Gynuity HEALTH PROJECTS

NCMNH
NATIONAL COMMITTEE FOR MATERNAL & NEONATAL HEALTH

PREVENTION AND TREATMENT OF POSTPARTUM HAEMORRHAGE (PPH) WITH MISOPROSTOL

PREVENTION AND TREATMENT OF POSTPARTUM HAEMORRHAGE (PPH)

1. INTRODUCTION

Postpartum haemorrhage (PPH) occurs in about 2% of all deliveries and is the leading direct cause of maternal death worldwide. It accounts for more than 25% of maternal deaths. Most of these deaths occur in low income countries.

In Pakistan, PPH accounts for 27.2% of maternal deaths i.e. nearly 4,500 deaths per year.

Definition of PPH

"Vaginal bleeding more than 500ml (approximately 2 cups full) or more within 24 hours after birth, irrespective of placenta being delivered or not".

If blood loss is more than 1000 ml it is considered a **severe PPH.**

2. CAUSES OF MATERNAL DEATHS

There are five major causes of maternal deaths

2.1 PostpartumHaemorrhage (PPH)
2.2 High blood pressure during pregnancy(Pre eclampsia/ Eclampsia)
2.3 Infections (usually after childbirth)
2.4 Unsafe abortion
2.5 Complications of delivery (Particularly Obstructed Labour)

3. FACTS ABOUT PPH

- ♣ Uterine atony after delivery accounts for 70%of all PPH.
- ♣ PPH cannot always be predicted. It can occur suddenly without any identified risk factors.
- ♣ Even reasonable loss of blood can weaken anemic women (and can be life threatening).
- ♣ If PPH is not controlled, it can cause death within two hours after bleeding starts.

4. TYPES OF PPH

- ♣ Primary PPH
- ♣ Secondary PPH

Primary PPH is excessive bleeding within 24 hours of delivery of the baby.

Secondary PPH is excessive bleeding after 24 hours of delivery and within six weeks postpartum. Most secondary PPH is due to retained products of conception and infection, or both.

5. CAUSES OF PRIMARY PPH (4TS)

- **Tone**–Normally, after childbirth, natural contractions provide tone (strength) to the muscle fibers of the uterus. The pressure compresses the blood vessels. Clotting takes place. Clots seal the blood vessels of the placental bed and blood loss is minimized to normal amount. Lack of tone (atony) of the uterus is the most common cause of PPH (70% or more). Without adequate pressure the blood flow to the placental bed can continue unchecked.

- **Trauma** –Injury is the second common cause of PPH (20%). Uterine, vaginal, cervical or perineal tears and cuts (episiotomies) can all cause bleeding.

- **Tissue** – Fragments of placenta left in the uterus or retained placenta will not let the uterus to contract properly(10%).

- **Thrombin / Clotting disorders** – If clotting mechanism of the woman's blood is weak and blood does not clot in normal time, it can cause bleeding without any other cause. Or it can make bleeding worse when due to a different cause. Fortunately it is a rare condition (1%).

6. ATONY (themost common cause of PPH)

Risk factors that may cause Uterine Atony

6.1 Over extended or tired uterus due to;

- Multiple gestation
- Polyhydramnios
- Fibroid in the uterus
- Prolonged labor

6.2 Other Causes

- Rapid labor
- Augmented labour
- High parity
- Placenta previa
- Uterine anomalies
- General anesthesia
- Anemia (contributing factor)

7. ABOUT UTEROTONICS

Uterotonics are drugs that help the uterus to contract and therefore can help prevent and treat PPH caused by uterine atony.

Generic name of the drug	Advantages	Weaknesses
Oxytocin	• First choice to manage PPH • Generally no side effects	• Requires skill for IM/IV injection • Not heat stable
Ergometrine	• Effect lasts 2 to 4 hours	• Requires skill for IM/IV injection • Can cause tonic uterine contractions • Increases risk of hypertension, vomiting, headache • Is contraindicated in woman with hypertension or heart disease • Not heat stable
Syntometrine Injection (a mixture of Oxytocin and Ergometine)	• Combined effect of rapid action of Oxytocin and sustained action of Ergometrine	• Increases risk of hypertension, nausea and vomiting • Not heat stable
Misoprostol	• Tablet form (does not require skills for IV/IM injection) • Low cost • Long shelf life • Easy to use and easy to store	• Has a few side effects (but these are temporary and self-correcting)

8. PREVENTION OF PPH

The most effective technique for preventing atonic PPH is Active Management of Third Stage of Labour (AMTSL) for details see Annexure 1.

All women giving birth should be offered uterotonics during the third stage of labour for prevention of PPH (WHO).

The recommended uterotonic to use for prevention and treatment of PPH is Oxytocin (IM/IV, 10 IU). However if Oxytocin is not possible, Misoprostol can be used.

8.1 Misoprostol for Prevention of PPH

After birth of the baby, check for the presence of another baby in the uterus before giving Misoprostol. If none, immediately give orally 3 tablets of 200 microgram (total 600 microgram) before delivery of the placenta.

Oral administration means to swallow tablets with liquid.

9. TREATMENT OF PPH

Prophylaxis can help to prevent PPH caused by uterine atony. It must be remembered that even after using prophylaxis, some women will still bleed excessively and need treatment. Uterotonics can help in the treatment of atonic PPH.

The recommended uterotonic for the treatment of atonic PPH is IVOxytocin. If that is not possible, Misoprostol should be given.

9.1 Misoprostol for Treatment of PPH

Give 4 tablets of 200 mcg (total 800 mcg) sublingually. The tablets will dissolve in 20 to 30 minutes. Any remaining pieces can be swallowed with a sip of water.

Sublingual administration means to place tablets under the tongue.

The sublingual route can be used even if the woman is unconscious because tablets will dissolve without water.

IMPORTANT: Even if bleeding seems under control, the woman needs close monitoring for 2 hours postpartum to check that uterus is contracted and amount of bleeding is normal (as expected after child birth)

10. ADDITIONAL STEPS TO MANAGE ATONIC PPH

- ♣ Encourage the woman to pass urine (even in the bed).
- ♣ Examine the placenta to ensure it is complete.
- ♣ Ensure that the uterus is contracted. If not, gentle abdominal massage on the fundus can be applied until the uterus becomes firm. Sometimes blood and clots will be expelled during this process.

If bleeding continues, it is a DANGER SIGN and requires immediate referral to an EmONC facility.

10.1 While waiting to transport the woman to an EmONC facility, perform manual compression of abdominal aorta as under:

- ♣ Apply downward pressure with a closed fist, over the abdominal aorta, directly through the abdominal wall.
- ♣ The point of compression is just above the umbilicus and slightly to the left.
- ♣ Aortic pulsations can be felt easily through the anterior abdominal wall, in the immediate postpartum period.
- ♣ With the other hand, palpate the femoral pulse to check the adequacy of compression. If the pulse is palpable during compression, the pressure exerted by the fist is inadequate. Increase the pressure. Maintain compression and keep checking for the flow of blood to decrease (see figure 1).
- ♣ If Pneumatic Anti-shock garment is available, put it on and refer.

OR

10.2 Apply external bimanual uterine compression as under:

- ♣ Place the left hand on the fundus and make it go down as far as possible.
- ♣ Place the right hand flat on the abdomen between the umbilicus and symphysis pubis.
- ♣ Press the hands towards each other in order to apply pressure (see figure 2).
- ♣ Keep checking if the flow of blood has decreased.
- ♣ If Pneumatic Anti-shock garment is available, put it on and refer.

If uterus is contracted but bleeding continues, **PPH is definitely not due to atony. Take immediate action to transfer the woman to a facility equipped to handle obstetrical complications.**

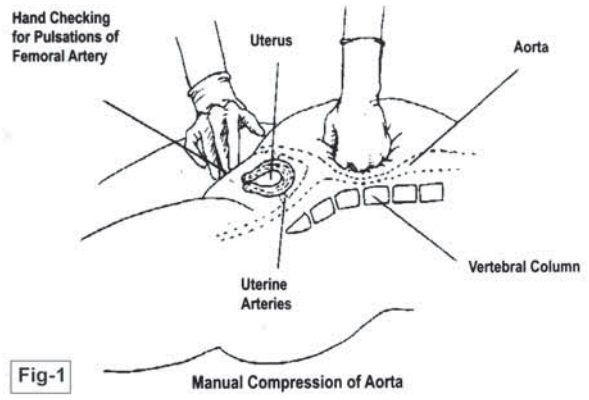


Fig-1

Fig-2

11. ABOUT MISOPROSTOL

Misoprostol is a prostaglandin E1 analog. It causes uterine contractions and therefore is being used for various obstetrical indications, including prevention and treatment of PPH. It is an evidence based, effective uterotonic. Its use for management of PPH is supported by WHO and international professional organizations of obstetricians and midwives (FIGO and ICM).

11.1 Advantages of Misoprostol

- ♣ Heat-stable and easy to store
- ♣ Low-cost
- ♣ Tablet form. Does not require IV/IM administration.

11.2 Dose and route for Prevention and Treatment of PPH

Purpose	Dose	Route
Prevention of PPH	600 mcg (3 tablets of 200 mcg)	Oral: To be swallowed with liquid
Treatment of PPH	800 mcg (4 tablets of 200 mcg)	Sublingual: Placed under the tongue

11.3 Using Misoprostol and other uterotonics together does not offer any benefit for treating PPH and can result in more side effects.

11.4 Side effects of Misoprostol

Shivering

- This is a temporary but common side effect. It usually happens within the first hour of taking Misoprostol.

Management: A blanket to cover the woman or a hot drink provides relief.

Fever

- Also temporary, is less common than shivering. Often follows shivering and peaks in 1-2 hours. It goes away within 2-6 hours.

Management: Use of an antipyretic drug like Panadol and cold cloth on the forehead.

NOTE: If fever or shivering continues for 24 hours after use of Misoprostol, it can be a sign of infection or a different health problem. It should receive medical attention.

Nausea and Vomiting

- Nausea and vomiting, also temporary, can last for 2-6 hours after taking Misoprostol. If the woman vomits the tablets, do not give her more tablets.

Management: Anti-emetic medicine, if needed.

Diarrhea

- Diarrhea can occur but should settle down within a day.

Management: Prevent dehydration.

11.5 Contraindication

- Allergy to Prostaglandin

11.6 Availability and Patent Names

Misoprostol is available in Pakistan. It comes under different patent names. Some of these are: S.T.Mom; Cytotec; Cytopan; Arthrotec; Misoclear and Cytologand.

ACTIVE MANAGEMENT OF THIRD STAGE OF LABOUR (AMTSL)

Active Management of third stage of Labour (AMTSL) is still the a best practice for prevention of PPH due to atony. Its main steps are:

- ♣ Palpation of the uterus to rule out presence of another baby.
- ♣ Use of anuterotonic preferably oxytocin, 10 IU, intra muscularly (IM) if not available then3 tablets of Misoprostol orally immediately after the delivery of the baby.
- ♣ Controlled cord traction (CCT) and counter traction of the uterus for delivery of the placenta.
- ♣ If after expulsion of placenta uterus does not contract, do gentle massage of the uterus to help the uterus to contract.
- ♣ Cord clamping should be done 3 minutes after birth.

It is very important to regularly check uterus for two hours postpartum to ensure its contracted status.

Advantages of AMTSL

- ♣ Reduces duration of third stage
- ♣ Decreases blood loss
- ♣ Reduces risk of Postpartum Heamorrhage (PPH)
- ♣ Minimizes the need for referral to EmONC services
- ♣ Decreases the need for blood transfusion

Research and experience have proved that AMTSL can prevent up to 60% of uterine atony.

Preparation for the procedure of Active Management of Third Stage of Labour (AMTSL) to prevent PPH

When second stage of labour starts,

- ♣ Draw up 10 Units of Oxytocin (Syntocinon), in a sterile disposable syringe, put the cover back on the needle and keep it within easy reach, ready for use.

OR

- ♣ Ensure that 3 tablets 200 mcg of Misoprostol are kept at the place of delivery before the baby is born.

Procedure:

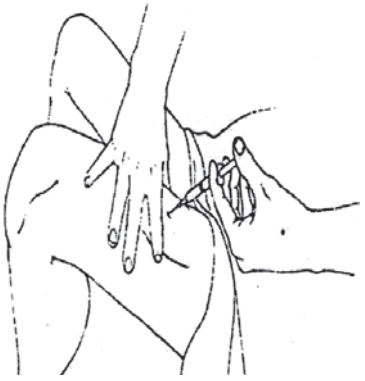
When baby is delivered, palpate the mother's abdomen to rule out presence of another baby (unless multiple pregnancies have already been diagnosed).

Steps of AMTSL

1. Dry and place the baby on the mother's Abdomen without cutting the cord.

Put the baby prone on mother's abdomen

2. Inject 10 units Oxytocin (syntonicon) I/M in anterior aspect of the thigh of the mother or 5 units intravenously if IV line is open. It acts in 2 to 3 minutes.



Give Oxytocin I/M

OR

Give immediately 3 tablets of Misoprostol orally(200mcg each tablet) available as cytotec/STMom/Misoclear etc.

Give 3 tabs of misoprostol

3. Keep the baby warm.
   Cover the mother and the infant with a dry, warm cloth or towel to prevent heat loss.

Keep the baby in skin to skin contact with mother

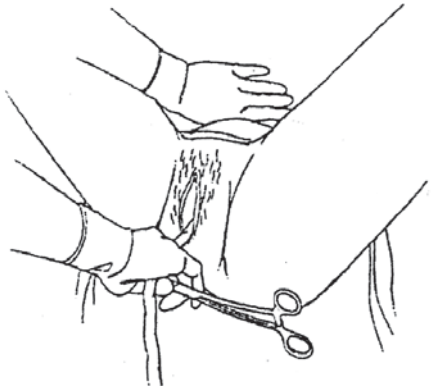
4. Cut the cord after 1 to 3 minutes or when pulsation stops.
   If the baby needs resuscitation then tie and cut the cord immediately and give the baby to a trained helper.

Clamping the umbilical cord near the perineum

Delaying cord clamping allows for transfer of red blood cells from the placenta to the baby that can decrease the incidence of anemia during infancy.

5. Perform controlled cord traction and counter traction of the uterus

- ♣ Clamp the cord close to the perineum and, hold the clamp from both the sides with cord in the middle for aiding control.
- ♣ Keep slight tension on the cord and wait for a strong uterine contraction.
- ♣ When uterus contracts, place the other hand just above the woman's pubic bone and stabilize the uterus by applying counter traction (i.e. push the uterus upwards towards the woman's chest) to prevent uterine inversion.
- ♣ When the uterus becomes hard and round or the cord lengthens, gently pull downwards on the cord to deliver the placenta. If the cord is now long enough, wrap the cord around the clamp and apply gentle traction to the cord.
- ♣ Continue to apply counter traction to the contracted uterus.
- ♣ If the placenta does not descend within 30-40 seconds, STOP pulling on the cord.Just keep a gentle hold on the cord and wait for the uterus to contract.
- ♣ With the next contraction repeat controlled cord traction with counter traction on the uterus as above.



Controlled contraction and counter traction of the uterus (CCT)

Ensure that the uterus is well contracted before applying cord traction, and counter traction above the pubic bone.

♣ Safe practice of controlled cord traction requires prior practical hands on learning.

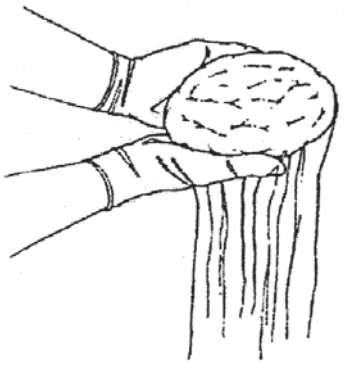
6. Massage the uterusgently if soft after delivery of the placenta and membranes.

Massage the uterus if soft

Continue to provide support and reassurance to the woman throughout the procedure.

7. Examine the placenta and the membranes for completeness.

- ♣ Hold the placenta in the palms of the hands with the maternal side facing upward and make sure that all lobules are present and fit together.
- ♣ Hold the cord with one hand, allowing the placenta and membranes to hang down. Place the other hand inside membranes, spreading your fingers to ensure that membranesare complete
- ♣ Dispose the placenta.



Examine the maternal side

Checking the membranes

If any piece of placenta or membranes is left inside it is an EMERGENCY and the woman must be referred immediately.

8. Examine lower vaginal wall and perineum.

- ♣ Gently separate the labia and inspect the lower Vagina and perineum for lacerations that may need to be repaired to prevent further blood loss.
- ♣ Repair lacerations or episiotomy.
- ♣ Gently cleanse the vulva, perineum, buttocks, and back with warm water and a clean compress.
- ♣ Apply a clean pad or cloth to the valve.
- ♣ Evaluate blood loss.
- ♣ Explain all examination findings to the women and, if she desires, to her family.

Gently inspect the lower vagina and perineum for lacerations.

9. Initiate breast feeding within one hour if they are ready and woman has chosen to breast feed.

Encourage breast feeding

10. Monitor the mother and newborn every 15 minutes for 2 hours.

In the absence of uterotonics drugs

- ♣ Watch for signs for placental separation:
  - Lengthening of cord
  - Sudden gush of blood
  - Uterus becomes hard and round
- ♣ Do not use cord traction
- ♣ Encourage mother to bear down when uterus is contracted
- ♣ Apply gentle massage if uterus is soft

Care of Mother:

- ♣ Palpate the uterus to check for firmness.
- ♣ Massage if soft (ask the woman to call for help if bleeding increases or her uterus gets soft).
- ♣ Check for excessive vaginal bleeding.
- ♣ Take action to evaluate and treat PPH immediately if excessive bleeding is detected.
- ♣ Ensure the uterus does not become soft after massage.
- ♣ Encourage the woman to eat and drink.
- ♣ Ask the companion to stay with the woman.
- ♣ Encourage the woman to pass urine.
- ♣ Inform the woman about danger signs and when she should call for help.

Monitor mother and baby every 15 minutes

Care of Baby:

- ♣ Check the baby's breathing.
- ♣ Check the baby's color.
- ♣ Check warmth by feelings the baby's feet.
- ♣ Check the cord for bleeding.
- ♣ Take immediate action if a problem is detected.