

General Practice

**Active management of third stage
of labor decreases PPH**

Active management of Third Stage of Labor

- Administering a uterus-contracting drug, e.g. Oxytocin, Misoprostol within one minute of birth
- Applying controlled cord traction & counter traction to the uterus
- Massaging the fundus of the uterus through the abdomen
- Monitoring for further signs of bleeding

Active Vs Expectant Management

Management of Third Stage of Labor	Blood Loss * > 500 mls	Blood loss * > 1000 mls
Expectant (n=3126)	13.6%	2.6%
Active (n=3158)**	5.2%	1.7%

* Clinical estimation generally thought to be underestimates by about 34-50%

**Oxytocin, Ergometrine or both IM/IV

Management of PPH

First line of Therapy

Uterotonic agents

- ✓ Oxytocin
- ✓ Ergot-alkaloids (Ergometrine, Methyl Ergonovine)
- ✓ Prostaglandins (Dinoprostone, Misoprostol)

Second Line of Therapy

- ✓ Surgical Interventions e.g. artery ligation
- ✓ Radiological embolisation
- ✓ Haemostatic drugs e.g. Tranexamic acid

Oxytocin

- Oxytocin is a synthetic form of the nanopeptide produced in the posterior pituitary.
- It stimulates the (upper) active segment of the myometrium to contract rhythmically, which constricts spiral arteries & decreases blood flow through the uterus.
- Clinical response is rapid & occurs within 3 to 5 minutes.
- Oxytocin is dosed at 10 to 40 U/L .
- Side effects are very rare, but occasional causes nausea & vomiting.
- The only serious side effect is dilutional hyponatremia, which may happen with prolonged use.
- Rapid IV infusion is associated with hypotension & tachycardia.

Carboprost

- It is synthetic prostaglandin analogue of PGF₂α which enhance uterine contractility and cause vasoconstriction
- IM dosing, initial: 250 mcg; if needed, may repeat at 15- to 90-minute intervals; maximum total dose, 2 mg (8 doses).
- In 75% of cases, a successful clinical response is reached within 30 min.
- Clinical response may be enhanced with concomitant use of oxytocin.
- The reported side effects include nausea, vomiting, diarrhea, bronchospasm, & hypertension.
- The recommendation is that the drug be given with caution to patients with hepatic or cardiovascular disease, asthma, or hypersensitivity to the drug.

Methylergonovine Maleate

- It is a semisynthetic ergot alkaloid.
- It causes generalized smooth-muscle contraction in which the upper and lower segments of the uterus contract tetanically.
- It is available as 0.2mg tablets & is used 0.2mg 3 to 4 times/day in the puerperium for 2 to 7 days.
- Onset of action (tablet) is within 5 to 10 minutes
- Onset of the IM dose is 2 to 5 minutes
- Side effects are very rare, but occasional causes nausea & vomiting.
- This drug should be used with extreme caution in patients with hypertension or preeclampsia, especially if ephedrine (a vasoconstrictive agent) is already given.

Misoprostol

- Synthetic prostaglandin E1 analogue
- Initially developed for oral use
- Other routes of administration
Sub-lingual, Rectal, vaginal & Buccal

- **India**
- **Bangladesh**
- **Nepal**
- **Russia**
- **Uganda**

Approved for PPH

-- Countries --

- **Nigeria**
- **Ethiopia**
- **Somalia**
- **Ghana**
- **Kenya**

Misoprostol - - - FIGO



1st Trimester

**Cervical ripening
pre-instrumentation**
400µg pv 3hrs
before procedure

Induced abortion¹
800µg pv 1.2 hrly
(max x3)

Missed abortion
800µg pv 3 hrly (max x2)
OR 600µg sl (max x2)

Incomplete abortion^{2,3}
600µg po single dose

2nd Trimester

**Induced abortion^{1,4}:
interruption of
pregnancy**
400µg pv 3 hrly (max x5)

**Intrauterine fetal death⁴
(13-17 wks)**
200µg pv 6 hrly (max x4)
(18-26 wks)
100µg pv 6 hrly (max x4)

Postpartum

3rd Trimester

**Intrauterine fetal death⁵
(27-43 wks)**
25-50µg pv 4 hrly
(max x6)

Induction of labour^{2,5}
25µg pv 4 hrly (max x6)
OR
20µg po 2 hrly (max x12)

PPH prophylaxis⁶
600µg po single dose.

PPH treatment⁶
600µg po single dose

Check for updates at www.figo.org and www.misoprostol.org

Misoprostol Advantages

- ✓ Thermostable
- ✓ Affordable uterotonic agent compared with other
- ✓ Ease of administration
- ✓ Useful in poor resource sources – skilled workers

- Standard management[#] with 600mcg Misoprostol lowered maternal mortality by 81%.^{**}
- Oral Misoprostol was associated with significant ↓ in the rate of acute PPH and mean blood loss. ^{***}

[#]Standard management defined as delivery attendance by a village health worker without administration of medication.

**Int Congr Series 1279 (2005) 358–363*

***Int J Gynaecol Obstet. 2010 Mar;108(3) 289-94.*

****Lancet.2006;368(9543):1248-53*

Clinical Guidance



World Health Organization

The WHO recommends the use of Misoprostol in settings where it is not possible to use Oxytocin or another injectable uterotonic such as Ergometrine or an Oxytocin and Ergometrine fixed-dose combination.

In the absence of personnel to offer active management of the 3rd stage of labour, it is recommended that the trained health worker should offer Misoprostol 600mcg orally immediately after the birth of the baby.

- **Current data supports the use of Misoprostol in PPH.**
- **Safe & Effective treatment option in management of PPH.**
- **Oxytocin is a gold standard treatment in PPH.**
- **Increasing clinical evidences suggest Misoprostol as an alternative to Oxytocin.**

How should secondary PPH be treated?

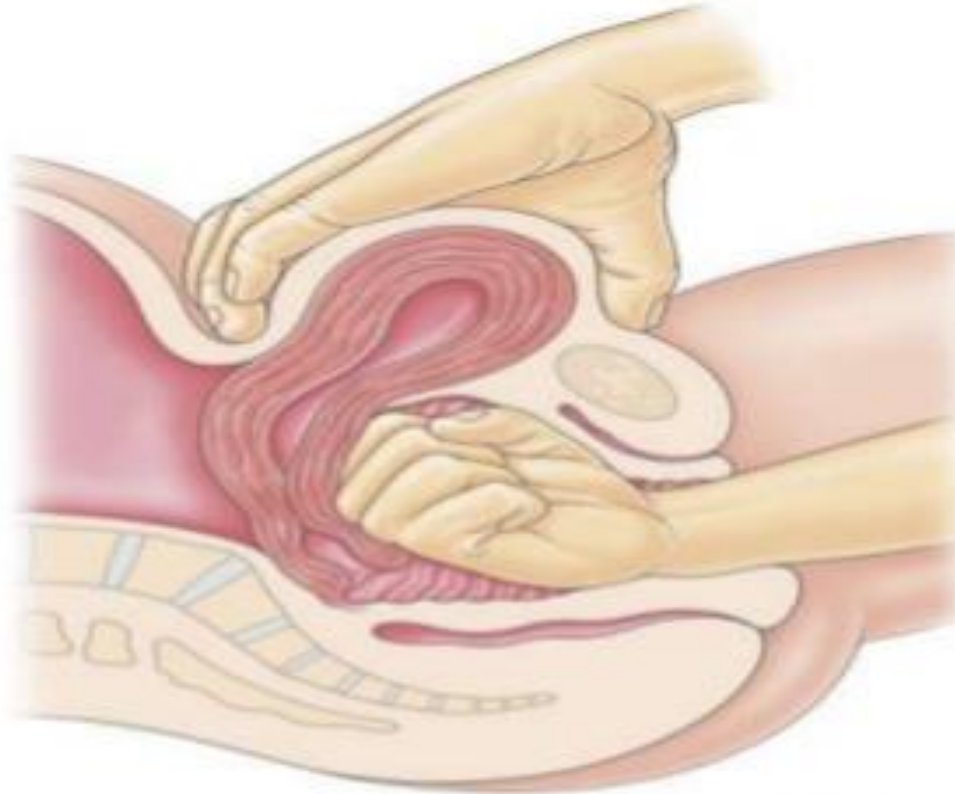
- ✓ Secondary PPH is often associated with endometritis. When antibiotics are clinically indicated, a combination of Ampicillin (Clindamycin if penicillin allergic) & Metronidazole is appropriate.
- ✓ In cases of endomyometritis (tender uterus) or overt sepsis, then the addition of Gentamicin is recommended.
- ✓ Surgical measures should be undertaken if there is excessive or continuing bleeding, irrespective of ultrasound findings.
- ✓ A senior obstetrician should be involved in decisions & performance of any evacuation of retained products of conception as these women are carrying a high risk for uterine perforation.

How should secondary PPH be treated?

- ✓ It is generally accepted that secondary PPH is often associated with infection & conventional treatment involves antibiotics & uterotonics.
- ✓ In continuing haemorrhage, insertion of balloon catheter may be effective.
- ✓ A combination of Clindamycin & Gentamicin is appropriate; for Gentamicin, daily dosing regimens are at least as effective as thrice daily regimens; once uncomplicated endometritis has clinically improved with intravenous therapy, there is no additional benefit from extended oral therapy.
- ✓ This antibiotic therapy does not contraindicate breastfeeding.

Interventional Therapies

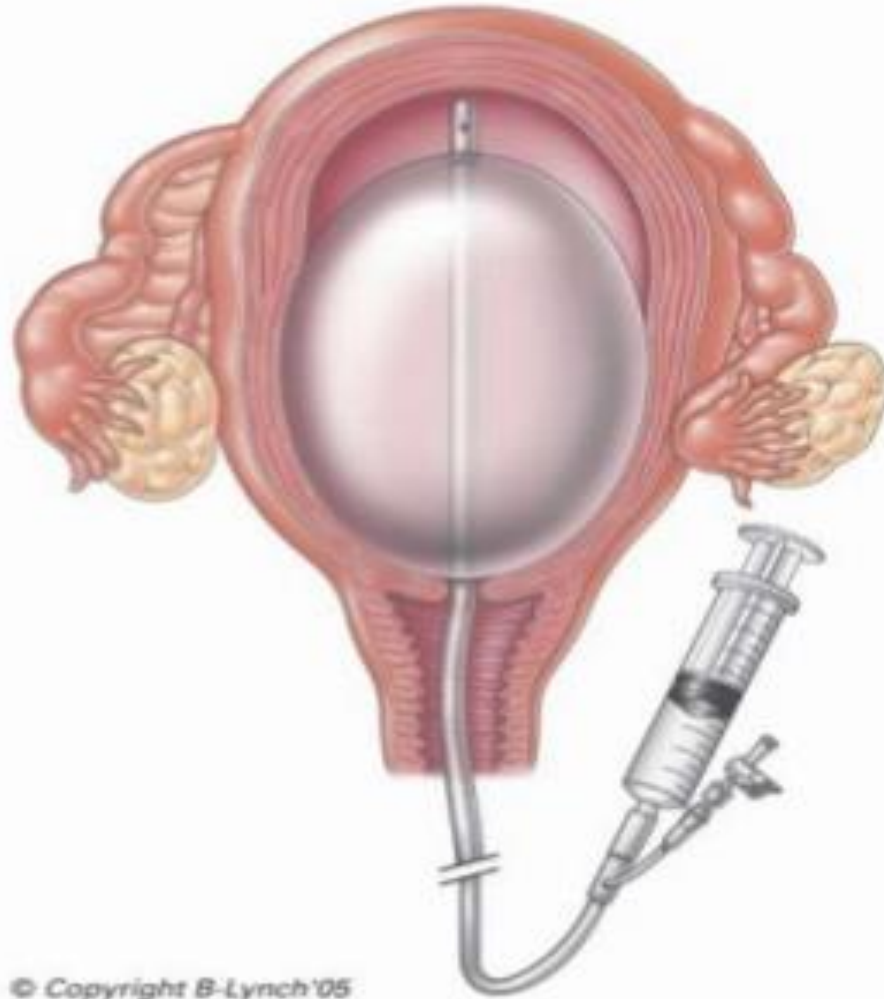
Bimanual Compression



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Figure 1 Illustration showing bi-manual compression of the uterus.

Internal Uterine Tamponade



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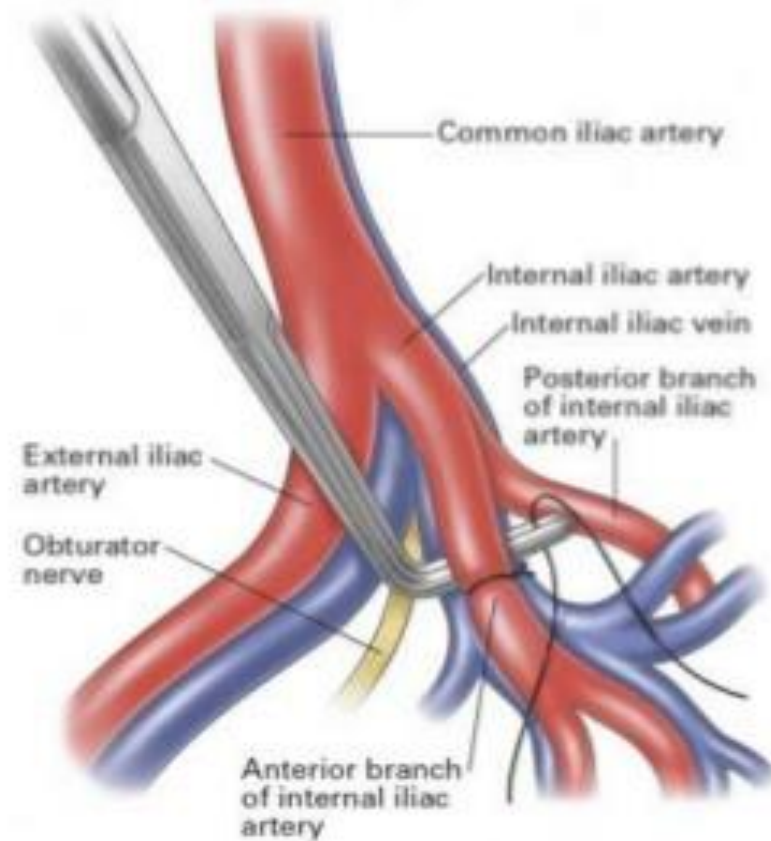
Figure 1 Inflated Bakri Balloon max capacity 500mls.

Non-Inflatable Anti-Shock Garment



Surgical Interventions

Hypogastric Artery Ligation



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Figure 1 Demonstrates ligation of the anterior branch of the internal iliac artery with its associated vein, in a vulnerable position.

Pelvic Packing

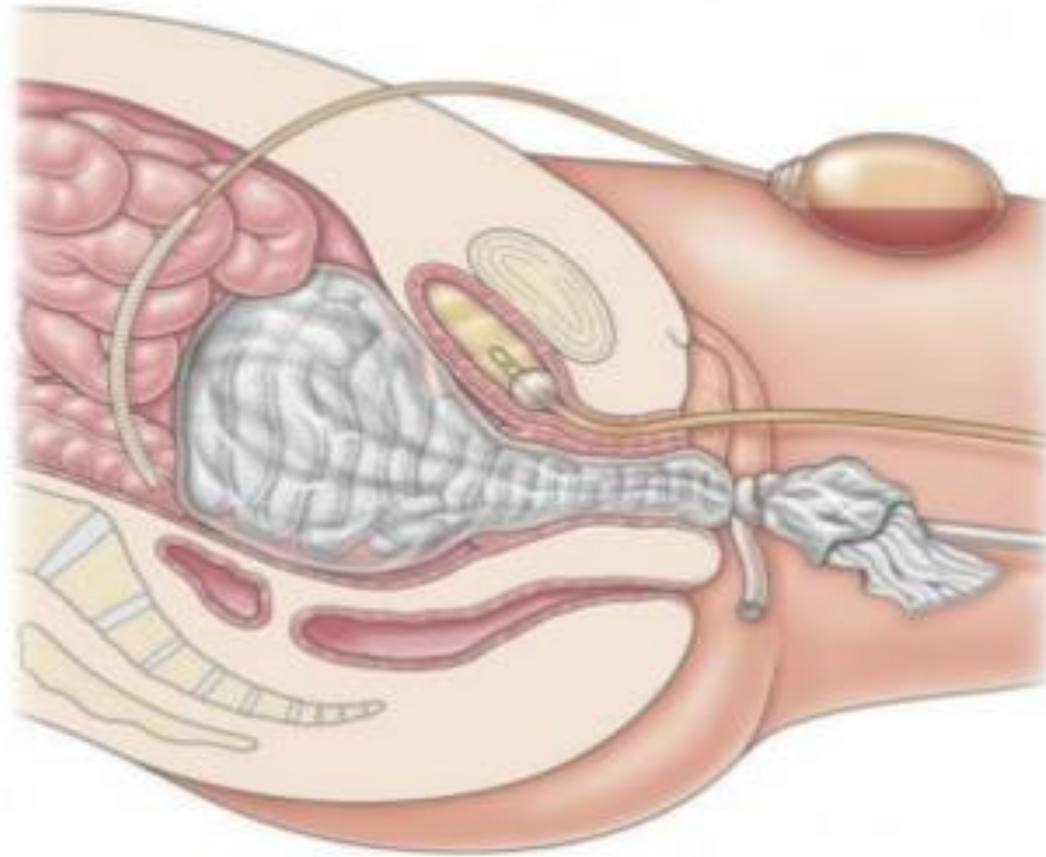


Figure 1 Diagram of the pelvic pressure pack *in situ*.

Embolisation



Figure 2d Left internal iliac arteriography in the left anterior oblique position (LAO).

Recommendations for All Hospitals

- **Use the BRASS drape in all deliveries**
- **Perform PPH drills on all shifts with each new group of interns, residents and nurses**
- **Place large posters of B-Lynch brace suture technique on wall of each OR**
- **Develop SWAT team approach with bleeding >1000cc on responsive to simple therapy**

Save mother's lives



**Thank You for your
patience !!!**

