Pre-eclampsia And Eclampsia: For The General Practitioner

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WHAT IS IT?

Pre-eclampsia is peculiarly a pregnancy complication which occurs commonly during the second half of pregnancy or within 48 hours of delivery. It is largely found in primiparous women but may also appear later in reproductive life. It is made up of all or any two of the following:

1. A raised blood pressure; 140/90 mm Hg, or above or a rise in systolic blood pressure by 30 mm Hg, diastolic blood pressure by 15 mm Hg above baseline (non-pregnant) state.
2. Albuminuria
3. Fluid retention in extravascular tissues leading to oedema.

Each of the above, alone or in combination with another, may be caused by any other disease process. Thus a raised blood pressure (BP) in pregnancy may be:

a) Pregnancy induced hypertension (PIH) as defined above (Pre-eclampsia).
b) Essential hypertension
c) Chronic hypertension e.g. caused by renal disease.
d) Combination of (a) (b) and (c).

Situations of (b) and (c) tend to precede pregnancy while later in pregnancy pre-eclampsia may be superimposed. When the combination (d) occurs it poses a great clinical diagnostic problem. For this reason some clinicians prefer to consider it as a syndrome under the name of hypertensive disorder in pregnancy (HDP).

WHY THE CONCERN?

It is a common cause of maternal morbidity and mortality as well as perinatal mortality and neonatal morbidity, especially in situations where prenatal and intrapartum care is below ideal.

WHAT CAUSES PRE-ECLAMPSIA?

This is not known. There are several different theories. However, the fact remains that removal of the placenta cures pre-eclampsia.

PRESENTATION OF PRE-ECLAMPSIA

Careful history detects symptoms, examination detects signs, as under definition. It may be classified as follows:

Category	Systolic BP (mm Hg)	Diastolic BP (mm Hg)	Albuminuria	Oedema
MILD	>135 – <150	>85 – <100	+	+/–
MODERATE	150 – <160	100 – <110	2+	+/–
SEVERE	160 or more	110 or more	> 2+	+/–

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Remember a young primigravida with a non-pregnant BP of 90/60 mm Hg is not uncommon. If her BP rises to, for example, 135/85 mm Hg in late pregnancy this rise alone may be enough to give her symptoms or even eclamptic convulsions. In such circumstances one commonly also finds severe albuminuria.

When the severe state is combined with any of: headaches, disturbed vision (flashes), epigastric pain, vomiting, or hyper-reflexia, the condition is said to have deteriorated into Impending Eclampsia.

Impending Eclampsia may deteriorate into a convulsive disorder called Eclampsia. So, Eclampsia is really a convulsive disorder complicating Pre-eclampsia, as defined earlier. The development from Pre-eclampsia through Impending Eclampsia to Eclampsia may be precipitous and occur in a few hours.

1. Because Pre-eclampsia is best looked at as a syndrome, always consider other causes of: (a) hypertension especially among multiparous women aged above 30 years, (b) albuminuria, and (c) oedema. Where appropriate facilities exist investigate for them.
2. Consider other disorders which also give the symptoms of Impending Eclampsia as outlined above.
3. Consider other causes of convulsion including cerebral malaria, meningitis, and epilepsy.
4. Treatment will depend on:
   i) Gestation: Usually these women should not be allowed to go beyond 40 weeks.
   ii) Severity: When the condition is deteriorating in spite of satisfactory supportive care consider delivery. All eclamptics should be delivered within a few hours regardless of gestation.
5. Consider treatment under the following headings:
   a) Supportive/Symptomatic
   b) Obstetric
   c) Complications
6. The midwife is commonly the first trained health personnel to suspect the condition. The midwife's role is usually to suspect a problem then to refer. Occasionally she may have to provide "First aid" care first, like in severe or eclamptic conditions at the woman's home; at the Health Centre or even in the hospital.

TREATMENT IN THE HOSPITAL

MILD PRE-ECLAMPSIA:

(A) If gestation 38 weeks or above:

i) Admit and check well-being of baby.
ii) Give sedation orally eg phenobarbitone 30-60 mg three times daily.
iii) Monitor BP and urine for albumin 6 hourly to detect worsening.
iv) Seriously consider delivering her on any convenient day certainly before the end of the 40th week of gestation.

(B) If gestation is well below 37 weeks; consider the possibility for her to rest at home.

If YES (ie possible), advise:
i) Bed rest at home
ii) Tablets Phenobarbitone as above
iii) Return to clinic for review after one week.
iv) Report immediately if symptoms or diminished fetal movements.

If NOT possible:
Admit and handle as in (A) (i) (ii) (iii)

Deterioration of the condition may require checking if instructions are implemented and even consider delivering her.

MODERATE PRE-ECLAMPSIA
i) Always admit
ii) Bed rest
iii) Sedation with phenobarbitone or diazepam
iv) Check fetal well-being e.g. fetal kick charts
v) Monitor maternal BP, albuminuria 4-6 hourly
vi) Consider the need for using hypotensive drugs e.g. methyldopa especially if multiparous and the high B.P. is persistent in spite of 24-48 hours of sedation. If worsening to Severe Pre-eclampsia, consider delivery.

SEVERE PRE-ECLAMPSIA
As for Moderate. If no improvement in 24-48 hours or worsening condition, consider delivery. Hypotensive therapy is almost always indicated parenterally. Give intravenous hydrallazine as follows: 5 mg stat; Check BP after 15-30 minutes; Repeat dose if diastolic BP remains 110 mg Hg or above. Continue repeating until diastolic BP is around 90-100 mm Hg. Then continue with maintenance doses. Similarly the sedation in these cases may have to be parenteral (eg) Diazepam 10 mg intramuscularly 4-6 hourly. Monitor for symptoms and signs of deterioration:-

WATCH FOR SYMPTOMS OF IMPENDING ECLAMPSIA and organ failure such as renal failure, left ventricular failure even cerebrovascular accident.

ECLAMPSIA
Remember, after the seizure, she is unconscious therefore, treat as such by:
i) Nurse on the side with head tilt down. Prevent her falling to the floor. Insert airway.
ii) Give oxygen if necessary
ii) Sedation with anticonvulsants as follows:
   a) Diazepam 10-20 mg stat. I.V. then repeat 4-6 hourly to keep her deeply asleep. This may also be administered by I.V. drip to titrate to desired level of sleep. (Eg 60-80 mg diazepam in 1000 mls 5% dextrose) OR:-
   b) Sodium phenobarbitone 200 mg intramuscular 6-8 hourly or more frequent as required. OR:-
   c) The "Lytic cocktail" or its modification. This was popular in the 1960s but not in current practice. BUT one may be forced to use it if above suggested therapy is not available.
iii) Hypotensive therapy with intravenous hydallazine as under severe above.
iv) Bladder retention catheter for continuous urinary drainage.

OBSTETRIC CARE OF AN ECLAMPTIC:
i) Deliver her within next few hours:
   a) Vaginally: assisted electively with vacuum extraction if already in advanced labour (8 cm dilated or more).
   b) Abdominally if not in labour or in early labour.
ii) Continue vigilant or intensive monitoring of BP, Pulse; Temperature and urinary output and albumin. Her prognosis is poor if there is:-
   a) Recurrence of convulsions
   b) Development of other complications
   If these occur consider contacting or transferring her to Central Hospital.

DECISIONS CONCERNING MODE OF DELIVERY IN PRE-ECLAMPSIA AND ECLAMPSIA

REMEMBER:

i) It is vitally important in all these cases at some stage to decide WHEN and HOW to deliver the baby in the interests of the well-being of the baby or mother or both.
ii) This condition tends to cause intra-uterine fetal hypoxia and growth retardation especially when Pre-eclampsia is superimposed on other hypertensive disease as occurs in multiparous women. The uterine contractions of labour tend, therefore, to jeopardize the wellbeing of such already compromised babies. Such babies commonly require very close monitoring or, if this is not possible, abdominal delivery may be safer. They commonly die during labour and are born fresh stillbirths.
iii) Safe vaginal delivery is achieved if the labour is not unusually protracted and if the second stage is shortened by assistance with vactium extraction (or, if possible, forceps delivery).

DECISION MAKING: Concerning the decision about WHEN to deliver see guidelines as discussed above under each severity of the condition.

Regarding HOW TO SAFELY deliver the baby:
a) If severely growth retarded; diminished fetal movements better deliver abdominally electively.
b) If severe Pre-eclampsia or Eclamptic and poor Bishop's score e.g. below 8 better deliver abdominally, regardless of gestational age.
c) Conditions in between these two extremes, the decision may be influenced by intrapartum close monitoring ability of the concerned unit. If not dependable then abdominal delivery may be better.

FINALLY:

1. Although Pre-eclampsia is difficult or impossible to prevent; its harmful effects on the mother, the baby

or both are preventable by good obstetric management by the health care team.

2. Eclampsia is one of the complications of Pre-eclampsia which is avoidable by good obstetric management. Not every convulsive seizure in pregnancy is due to Eclampsia.
3. The morbid and/or mortality effects of Pre-eclampsia and its complications on the mother and /or baby can be reduced by good obstetric decision-making especially on WHEN and HOW to safely deliver. These are achievable without the need to use imported expensive high technology.

Management of Inhaled Foreign Body and other Paediatric Airway problems.

P Fenton

Adults do get Upper Airway Obstruction from a variety of causes but the most frequently encountered patient with this condition is a baby or child, sometimes with respiratory failure in extremis, who has inhaled a maize seed, bean or peanut. Invariably there is an anxious parent present who has high expectations of a satisfactory outcome but very little idea of how serious the situation is or the difficulties involved in removing foreign bodies from a child's airway.

The airway has a number of features that make exploration a problem: it is very sensitive so general anaesthesia is required, even if you are only looking; it is inaccessible, small and the narrowest part is rigid so it is easily blocked; even momentary interruptions of the to- and fro- passage of air (eg. by looking with a bronchoscope) will cause hypoxia after a few seconds and death after a few minutes; the vocal cords can close and block the airway if they are irritated (laryngospasm); reactive oedema from clumsy instrumentation can easily cause total airway obstruction hours later when the child is unattended.

The airway above the larynx is less sensitive and has soft tissue walls, so obstruction here is easier to deal with.

At QECH we commonly see children with inhaled foreign bodies brought by the mother either from the Blantyre environs or referred from other health facilities, usually after 1 or 2 days but sometimes after more than a week. It is not known how many others there are that inhale foreign bodies and die on the spot or who, for various reasons, never make it to hospital to get effective treatment. When one considers the number of small children (especially those under 2 years) that are left unattended, the predilection that this age group has for putting things in the mouth and the quantity of maize seeds, nuts and other objects that are available for this activity, one must conclude that only the fortunate few are ever seen in hospital.

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For any inhaled foreign body (FB), the situation is urgent. The FB is either at the cricoid ring (the narrowest part of the airway) or else it has gone down the trachea and is stuck at the carina or gone down a bronchus.

It is useful to have an idea before you start as to where the FB is:

FB at the cricoid: the child has marked sub-costal recession and stridor. There is a short history of severe respiratory difficulty after playing with a seed. The child is very distressed.

Management: Induce inhalation anaesthesia with oxygen and halothane 3%. When the child is asleep, do laryngoscopy. With luck, you can quickly remove the object with Magill's paediatric forceps and there is instant improvement in the breathing.

With any FB in the airway, inhalation induction is mandatory and you should AVOID positive pressure ventilation, if possible, as this may push the object further down out of reach. Don't give suxamethonium as this will make IPPV obligatory.

If an i.v. is in place, give 20 mcg/kg atropine. I.M. atropine given on the ward is very useful if there is an opportunity to give it. Do not attempt to put an i.v. in theatre in the awake child in respiratory distress as this may cause more problems than it solves.

If the FB is further down the respiratory tract, presentation is different: the child is less distressed and the history may be longer. Usually there is cough, mild or moderate dyspnoea and, on examination, a wheeze which may be all over the lungs or localized. Cyanosis is quite common and the chest may move asymmetrically. CXR examination is often useful to show an area of collapse or the FB itself if it is radio-opaque, eg. metal or glass. Pulse oximetry reveals desaturation.

The FB may be moving up and down the trachea or be stuck somewhere. Sometimes you can be lucky and catch a bean or a seed as it intermittently appears below the cords. Paediatric Magill's forceps can be life saving in these cases. The Heimlich manoeuvre or something similar (sudden chest compression to increase thoracic pres-