importance to be fully inclusive and when context is appropriate, gender-neutral language will be used. In other circumstances, we continue to use gendered language because of our mission to advance women's health. The SOGC recognizes and respects the rights of all people for whom the information in this document may apply, including but not limited to transgender, non-binary, and intersex people. The SOGC encourages health care providers to engage in respectful conversation with their patients about their gender identity and preferred gender pronouns and to apply these guidelines in a way that is sensitive to each person's needs.

Based on Validated work done by California Maternal Quality Care Collaborative



CMQCC
California Maternal
Quality Care Collaborative

Improving Health Care Response to Obstetric Hemorrhage, V3.0

A CMQCC Quality Improvement Toolkit

Why is this work needed

- Even in Canada, PPH is a contributor to significant morbidity and mortality
- Canada records a PPH rate of 5.6% (2003-2010)
- International data shows if blood loss is measured rate is 10%
- Care Providers are known to underestimate blood loss
- Women and individuals of reproductive age often maintain normal vital signs (especially when supine) which masks blood loss until blood loss is substantial. If birth and you think blood loss is more significant than vitals are showing, use consider orthostatic vital signs.

What can we do?

Assessment

Early Intervention

Are the keys to reducing adverse outcomes

SOGC

- Risk Assessment
- Risk Reduction
- Recognize and Reevaluate
- React
- Resuscitate
- Review

CMQCC

- Readiness
- Recognition
- Response
- Report

Every prenatal PW&I should have an evaluation for key risk factors – use the 4 T's

Antepartum anemia increases the risk postpartum transfusion. Work up and treat anemia before delivery.

Routine risk assessment allows resources and staff to be ready before birth or a PPH.

Risk assessment should be done
- on admission
- at the start of the second stage
- at transfer to postpartum
- any time the PW&I condition changes.

Clearly communicate risk factors during hand-offs or new providers involved in care.

Intrapartum C-Section, especially in 2nd stage, need close surveillance for severe hemorrhage from refractory atony and surgical causes (including hysterotomy extensions).

Risk Assessment

Remember, 40% of PW&I with obstetric hemorrhage have no identifiable risk factors

Risk Assessment

Postpartum Hemorrhage Risk Assessment and Action Plan

Wt (kg) = _____ Most Recent Hb (g/L) _____
Calculate Maximum Allowable Blood Loss (MABL): $\frac{\text{Wt x 100ml/kg x (Hbi-70)}}{\text{(Hbi + 70) x 0.5}}$
(maximum allowable blood loss before Pt Hb = 70)

NB: use 70 ml/kg if BMI >35, or severe pre-eclampsia

MABL = _____ml

	Low Risk	Medium Risk	High Risk	Risk Category
Admission Risk Assessment	• No prior uterine incision • No prior PPH • Parity <4 • Singleton pregnancy	• Uterine surgery outside of pregnancy (eg, myomectomy) • Previous CS >3 • Previous parity >4 • Multiple gestation • Known uterine fibroids • Polyhydramnios • Prior PPH • Preeclampsia (mild/moderate) • MgSo4 in labour • Low lying placenta (resolved) • At discretion of the team	• Placenta previa/low lying placenta • Placenta accreta or history of accreta • Current platelets <100 x 10^9/L • Known clotting/bleeding disorders • Active bleeding on admission • Severe preeclampsia • At discretion of the team	☐ Low risk ☐ Medium risk ☐ High risk
Intrapartum Risk Assessment	• Remains low risk	• Remains medium risk	• Chorioamnionitis, fever, sepsis • Prolonged labour • Prolonged use of oxytocin • Prolonged 2nd stage (>2hr prim, >1hr multip)	☐ Low risk ☐ Medium risk ☐ High risk
ACTION	• Active management of third stage	• CBC & type and screen • Review postpartum hemorrhage checklists • Use calibrated drape for delivery • Active management of third stage	• CBC & type and screen • Review postpartum hemorrhage checklists • Notify OB/anesthesia • Consent patient for blood components/ products • Use calibrated drape for delivery • Active management of third stage	***Always use highest risk category in L&D. Patient may never drop to a lower level of risk.**

Risk Assessment and Risk Reduction

Maximal Allowable Blood Loss (MABL)

The purpose of the MABL is to help the team identify when a pregnant women or individual needs intervention for blood loss as soon as possible after a hemorrhage.

Wt (kg) =

Most recent hgb (Hbi) =

Calculate MABL = $\frac{\text{Wt x 100ml/kg x (Hbi – 70)}}{\text{(Hbi+70) x 0.5}}$

Wt and Hbi can be taken from last antenatal visit and recent hgb.

Postpartum risk category is based on post delivery risk assessment (below)		
Post Delivery Risk Assessment	• Precipitous delivery • Emergency cesarean section or instrumental delivery • Perineal/cervical laceration/episiotomy • Ongoing vaginal bleeding • Manual removal of placenta • QBL > 1000 mL • Hgb <80 and/or current platelets <100 x 10^9/L • At discretion of team (consider including previously high risk category)	☐ Low risk–no risk factors ☐ At risk–risk factors

Postpartum Hemorrhage Postpartum Risk Assessment

Studies of women and their partners show that lack of timely information and long periods of separation from their babies and families are central themes in their experience. The lack of communication affects women's understanding of their health needs postpartum, particularly around breastfeeding and mental wellness."

"Patients with known risk factors should be counseled and informed about the likelihood of obstetric hemorrhage, and how to prepare in advance for recovery support after they are discharged postpartum."

From the CMQCC – the impact of PPH on pregnant women and individuals and their families

Risk Reduction

Why we need to measure and not estimate –

Denial is Delay

- Visual estimates way underestimate the true blood loss
- Keep a record of dry weights for sponges, towels, sheets, drapes in your kit and use baby scale to measure weights.
- Try to separate the amniotic fluid from the blood loss – can do simply by switching covers just before or after birth
- Ideally the cumulative blood loss in first 24 hours should be measured

Risk Reduction – PPH Stage

Pregnant patients may maintain normal vital signs (VS) despite significant blood loss. Do not delay appropriate treatment if significant blood loss has occurred and ongoing bleeding continues — even if VS remain in normal range.

Classification of PPH by Stage

	Estimated Blood loss	Blood Pressure (BP)	Heart Rate (HR)	Signs and Symptoms
Stage 0	<500 mL for vaginal birth <1000 mL for CD	Normal	<100 bpm	Often asymptomatic
Stage 1 (mild)	>500 mL for vaginal birth >1000 mL for CD	Normal	<110 bpm	Often asymptomatic or may have signs and symptoms of severe PPH (see below)
Stage 2 (moderate)	1000-1500 mL	Postural hypotension, mild decrease in systolic (80-100 mmHg)	>110 bpm	Often asymptomatic or may have signs and symptoms of severe PPH (see below)
Stage 3 (severe)	>1500 mL	Significant decrease in systolic BP (70-80 mmHg)	>120 bpm	- Diaphoresis - Delayed capillary refill time - Tachypnea - Pallor - Anuria/oliguria - Decreased level of consciousness (LOC) - Agitation - Cool extremities

Risk Reduction

Active Management of 3rd stage

- All you need is a uterotonic – and maybe not in everyone
- Cord traction can be done after placental separation but is not a big benefit (reduces 3rd stage by 4-6 minutes and reduces MBL by less than 30 mls)
- Routine oxytocin has not been shown to make a difference in low-risk pregnant women and individuals so all should have an option to discuss the risks and benefits prior to administration
- IM is reasonable in low-risk PW&I but IV should be considered in high-risk PW&I
- Carbetocin +/- TXA should be considered in moderate and high-risk PW&I

Risk Reduction Active Management of 3rd stage.

Oxytocin is a better prophylactic uterotonic than ergometrine, carboprost, or misoprostol with more efficacy and fewer side-effects.

Oxytocin in low risk you can choose to administer IM or IV

Oxytocin for high risk – administer IV. IV bolus needs to be limited to 3 IU for cardiac safety and an IV infusion is better.

Evidence shows the use of carbetocin is the best first line prophylaxis at CD and emerging evidence suggests it may also be the best at vaginal birth.

TXA - prophylactic use (**WITH** a prophylactic uterotonic agent) in individuals at high risk of PPH (caesarean or vaginal delivery) is a reasonable choice.

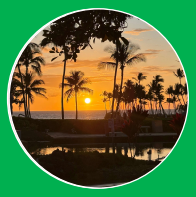
Risk Reduction Management of 3rd Stage

Misoprostol

- Prolonged onset of action means it is not an effective treatment for PPH
- Can be used with oxytocin to enhance prophylaxis
- If you are using misoprostol as an adjunct to oxytocin for prevention, only give it sublingually. A dose of 200 mcg may often sufficient.

- Never use more than 400 mcg.
- Never use rectally, onset of action is too slow.
- Never use for treatment.

Risk of PPH and Risk Reduction Medication.



Mild

Consider Oxytocin IM

Moderate

Oxytocin IV or

Carbetocin +/- TXA

High

Carbetocin +TXA

Risk Reduction - Active Management of Third Stage Medication.

Oxytocin

- IV Bolus 3 mg IV
- IV quick infusion 4IU/100 ml and infusion of 7.5-15 IU/h is sufficient to maintain tone
- 10 U IM

Carbetocin (Heat Stable for out of hospital birth)

- IV 100 mcg slowly over one minute
- IM 100 mcg

TXA

- 1000mg in 100ml NS and infuse IV over 30-60s (May repeat in 30 min)

Misoprostol

- 200 – 400 mcg sublingual (no other route)

Risk Reduction

- Discontinuing oxytocin prior to Caesarean Section reduces blood loss.
- There is the greatest benefit after 60 minutes.
- There is increased benefit in PW&I with a BMI >40 kg/m² with maximum benefit at 99 minutes.
- When maternal and fetal condition are stable, allowing time for an Oxytocin wash-out interval may be beneficial particularly if the PW&I has a higher BMI

Recognize and Re-evaluate.

- Failure to discern both the extent and source of the bleeding leads to needless delay.
- Recording Quantitative Blood Loss (QBL) and Vital Signs is key to knowing when PPH is moving between stages.
- Bimanual compression is helpful until uterotonics take effect and facilitates removing clots from the lower segment.
- Emptying the bladder is key.

React - Uterotonics

- Carbetocin can be used as a uterotonic **IF** not given for prophylaxis. If Carbetocin used for prophylaxis no benefit to giving oxytocin
- TXA –Always give when giving a second uterotonic. Immediate treatment improves efficacy. can repeat after 30 mins if given for prophylaxis
- Ergometrine – can be given IM or in life threatening situations IV. Adverse events limit it to second line agent. Never use in gestational hypertension or in PW&Is on HIV protease inhibitors
- Carboprost – Give IM or intramyometrial – side effects limit use to second line agent. Give loperamide with carboprost. Don't give with asthma

Recognize and Re-evaluate/React

If what you are doing is not working –

re-evaluate everything

- Tone
  - Tissue
    - Trauma
      - Thrombin

Resuscitate

Everyone on the team needs to work towards resuscitation

Key factors are

Oxygen - reduces tissue hypoxia	Warming – hypothermia increases mortality	Volume – 1-2 L Lactated Ringer's and start PRBC's before QBL>MABL

DEBRIEFING IS

- An interactive, bidirectional and reflective conversation
- Fosters better communication and teamwork in subsequent clinical scenarios.

Review

Debrief

- Debrief with the family and the team

Remember

- Remember that this can be a traumatic event and resilience is built by systems that allow individual to acknowledge and process the traumatic experiences, engage in self-care, and are a supportive network. Releasing trauma can involve techniques like mindfulness, breathing exercises, and even creative expression

Review

Resources

- Guideline No. 452: Diagnosis and Management of Intrahepatic Cholestasis of Pregnancy (SOCG)
- Guideline No. 431: Postpartum Hemorrhage and Hemorrhagic Shock (SOGC)
- California Maternal Quality Care Collaborative: https://www.cmqcc.org/
- Midwifery Emergency Skills Program (MESP) at UBC CPD: https://elearning.ubccpd.ca/course/view.php?id=81
- Ovadia C. et al, Association of adverse perinatal outcomes of intrahepatic cholestasis of pregnancy with biochemical markers: results of aggregate and individual patient data meta-analyses, Lancet 2019; 393: 899–909, Published Online February 14, 2019, http://dx.doi.org/10.1016/S0140-6736(18)31877-4