



# Sir Charles Gairdner Emergency Department Obstetric Guidelines



## Pre-eclampsia

Multisystem disorder with hypertension and involvement of one or more organ systems and/or the fetus.

### Diagnosis of pre-eclampsia is made when:

1. Hypertension arises after 20 weeks gestation
2. Accompanied by one or more of the following signs of organ involvement:
  - Renal involvement
    - Significant proteinuria – a spot urine protein / creatinine ration > 30mg / mmol
    - Serum or plasma creatinine greater than or equal to 90 micromol/L or
    - Oliguria < 80mL / 4 hours
  - Haematological involvement
    - Thrombocytopenia <100,000/ $\mu$ L
    - Haemolysis : schistocytes or red cell fragments on blood film, raised bilirubin, raised lactate dehydrogenase > 600mIU/L, decreased haptoglobin
    - DIC
  - Liver involvement
    - Raised transaminases
    - Severe epigastric or right upper quadrant pain
  - Neurological involvement
    - Convulsions (Eclampsia)
    - Persistent visual disturbances (photopsia, scotomata, cortical blindness, posterior reversible encephalopathy syndrome, retinal vasospasm)
    - Persistent, new headache
    - Stroke
  - Pulmonary oedema
  - Fetal growth restriction (FGR)

### Indications for delivery in women with pre-eclampsia or gestational hypertension:

- Maternal:
  - Gestational age > 37 weeks
  - Inability to control HTN
  - Deteriorating platelet count / liver function / renal function
  - Placental abruption
  - Persistent neurological symptoms
  - Eclampsia
  - Persistent epigastric pain, nausea or vomiting with abnormal LFTs
  - APO
- Fetal:
  - Severe fetal growth restriction
  - Non-reassuring fetal status

### In severe pre-eclampsia delivery must always be preceded by:

- Control of severe hypertension and seizures
- Attention to fluid status
- Correction of coagulopathy



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## Management of Eclampsia

### 1. Resuscitation

- IV midazolam 0.1-0.2mg/kg IV if seizure is prolonged
- IV magnesium Sulphate is agent of choice
  - Loading dose 4g over 20 mins
  - Use pre-packaged bags from obstetric trolley **8g MgSO<sub>4</sub> in 100ml**
  - Rate 150ml/hr for 20mins = 50ml

(In patients with known renal disease or myasthenia gravis phenytoin is the anti-seizure medication of choice. Dose: 15mg/kg at infusion rate 40mg/min)

### 2. Prevention of further seizures

- Continue magnesium sulphate infusion
- Maintenance infusion 1g per hour = 12.5ml/hr
- Therapeutic serum magnesium range 1.7 – 3.5 mmol/L

### 3. Treatment of recurrent seizures

- Administer further 2-4g of magnesium sulphate given over 10 mins
- Rate 300ml/hr = 25ml over 10mins

### 4. Control of hypertension

- Aim for BP below 160/100
- See Hypertension management guidelines for drug therapy
- Consider GTN infusion
- Insert arterial line

### 5. Delivery

- Contact KEMH Consultant to arrange transfer if stable or delivery at SCGH if the patient is unstable.



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**Important points during administration of magnesium sulphate:  
Prior to commencing magnesium sulphate infusion ensure:**

- Deep tendon reflexes are present
- Respirations are more than 12/min
- Urine output >100ml last 4 hours
- Document baseline set vital signs

**Calcium gluconate** 1g in 10ml (2.2 mmol Calcium in 10ml) must be available at all times for treatment of MgSO<sub>4</sub> toxicity.

If Magnesium sulphate toxicity occurs give 1 amp (1g in 10mls) IV slowly over 3-10mins

**Observations of the patient every 15 mins:**

- Patella reflexes
  - If deep tendon reflexes are absent cease the infusion and collect blood for serum magnesium levels
- Respiratory rate
  - If less than 12/min cease infusion
  - Magnesium toxicity can cause respiratory arrest
- Blood pressure
- Urine output (monitor hourly)
- Maintain strict fluid balance chart

**Signs of magnesium toxicity:**

- Nausea, hot flushes, weakness
- Slurred speech, confusion, blurred vision
- Loss of deep tendon reflexes
- Hypotension
- Respiratory depression with RR <12
- Respiratory arrest
- Cardiac arrhythmia (wide QRS, increased PR interval, Prolonged QT interval, heart block)
- Chest pains
- Oliguria (Urine output less than 25ml/hr)

If signs of magnesium toxicity are present, cease the infusion and administer calcium gluconate.