Management of Preeclampsia

Preventing Maternal Mortality and Morbidity.
What is preeclampsia?

- Hypertension arising after 20 weeks gestation accompanied by evidence of dysfunction in another organ system
  - Most commonly proteinuria (>0.3g/day equiv)
  - May also involve other systems/fetus
    - Neurological
    - Liver
    - Placental function
    - Haematological

(SOMANZ guidelines)
Deaths from preeclampsia – UK confidential enquiry.
What type of deaths and are they preventable?

- Three major causes are intracerebral haemorrhage, cerebral infarction and multiorgan failure (including pulmonary oedema).

- 13/18 deaths in the UK related to preeclampsia were felt to have remediable factors
  - 8 deaths felt to have involved major substandard care
  - Blood pressure management was highlighted
BECAUSE CHOCOLATE CAN’T GET YOU PREGNANT
Timely and accurate diagnosis

- Antenatal screening for preeclampsia – requires access to antenatal care.
- Recognition of hypertension and proteinuria
- Appropriate next investigations
  - Recognising the rare preeclampsia like conditions that require alternative management.
  - Recognising atypical preeclampsia
Avoiding disaster – right place, right time, right person.

► Admission to hospital for initial assessment and planning.
  - Unpredictability of disease course
  - Assess severity, rate of progression and allows for acute intervention for fulminating disease

► Not delaying admission and assessment

► Experienced clinician determining diagnosis and instituting management
  - Requires senior staff led services and appropriate clinical staff education.
The definitive management of preeclampsia is delivery!!!

► Reasonable evidence now that delivery is indicated for all women who have preeclampsia at >37/40 completed weeks.

► All women with severe, rapidly progressive preeclampsia should be delivered in a timely fashion. Those remote from term need multidisciplinary, senior team management.

- Include obstetrician, anaesthesitist, physician, midwifery and paediatric staff.
HYPITAT trial

- *Lancet 2009; 374: 979-88*

Singleton pregnancy, >36 weeks gestation with non-severe preeclampsia or gestational hypertension

- Randomised to IOL vs expectant management (delivery when severe maternal or fetal disease evident)
- Poor maternal outcome higher in expectant management group (44% vs 31%).
- Neonatal outcome unchanged
- Lower CS rate in IOL group

Low numbers in <37 week group – but gave good support to immediate IOL for women over 37 weeks with any form of new onset hypertensive disease in pregnancy.
When to deliver?

► >37 weeks
► Uncontrolled BP
► Deteriorating platelet count, LFTs, renal function
► Neurological symptoms or eclampsia
► Pulmonary oedema
► Placental abruption

► Severe IUGR
► Non-reassuring fetal status
Severe preeclampsia

► Right place/right person
  - HDU level care with 1:1 nursing/midwifery care and senior clinician round

► Expectant management in remote from term patients (<28/40)
  - Any progression of maternal disease must initiate delivery.
  - Neonatal steroids are important BUT maternal wellbeing must take precedence.
What sort of monitoring?

► If initially stable and less than 36 weeks
  - Twice weekly bloods
  - Regular assessment of fetal/maternal wellbeing – daily rounds

  - Outpatient monitoring –
    - for mild disease but need compliant patient and organised day stay unit

  - Repeat estimations of proteinuria levels, once they are abnormal, not clinically useful – PCR reasonably reliable and can avoid 24 hour collection.
Preventing disastrous BP events

Management of Blood Pressure

- Aim <159/99 in all women
  - Lower in women with low booking BP
- Agents used to treat less important than achieving the result required
  - Aim to reach target BP inside one hour
- Team need to be familiar with iv/SL therapy
- Invasive monitoring of BP useful for severe preeclampsia only if facilities/nursing staff available.
- Stay with the patient!!!!
## Management of acute severe hypertension - *somanz*

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose</th>
<th>Route</th>
<th>Onset of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labetolol</td>
<td>20-50mg</td>
<td>iv bolus over 2 min</td>
<td>5min, repeat 15mins</td>
</tr>
<tr>
<td>Nifedipine</td>
<td>5-10mg cap, 10-20mg tab</td>
<td>Oral, Oral</td>
<td>10-20mins, repeat 30mins 20-30mins, repeat 45 mins</td>
</tr>
<tr>
<td>Hydralazine</td>
<td>5-10mg</td>
<td>iv bolus</td>
<td>20 mins, repeat 30mins</td>
</tr>
<tr>
<td>Diazoxide</td>
<td>15-45mg, max 300mg</td>
<td>iv rapid bolus</td>
<td>3-5mins, repeat 10mins</td>
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</tbody>
</table>
Eclampsia prevention

- Combination of BP control and prophylactic medication
  - Magnesium sulphate drug of choice
    - Consider in all women with severe preeclampsia
    - Risks of overtreatment esp if renal failure
    - Important for those with headache, high BP or any neurological signs/symptoms.
  - Phenytoin for those with contraindication to MgSO4
  - For mild preeclampsia – NNT = 100 to prevent one seizure. Decision analysis suggests reasonable to both treat or not treat.
Avoiding pulmonary oedema

► Careful management of iv fluids, fluid balance.

► Assessment of clinical fluid status on regular basis
  ▪ O2 saturation monitoring, CXR if needed

► Particular caution in patients with
  ▪ Obesity
  ▪ Heart disease
  ▪ Respiratory infection/conditions.
  ▪ Renal disease
Post partum care

► Often neglected

► Expect the following to happen

- Worsening of BP over 2-3 days
- Third space fluid returning to circulation
- Transient worsening of low platelets, raised LFTs
- High risk of thromboembolism
Conclusions

► Avoid disaster with preeclampsia
  ▪ Recognise disease
  ▪ Right place, right person, timely management
  ▪ Understand the high risks in severe preeclampsia
  ▪ Multidisciplinary team approach to care
  ▪ Post natal review.

► Read the SOMANZ guidelines!!!