BACKGROUND/RATIONALE

Hypertension is the most common medical problem encountered in pregnancy. It is a leading cause of perinatal and maternal morbidity and mortality and pregnant women with hypertension are more likely to develop placental abruption, disseminated intravascular coagulation (DIC), cerebral haemorrhage, hepatic failure and acute renal failure. Eclampsia is a potentially serious complication of pregnancy and constitutes a medical emergency.

DESIRED OUTCOME/OBJECTIVE

- Prompt detection and treatment of eclampsia and prevention of further seizures to reduce maternal and perinatal morbidity and mortality

DEFINITIONS

**Eclampsia**: is defined as one or more seizures in association with pre-eclampsia. Seizures may occur antepartum (greater than 20 weeks gestation), intrapartum or in the postpartum period. Eclampsia presents as a tonic clonic seizure(s), with jerking limb and head movements. Most seizures are self-limiting and usually resolve within 90 seconds. The experience can be distressing for the woman, her support person(s) and the staff involved.

INDICATIONS

Impending eclampsia may be asymptomatic. Initial features may be non-specific and mild and may include:

- Persistent, severe frontal or occipital headache
- Visual disturbances (blurred vision/photophobia)
- Right upper quadrant or Epigastric pain, nausea and/or vomiting
- Sudden rise in blood pressure
- Reduced urine output (≤30mLs/2 hours)
- Increasing proteinuria
- Hyper-reflexia and clonus
- Altered level on consciousness
- Restlessness
ISSUES TO CONSIDER

- Magnesium sulphate (MgSO4) is the anticonvulsant drug of choice for the prevention and treatment of eclampsia (refer to DG/M003 MAGNESIUM SULPHATE – Obstetric).

- If the seizure is prolonged or MgSO4 is ineffective Clonazepam IV (1-2 mg, not exceeding 0.5 mg/min) may be given.

- Phenytoin should not be used for Eclampsia prophylaxis or treatment unless there is a contraindication to magnesium sulphate or it is ineffective. Senior consultant input is necessary.

- Calcium Gluconate 2.2 mmol (10 mL) solution must be available whilst Magnesium Sulphate infusion is in progress for the management of overdose and is given via intravenous bolus over 5 minutes.

- Active management of third stage is recommended using 10 units of IM Syntocinon. Ergometrine or Syntometrine may potentially contribute to hypertension and should be avoided however in the event of a postpartum haemorrhage requiring maternal resuscitation Ergometrine will be required as part of the management protocol with resuscitation being the priority.

- Labetalol is the first line drug for management of moderate/severe hypertension whether given orally or intravenously. Hydralazine is available for resistant hypertension or for use in women where Labetalol is contraindicated.

- Fluid loading is important when managing severe hypertension (Labetalol/Hydralazine). 300-500mL of Normal Saline may be administered under the supervision of the senior clinician.

- If rapid drop in blood pressure occurs the woman must be placed in the left lateral position, oxygen given via mask and a fluid bolus administered.

- Continuous CTG monitoring is essential during management of severe hypertension.

EQUIPMENT

- Obstetric emergency trolley
- MET trolley
- IMED pump and giving set
- Monitoring equipment (Sphygmomanometer, CTG)
- Magnesium Sulphate 8g/100mL sodium chloride 0.9% premixed minibags
- Magnesium sulphate vials 2.5g in 5 mL x 2 (rapid IV loading dose by senior clinician only) or for IM dose
- Calcium Gluconate 2.2mmol (=10% solution=1g=1vial), 10 mL syringe and 19g needle

PROCEDURE

Refer to Flow Chart “Management of Eclampsia” Appendix 1

RELATED DOCUMENTS

Internal
- CPG/H015: Hypertension in Pregnancy - Hypertensive Disorders
- CPG/P005: Hypertension in Pregnancy - Pre-eclampsia (PE)
- DG/H002 HYDRALAZINE Intravenous – severe hypertension in pregnancy
REFERENCES


Reg. Authority: Clinical Governance Documentation Working Group
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MANAGEMENT OF ECLAMPSIA

Immediate management
- CALL FOR HELP
  MET call 94444

Following seizure
- Place in left lateral position
- Oxygen 8L via mask
- Gain intravenous access
- Take bloods
- Maternal vital signs
- Assess labour progress (intrapartum)
- Fetal surveillance (FHR, CTG)
- Insert indwelling urinary catheter

Control Seizures
- Loading dose of Magnesium Sulphate (refer to Drug Guideline)
  - 4g magnesium sulphate IV over 15 mins
  - 4g magnesium sulphate rapid load over 5 minutes (senior clinician)
  - Unable to gain IV access 4g MgSO4 IM (2g into each buttock)
- Maintenance dose magnesium sulphate
  - 1-2g per hour IV infusion via pump for 24 hours after birth
  - Obstetric team to review requirement
- If seizures continue or reoccur
  - 2g magnesium sulphate IV over 5 mins (senior clinician)
  - May be repeated after 2 mins
  - If the seizure is prolonged or MgSO4 ineffective Clonazepam IV (1-2 mg, not exceeding 0.5 mg/min) may be given
  - Phenytoin should not be used for Eclampsia prophylaxis or treatment unless there is a contraindication to magnesium sulphate or it is ineffective. Senior consultant input is necessary
- Monitor
  - BP and pulse every 5 mins until stable then every 30 minutes
  - Respiratory rate, oxygen saturation and patellar reflexes after loading dose and then hourly
  - Temperature 2nd hourly
  - Continuous CTG monitoring if gestation ≥ 28 weeks
  - Measure urine output hourly via indwelling urinary catheter
  - Strict fluid balance monitoring
  - Check serum magnesium levels 6 hourly if ordered
    (Therapeutic serum magnesium level 1.7-3.5 mmol/L)

Stop infusion
- Check serum magnesium levels and review management with consultant if
  - Urine output ≤30mls in 2 hours
  - Deep tendon reflexes are absent or
  - Respiratory rate is less than 16/minute

Antidote
- 2.2 mmol (10mls) Calcium Gluconate IV over 5-10 mins

Control Hypertension
- Treat hypertension
  - If systolic BP ≥ 160 mmHg or diastolic BP ≥110 mmHg
  - Aim to reduce BP to 140/90mmHg
  - Avoid maternal hypotension
  - Monitor FHR with continuous CTG
- First Line Management - IV Labetalol (refer to Drug Guideline)
  - 20mg over 2 minutes IV
  - Repeated dose 20mg every 10 minutes (max 300mg) total dose
  - Infusion may be required
  - May require plasma expansion
- Second Line Management - IV Hydralazine (refer to drug guideline)
  - 5 mg IV slowly (suggest 1mg bolus and wait 10-15 mins, if no major drop in BP give remaining 4mg over 4 mins)
  - Repeated doses 5 mg IV 20 minutes apart may be given if required (max 20mg)
  - Infusion may be required (>20mg)
  - May require plasma expansion

Oral Nifedipine
- 10-20 mg tablet, repeat after 45 minutes

Deliver
- Stabilise the mother prior to delivery
- Delivery is a team effort involving obstetricians, midwives, anaesthetists and paediatricians
- Active management of third stage with Syntocinon
- Consider thromboprophylaxis
- Vigilant clinical surveillance postpartum as most Eclamptic seizures occur after delivery
- If Labetalol has been used both the woman and the neonate must be monitored for hypoglycaemia (see Drug Guideline)