Chapter 9
EMERGENCY OBSTETRIC CARE

Learning Objective:

- To provide knowledge and skills and the management of acute obstetrics emergencies so that will enable health care providers to recognize emergencies and how to respond to them.

INTRODUCTION

A lack of skilled obstetric care in the developing nations is responsible for the high maternal mortality rates. Reducing maternal mortality rate (MMR) is one of the priorities spelled out in the Sustainable Development Goals. Therefore, emergency obstetric care is fundamental to reducing maternal morbidity and mortality.

MANAGEMENT OF MISCARRIAGE OR POST MISCARRIAGE CARE

Bleeding in early pregnancy may be caused by miscarriage, gestational trophoblastic disease (GTD), ectopic pregnancy, low lying placenta and injuries. Among all, miscarriage, spontaneous or induced, is the commonest cause of bleeding.

Definition of miscarriage: Death and expulsion of fetus from uterus before 22-24 weeks be it spontaneous or induced. Complications of miscarriage, whether spontaneous or induced, can cause maternal deaths unless timely and properly managed. Where miscarriage is illegal or safe abortions are not available, women resort to unsafe methods.

Types of miscarriage:

1. Threatened (bleeding slight, no pain, os closed, fetus alive)
2. Inevitable (more bleeding and pain, os open and pregnancy may/may not be viable)
3. Complete (all expelled)
4. Incomplete (some parts retained). Women with incomplete abortions are at risk of dying due to either bleeding or infection unless appropriately managed.
5. Induced (medical/surgical)
6. Legal/illegal
7. Septic
8. Habitual
9. Missed (dead pregnancy is retained)

A woman with miscarriage may present with acute complications like severe bleeding, shock, injury (especially if induced), and sepsis.

Diagnosis of Miscarriage:

- ✓ History of amenorrhea followed by bleeding and or pain or there may be history of interference with pregnancy.
- ✓ Speculum examination may reveal bleeding, trauma, foreign bodies or products of conception (POC) coming out of os. Remove it with sponge forceps and bleeding will stop/decrease.
- ✓ Bimanual examination may reveal bulky soft uterus with os open or closed, with bleeding or discharge.
- ✓ Ultrasound can differentiate between various stages of miscarriage. May also reveal signs of peritonitis (tubo-ovarian mass/free fluid).
- ✓ Do a CBC, grouping and cross match with donors.

Management:

1. Threatened: Conservative
2. Inevitable: Evacuate if active bleeding A single dose of 600 micrograms orally or 400 micrograms sublingual can be used as an alternative to surgical evacuation.

3. Incomplete: Give antibiotics and do evacuation. When os is open, you can evacuate under sedation like Inj. Pethidine. Ideally, manual vacuum aspiration (MVA) must be done where available. Admit and give IV antibiotics if febrile. Rule out peritonitis/septicemia etc.
4. Induced abortion: Manage according to complications (bleeding, injury, incomplete or septic) and refer and transfer.
5. Habitual: Refer to OBGYN.
6. Missed miscarriage: Refer to OBGYN.
7. Septic miscarriage: Resuscitate and refer to higher level.

MANAGEMENT OF SPECIFIC COMPLICATIONS

Incomplete miscarriage

- ✓ Manage shock, evacuate by MVA or instruments and examine POC.
- ✓ Repair genital tract injuries and manage uterine perforations or refer.
- ✓ Give antibiotics.

Septic miscarriage

- ✓ Signs and symptoms: Distension of abdomen with decreased/absent bowel sounds. Abdomen may be tense or hard with rebound tenderness. There may be nausea and vomiting, fever, shoulder pain. Patient complains of abdominal pain/cramping.
- ✓ **Management**
  - IV fluids, O2 inhalation, IV antibiotics, Inj. TT
  - Evacuation if incomplete
  - Refer and transfer

Hemorrhage

Manage shock. Identify bleeding site, and do evacuation if inevitable, active or incomplete, and repair injuries if any (induced miscarriage). Refer if necessary.

Intraabdominal injuries

Manage shock and stabilize. Do laparotomy or refer.

Eclampsia

Definition: Convulsions in a pregnant woman after 20 weeks or in a woman in labor or in postpartum within 48 hours, must be treated as eclampsia until proved otherwise.

Signs and symptom: Convulsions, DBP>90mmHg (sometimes DBP may be just normal), Proteinuria 2+ or more, coma.

Effect on mother: Asphyxia, aspiration, pulmonary edema, heart failure, hemorrhage or thrombosis and edema in brain, acute renal failure, HELLP (hemolysis, elevated liver enzymes and low platelets) syndrome, injuries, temporary blindness.

Effect on fetus: There is decreased materno-placental blood flow leading to hypoxia, IUGR (chronic hypoxia) and IUFD (prolonged hypoxia in utero).

Priorities:

- Call for help, prevent injuries, put on left lateral position and give oxygen.
- Keep patient in a quiet place and Start Inj. magnesium sulphate (annexure1) and IV Hydralazine should be considered if DBP rises above 110mmHg.
- Open IV line.
- Monitor BP, pulse, respiratory rate.
- Check consciousness.

- Keep indwelling catheter and note input/output.
- See fetal heart hourly (CTG if available).
- Stabilize and refer/transfer.

Investigations:

- CBC, LFT, RFT, LDH
- Coagulation profile
- Urine R/E

Delivery: Patients with severe preeclampsia must deliver within 24 hrs. and those with eclampsia must deliver within 12 hrs. Mode of delivery will depend on obstetric factors.

Postpartum:

- Observe in same room for 48 hrs. Continue anticonvulsant and antihypertensive. Note input/output chart.
- Turn patient 2 hourly. Observe till BP settles or no more fits for more than 24 hrs.

MgSO4: It must be given as per protocol (keep on the wall). Always watch respiratory rate, patellar reflexes and urine output. If there are signs of toxicity, give Calcium gluconate slowly IV over 10 minutes. (MgSO4 loading dose must be given to all patients with severe or symptomatic preeclampsia/HELLP before referring to higher level).

Antihypertensive: Hydralazine is the drug of choice. Give 5 mg IV every 5 minutes or 12.5 mg IM every 2 hrs. till BP is settled (or in drip inj. HYDRALYZINE: 40 mg in 500 ml N/Saline: start at 10drops/min and double every 15 min until satisfactory response (DBP 90mmHg to 100 mm Hg) or side effects tachycardia (>120 / min) or side effects (headache, flushing, dizziness). There may be fetal distress due to sudden fall in BP. Side-effects of Hydralazine are nausea, vomiting, headache, postural hypotension and tremors.

Six steps in eclampsia:

1. Ensure airway and breathing
2. Control/prevent further fits
3. Control BP
4. Input/output chart
5. Deliver baby
6. Identify complications

Prevention of eclampsia:

By recognizing and giving appropriate and timely treatment to women with severe pre-eclampsia, you can prevent eclampsia, which carries a high risk of mortality for both mother and baby.

MANAGEMENT OF OBSTRUCTED/PROLONGED LABOR

Definition: When there is no descent of fetus and dilatation of cervix despite having strong contractions. Cause may be due to CPD (small/abnormal pelvis or large baby or abnormal presentation). When a prolonged labor is not recognized (partograph not used), obstructed labor is the result. Obstructed labor can cause

maternal deaths by sepsis, PPH and ruptured uterus. Those that survive may have to live with obstetric fistula.

Types of prolonged labor:

a. **Prolonged latent phase:** Standard duration of the latent first stage has not been established and can vary widely from one woman to another.
b. **Prolonged first stage:** When dilatation between 5 to 10 cm takes more than 12hrs in first labour and more than 10 hrs. in subsequent labour.
c. **Prolonged second stage:** Expulsive phase > 3hrs in primigravida and >2hr in multigravida.

Risks of prolonged labour:

- Maternal distress and fetal distress
- Infection due to repeated PVE/prolonged PROM
- Obstructed labor and its complications
- Increased intervention (vacuum/cesarean section)

Effect of prolonged labor in fetus:

There is excessive moulding, caput formation, cerebral hemorrhage, birth asphyxia and still birth.

Causes of prolonged labor:

- CPD (abnormal or small pelvis as in rickets or short statured mothers or large baby)
- Malpresentations
- Fetal anomalies (like locked twins, hydrocephalus)
- Abnormalities of reproductive tract like pelvic tumor, stenosis of cervix or vagina, tight perineum
- Perineal scarring (like genital mutilation done in some African tribes)

Management:

- See partograph and length of labor
- Do abdominal examination (head may not be engaged, uterus may be in tonic contraction or there may be no contractions, there may be Bandel's ring or signs of rupture, abnormal/no fetal heart.
- Vaginal examination reveals foul smelling liquor/meconium, edematous vulva and cervix. Cervix not dilated/fully dilated. There may be caput/excessive molding or abnormal presentation like face, brow or shoulder.
- Resuscitate patient with IV fluids, start IV antibiotics and give Oxygen.
- If cervix fully dilated and head not felt abdominally, give episiotomy and deliver with vacuum.
- If fetus is dead, refer.
- All others will need urgent referral for cesarean section to the nearest EmNOC Center.

Prevention of obstructed labor:

- Recognize CPD (large baby, abnormal pelvis, short stature of mother etc.).
- Recognize and refer abnormal lies and presentations before the women go into labor.
- Use partographs in all women in labor.
- If first stage prolonged, augment with oxytocin if inadequate contraction. If no progress, refer.

- If second stage prolonged, refer if fetal head mostly above pelvis. Deliver with episiotomy and vacuum if fetal head fully engaged.

Partograph: Recording of observations made on a woman in labour and making a graphic record of cervical dilatation. This helps to recognize abnormal labor early. Partograph must be used on all women in labour and it must be sent with women when referred. All women referred must be accompanied by a health worker with delivery and resuscitation sets.

POSTPARTUM HEMORRHAGE

It is the most common cause of maternal deaths in the developing world, as is the case in Bhutan.

Physiology of stage III labor

Contraction and retraction of myometrium leads to decrease in placental site leading to placental separation and clot formation behind it. Clot collection leads to further separation of placenta.

Types of separation

- Schultz method (like umbrella). This happens in fundal placentas.
- Duncan Mathews method (like button). Lower segment placentas (> blood loss)

Bleeding from uterus can be 500-800 ml/minute and a woman can die in minutes if not stopped.

Mechanism of stopping the bleeding

Contraction of muscles that crisscross and shut down blood vessels along with clot formation helps to stop bleeding from placental site insertion. Anything that interferes with contraction will cause PPH. Examples are full bladder, retention of placental pieces or membranes. Always ensure empty bladder and check for completeness of placenta when there is PPH.

Prevention of PPH is by active management of III stage labor. Give Syntocinon 10 IU IM on delivery of baby and do controlled cord traction (CCT).

(Action of Syntocinon: 2 and ½ minutes if given by IM route. Methergine takes 6-7 minutes by IM and 45 seconds by IV route).

Primary PPH:

Blood loss > 500 ml of bleeding within 24 hrs. of delivery.

Cause may be:

Retention of placenta (not delivered within 30 minutes)

1. Atonic uterus
   - Due to over-distension (high parity, twins, polyhydramnios, large baby, fibroids)
   - Prolonged labor.
   - Retention of placenta/placental pieces or membranes
   - Full bladder
   - Traumatic tears in perineum, vaginal wall, cervix or uterus
2. Traumatic bleeding
3. Coagulopathy (rare)
4. Inversion of uterus (rare)

Management of Primary PPH

- Estimated Blood Loss > 500ml in Vaginal Delivery and >1000 ml in Cesarean Delivery with normal vital sign and lab values.
- Call for help**.**
- Record Vital signs with time q 15 min x 1 hr., thereafter as patient's condition dictates (Pulse, Blood pressure, Breathing, Temperature and SPO_2 (If SPO_2 <95 % give Oxygen)**.**
- Open IV line (16 or 18 G Cannula)**.**
- Send blood for CBC, Grouping and Cross matching 2 units PRC
- Start Infusion of 1000ml Crystalloid IV fluid (RL or NS) or increase the infusion rate, if already on IV therapy,
- Fundal Massage.
- Start or increase additional uterotonics: Record time
  - 10-40IU of Oxytocin infusion in 500 -1000ml RL
  - Ergometrine 0.2mg IM q 2 -4 hours maximum 1 mg=5 doses (Contraindicated in HTN and Heart Disease)
  - Carboprost (15- methyl PGF2 α) 250 microgram q 15 min x maximum 8 doses (contraindicated in Bronchial asthma)
  - Misoprostol800-1000 micrograms PR, 600 micrograms PO or 800 micrograms SL.
- **Consider Tranexamic acid if no contraindication (**1 g slow IV over 10 min within 3 hours of onset of PPH, second dose may be repeated after 30 min.).
- Insert indwelling urinary catheter (Foleys): Monitor urine output and fluid balance. Record time
- Adjust Bed: Must lie flat: head bed down.
- Attach automated monitor and saturation (if available).
- Look and identify the cause and treat: **TONE/ TRAUMA/TISSUE/THROMBUS)**
- If uterine atony: **Uterine massage.**
- If bleeding continues: Open 2nd intravenous line 16 or 18 G Needle. Run total fluid (RL or NS) may give upto3 L, avoid over load in Heart disease.
- Check if placenta expelled completely:
- If PPH **with retained placenta,**
- Assess condition of patient, give Oxytocin 10 IU IM, start IV RL, empty bladder and do CCT. If not delivered, give Oxytocin 20 IU in NS at 40 dpm. If not delivered, do MRP or refer.
- **Repair any tear** and other trauma to genital tract (e.g. Perineal tear, cervical tear or Episiotomy), if any.
- If still the bleeding continues: you may perform one of the following mechanical methods you prepare for referral.
  a) **Perform Bi manual compression**
  b) **Perform Aortic compression**
  c) **Perform Condom Tamponade**

Secondary PPH:

May be due to retention of placental tissues or infections.

Management of Secondary PPH

Same as above plus IV antibiotics (Ampicillin, Gentamycin and MTZ).

PUERPERAL SEPSIS

It contributes to 15% of maternal mortality worldwide and one of the common cause maternal deaths in Bhutan. And it causes PID and secondary infertility in survivors.

Sites of infection:

Infection may start at placental site, abdominal and perineal wounds following surgery and lacerations in genital tract.

Sign and symptoms:

Fever/chills with lower abdominal pain. May have tender or sub involuted uterus and purulent/foul smelling lochia.

Risk factors:

- Frequent vaginal examinations in labor, PROM, prolonged labor, traumatic delivery, cesarean delivery and any retained products.
- Other contributing factors are poor hygiene and poor infection control practice, anemia, malnutrition, pre-existing STI, DM.

Spread of infection: Infection will start in placental insertion site (because of big vessels, bacteria invade and there is easy access via genital tract to both endogenous and exogenous bacteria). If patient is weak, infection spreads to parametrium, pelvic peritoneum and to distant organs. If severe, there will be septic shock and coagulation failure.

Presentation:

Localized (metritis, salpingitis, Para metritis), generalized peritonitis, septic thrombophlebitis, Abscesses (TO, broad ligament, POD, abdomen, septicemia or septic shock).

Investigations:

- Mid-stream urine for CS.
- HVS for CS.
- Wound swabs from abdomen/perineum.
- Blood culture. (Also look for other sources of infection like mastitis, UTI, pneumonia, DVT, malaria, etc.)

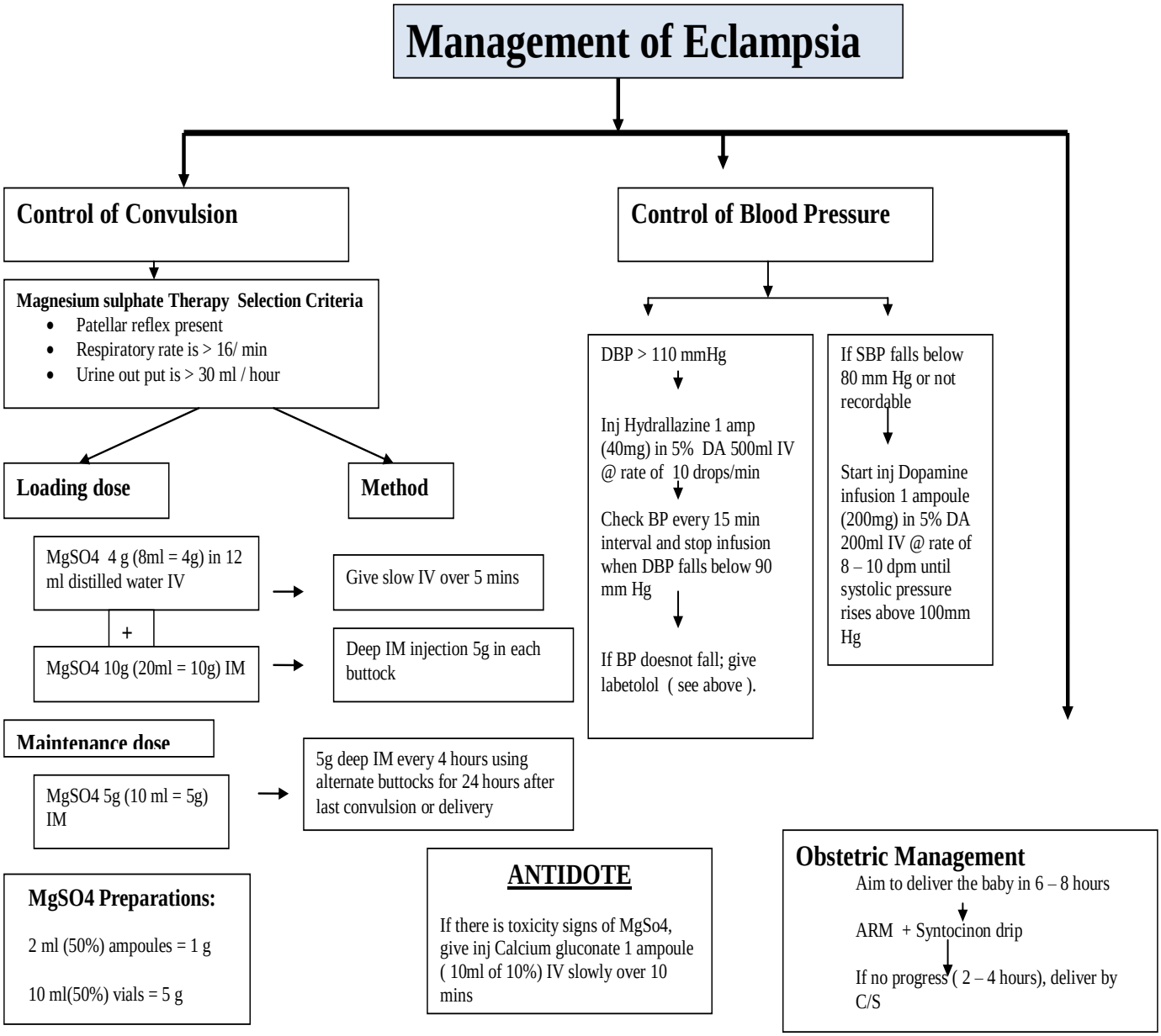
Management:

- Start IV fluids and IV antibiotics (Ampicillin 2 g IV q.i.d., Gentamycin 5mg/kg BW, MTZ 500 mg IV t.i.d.). If fever not settled within 72 hrs., change.
- Ultrasound for retained products, free fluid in abdomen, TO abscess.
- If retained products, evacuate.
- If peritonitis, keep NPO and do NG tube suction.
- If abscesses, wound infection, septicemia etc., refer and transfer.
- When fever free, give oral antibiotics.

Prevention:

- Give IV antibiotics to all cases of PROM if not delivered within 18 hrs.
- Avoid repeated PVE in labor. Maintain high standard of vulval and perineal cleanliness during labor and after delivery.
- Avoid trauma to lower genital tract during delivery.
- Judicious infection control practices and limited visitors to labor room are other measures to prevent infection.

Hypertensive CRISIS Management	HYDRALYZINE: 40 mg in 500 ml N/Saline: start at 10drops/min and double every 15 min until satisfactory response (DBP 90mmHg to 100 mm Hg) or side effects tachycardia (>120 / min) or side effects (headache, flushing, dizziness) in which case change to Labetalol.
	LABETALOL: 200 mg in 40 ml N/Saline: start at 40 mg/h and double every 30 min until satisfactory response or reach 160 mg/h (use



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