

INTRODUCTION

Pregnancy induced hypertension (PIH)

Is a generic term used to define a significant rise in blood pressure during pregnancy, occurring after 20 weeks.

Pre-eclampsia

Is PIH associated with proteinuria. It can occur as early as 20 weeks but more commonly occurs beyond 24-28 weeks. It is more common in first pregnancies, multiple pregnancies, with pre-existing hypertension, diabetes or renal disease. In the UK the diagnosis of pre-eclampsia includes an increase in blood pressure (BP) (above 140/90mmHg), oedema and detection of protein in the patient's urine. Pre-eclampsia is usually diagnosed at routine antenatal visits and may require admission to hospital and early delivery. The disease may be of mild, moderate or severe degree.

The underlying pathophysiology is not fully understood, but pre-eclampsia is primarily a placental disorder associated with poor placental perfusion. This often results in a fetus which is growth-restricted (i.e. smaller than expected because of the poor placental blood flow).

Severe pre-eclampsia

May present in a patient with known mild pre-eclampsia or may present with little prior warning. The BP is significantly raised (i.e. 160/110mmHg) with proteinuria and often one or more of the following symptoms:

1. headache – severe and frontal
2. visual disturbances
3. epigastric pain – often mistaken for heartburn
4. right-sided upper abdominal pain – due to stretching of the liver capsule
5. muscle twitching or tremor
6. other symptoms – nausea, vomiting, confusion.

Severe pre-eclampsia is a 'multi-organ' disease, although hypertension is a cardinal feature, other complications include:

- intracranial haemorrhage and stroke
- renal failure
- liver failure
- abnormal blood clotting (e.g. disseminated intravascular coagulation (DIC)).

Eclampsia

Presents with generalised tonic/clonic convulsions and is one of the most dangerous complications of pregnancy. It occurs in about 1:1500 deliveries, usually beyond 24 weeks and is a significant cause of maternal mortality in the UK. Many patients will have had pre-existing pre-eclampsia (of mild, moderate or severe degree), **but cases of eclampsia can present acutely with no prior warning. ONE THIRD** of cases present for the **FIRST TIME** post-delivery (usually in the first 48 hours).

REMEMBER – although eclampsia is often preceded by severe pre-eclampsia, **IN MANY CASES THE BP WILL ONLY BE MILDLY ELEVATED AT PRESENTATION** (i.e. 140/80-90mmHg). The hypoxia caused during a tonic/clonic convulsion may lead to significant fetal compromise and even death. Convulsions are usually self-limiting, but may be severe and repeated.

MANAGEMENT

Management of mild/moderate pre-eclampsia

In a pregnancy beyond 20 weeks, if blood pressure is 140/90 mmHg or above:

- discuss management directly with the **BOOKED OBSTETRIC UNIT or MIDWIFE**
- consider transfer to obstetric unit for formal assessment.

Management of severe pre-eclampsia and eclampsia

Follow Medical Emergencies Guideline, remembering to:

- ensure **ABCD's**
- administer high concentration oxygen (O₂) (**refer to oxygen protocol for administration and information**) via a non-re-breathing mask, using the stoma in laryngectomy and other neck breathing patients, to ensure an O₂ saturation (SpO₂) of >95%
- remember that treating and resuscitating the mother is also assisting the baby
- check blood glucose level.

Pregnancy Induced Hypertension (including eclampsia)

Evaluate whether the patient has any **TIME CRITICAL** features:

- convulsions
- headache – severe and frontal
- visual disturbances
- epigastric pain – often mistaken for heartburn
- right-sided upper abdominal pain – due to stretching of the liver capsule
- muscle twitching or tremor
- confusion.

Severe pre-eclampsia and eclampsia are **TIME CRITICAL EMERGENCIES** for both mother and unborn child.

If delivery is **NOT** in progress transfer the mother immediately to the **NEAREST OBSTETRIC UNIT** preceded by a Hospital Alert Call.

If delivery is in progress call for assistance from a second ambulance and/or Paramedic and prepare for delivery, ensuring that the convulsion is monitored and managed at all times. Remember to position with **LEFT LATERAL TILT**. Immediately following delivery the mother should be transferred to the **NEAREST OBSTETRIC UNIT** preceded by a Hospital Alert Call.

IV access:

- **DO NOT** delay removal to hospital to obtain IV access
- cannulate (large bore 16G) en-route wherever possible.

Management of eclamptic convulsions:

- convulsions are usually generalised and identical to epileptic convulsions
- unless the patient is known to suffer from epileptic or tonic/clonic convulsions, then convulsions in pregnancy must be managed as **ECLAMPSIA**.
- a convulsion is usually 'self-limiting' and will end after 2-3 minutes – manage with standard ABCs, administer high concentration O₂ and position with **LEFT LATERAL TILT**.
- consider administration of diazepam IV/PR (*refer to diazepam protocol for dosages and information*) titrated against effect **ONLY IF** the patient convulses for longer than 2-3 minutes or has a second or subsequent convulsion (in hospital, IV magnesium sulphate will be given and it is better to avoid multiple drugs if possible).

Other considerations:

- caution with "lights and sirens" – strobe lights and noise may precipitate convulsions
- **ALWAYS REMEMBER TO USE LEFT LATERAL TILT PRIOR TO DELIVERY** – use a wedge or pillow under the **RIGHT** buttock and turn her towards her left side.

Key Points – Pregnancy Induced Hypertension (including pre-eclampsia)

- Pregnancy induced hypertension commonly occurs beyond 24-28 weeks but can occur as early as 20 weeks.
- Diagnosis includes an increase in blood pressure above 140/90mmHg, oedema and detection of protein in the patient's urine.
- Eclampsia is one of the most dangerous complications of pregnancy.
- Eclampsia patients present with generalised tonic/clonic convulsions which are usually self-limiting.
- Only administer diazepam if the convulsions are prolonged or recurrent.
- Severe pre-eclampsia and eclampsia are **TIME CRITICAL EMERGENCIES** for both mother and unborn child.

METHODOLOGY

Refer to methodology section.