

ECLAMPSIA MANAGEMENT

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- Appropriate management of a woman with eclampsia

2. PATIENT

- Woman having an eclamptic seizure

3. STAFF

- Medical, nursing, and midwifery staff

4. EQUIPMENT

- Airway and suction equipment
- Emergency trolley
- Intravenous (IV) access equipment
- Fetal heart rate monitoring equipment
- Eclampsia box

5. CLINICAL PRACTICE

Resuscitation

- Call an adult CODE BLUE 2222
- Place woman on her side and remove all potential hazards
- Allocate another staff member to retrieve eclampsia box
- Ensure patent airway and give oxygen via non-rebreather mask at 15L/min. Non-rebreather mask is in the arrest trolley
- Obtain IV access and collect blood for:
 - electrolytes, urea, and creatinine (EUC)
 - liver function tests (LFT)
 - calcium, magnesium, phosphate (CMP)
 - full blood count (FBC)
 - coagulation profile
 - group and hold
- Insert urinary catheter, with an hourly measure bag, if not already in place
- Prepare and administer magnesium sulphate loading dose as per 'Magnesium Sulphate for Eclampsia or Eclampsia Prophylaxis' LOP
<https://www.seslhd.health.nsw.gov.au/sites/default/files/documents/magsuleclampsia2018.pdf>
- Administer midazolam 2-5mg if seizure is not self-limiting. This may need to be administered prior to magnesium sulphate loading dose, due to the time it takes to prepare and administer magnesium sulphate
- Initiate continuous fetal heart rate monitoring
- Notify obstetric consultant, anaesthetic consultant and obstetric physician if not already present
- Move woman to Acute Care Centre (ACC), Delivery Suite (DS), or Intensive Care Unit (ICU) as appropriate

Prevention of further seizures

- Continue magnesium sulphate infusion and perform the following observations:
 - initial observations, done at '0' hour include:
 - blood pressure (BP)
 - respiration rate (RR)
 - oxygen saturations (SaO²)
 - pulse
 - temperature
 - reflexes

ECLAMPSIA MANAGEMENT cont'd

- hourly BP - cease infusion if < 110/70mmHg
- hourly RR - cease infusion if <10 breaths per minute
- hourly pulse
- hourly tendon reflexes - usually knee reflexes but upper limbs if epidural or spinal anaesthetic in place. Cease infusion if unable to elicit reflexes
- hourly urine output - cease infusion if < 30 mL per hour for three consecutive hours
- measure temperature every four hours.
- Record all observations on Standard Maternity Observation Chart (SMOC)
- Check magnesium level one hour after loading dose and then six hourly thereafter
- Check magnesium level (therapeutic range 1.5-3.5 mmol/L) if there are any signs or symptoms of toxicity:
 - feeling of warmth/flushing
 - diplopia
 - dysarthria/slurred speech
 - loss of tendon reflexes
 - respiratory depression/arrest
 - cardiac arrest/asystole
- Continue infusion for 24 hours following delivery or post last seizure, or as per instructions from obstetric physician or consultant obstetrician
- Perform fetal heart rate monitoring as clinically indicated
- Control hypertension as outlined below
- Continue post-seizure monitoring as indicated by ongoing treatment including:
 - neurological status
 - regular maternal observations
 - cardiac monitoring
- Plan delivery if undelivered

Control of hypertension (if needed)

- Establish control of BP with IV hydralazine or IV labetalol (agent used is usually determined by clinician preference) as indicated by 'Severe and/or Urgent Hypertension in Pregnancy' <https://www.seslhd.health.nsw.gov.au/sites/default/files/documents/SevereandorUrgentHypertension.pdf>
- Aim to lower BP by 10-20 mmHg over 20-40 minutes
- Prepare and administer IV bolus antihypertensive as outlined below:

IV hydralazine

- Administer fluid preload – 250 mL crystalloid
- Administer hydralazine 10 mg over 3-10 minutes
- Repeat 10mg dose after 20 minutes if required
- Record HR and BP every 5 minutes until stable ($\leq 155/95$ mmHg) for 20 minutes, then record BP and HR hourly for 4 hours and then return to usual pre-eclampsia regimen

IV labetalol

- Administer fluid preload – 250 mL crystalloid
- Administer labetalol 20mg as a slow IV bolus over 2 minutes. This must be administered by medical staff only
- Repeat 20mg slow IV bolus every 10 minutes as necessary to a maximum of 4 doses
- Record HR and BP every 5 minutes until stable ($\leq 155/95$ mmHg) for 15 minutes, then record BP and HR hourly for 4 hours and then return to usual pre-eclampsia

ECLAMPSIA MANAGEMENT cont'd

- Prepare and administer IV antihypertensive infusions as per:
 - Hydralazine – Administration of IV Hydralazine LOP
<https://www.seslhd.health.nsw.gov.au/sites/default/files/documents/hydralazine16.pdf>
 - Labetalol – Intravenous Labetalol for Management of Severe/Urgent Hypertension LOP
<https://www.seslhd.health.nsw.gov.au/sites/default/files/documents/labetalolivhyper18.pdf>
- Review oral hypertensive regime in consultation with obstetric physician or obstetric medical team

Delivery

- Ensure woman is medically stable
- Consult anaesthetic team if not already present
- Decide on timing and mode of delivery depending on woman's clinical state and any evidence of fetal compromise. This should be done in consultation with the obstetric medical team responsible for the woman, or obstetric team on-call
- Maintain close fetal monitoring until and during delivery
- Inform the Neonatal Intensive Care Unit (NICU) about the plan for delivery

6. DOCUMENTATION

- Medical record

7. EDUCATIONAL NOTES

- Eclampsia is characterised by the occurrence of one or more seizures in a peripartum woman
- It is a life-threatening obstetric emergency
- Magnesium sulphate has been shown to be more effective than other therapies in the prevention of further seizures
- Serum magnesium levels do not need to be measured routinely unless renal function is compromised.
- Magnesium sulphate is excreted via the kidneys and extreme caution should be used in a woman with oliguria or renal impairment. Serum magnesium levels are indicated in this clinical situation.
- Magnesium sulphate is not universally successful and the recurrence rate of seizures despite appropriate magnesium sulphate therapy is 10-15%
- No reliable clinical markers can predict eclampsia. Hypertension and proteinuria may not be present before the seizure and only some women will have warning symptoms such as visual disturbance, headache or right upper quadrant/epigastric pain.
- Control of severe hypertension to levels below 160/100 mmHg is essential as the threshold for further seizures is lowered after eclampsia, likely in association with vasogenic brain oedema. In addition, the danger of cerebral haemorrhage is real
- The presence of neurological symptoms and/or signs is rarely associated with seizures.
- Seizures may occur antenatally, intrapartum or postnatally, usually within 24 hours of delivery but occasionally later.
- There is no evidence that diazepam is indicated for these women
- There is no role, with currently available treatment, for continuation of pregnancy once eclampsia has occurred, even though many women may appear to be stable after control of the situation has been achieved
- Choose mode of birth for a woman with eclampsia according to the clinical circumstances and the woman's preference
- Do not use volume expansion in a woman with severe pre-eclampsia unless hydralazine is the antenatal antihypertensive
- In a woman with severe pre-eclampsia, limit maintenance fluids to 80 ml/hour unless there are other ongoing fluid losses (for example, haemorrhage)
- All staff should be aware of location of eclampsia box for each clinical area

ECLAMPSIA MANAGEMENT cont'd

8. RELATED POLICIES/ PROCEDURES

- Pre-eclampsia - Intrapartum Care
- Fetal heart rate monitoring MoH GL2018_15
- Magnesium Sulphate for Eclampsia or Eclampsia Prophylaxis
- Hydralazine – Administration of IV Hydralazine
- Labetalol – Intravenous Labetalol for Management of Severe/Urgent Hypertension
- Severe and/or Urgent Hypertension in Pregnancy
- Acute Care Centre (ACC) – Admission criteria, Process, Management and Escalation

9. RISK RATING

- High

10. NATIONAL STANDARD

- Standard 5 – Comprehensive Care

11. REFERENCES

1. The SOMANZ Guidelines for the Management of Hypertensive Disorders of Pregnancy. 2014. Lowe SA, Bowyer L, Lust K, McMahon LP, Morton MR, North RA, Paech M. Said JM
<https://www.somanz.org/documents/HTPregnancyGuidelineJuly2014.pdf>
2. Management of Hypertensive Disorders in Pregnancy. NSW Health Procedure October 2011 PD2011_064. https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2011_064.pdf

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