Postnatal care of Pre-eclampsia

Dr Louise Webster
Clinical Lecturer in Obstetrics
Objectives:

• Why is this important?
• Normal physiology
• Diagnosis
• Management
• Long term implications
Causes of maternal death 2012-14

- Cardiac disease: 2.5 per 100,000 maternities
- Sepsis: 2.0 per 100,000 maternities
- Neurological: 1.5 per 100,000 maternities
- Other indirect causes: 1.0 per 100,000 maternities
- Thrombosis & thromboembolism: 0.5 per 100,000 maternities
- Psychiatric: 0.2 per 100,000 maternities
- Amniotic fluid embolism: 0.1 per 100,000 maternities
- Haemorrhage: 0.1 per 100,000 maternities
- Early pregnancy deaths: 0.1 per 100,000 maternities
- Indirect malignancies: 0.01 per 100,000 maternities
- Anaesthesia: 0.01 per 100,000 maternities

Pre-eclampsia is highlighted with a red circle.
Why is this important?

Timing of maternal deaths from hypertensive disorders of pregnancy, UK and Ireland, 2009–14

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### Table 4.1: Causes of death among women who died from hypertensive disorders of pregnancy (1997–2014)

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<tbody>
<tr>
<td>Intracranial Haemorrhage</td>
<td>16</td>
<td>18</td>
<td>7*</td>
</tr>
<tr>
<td>Eclampsia/cerebral oedema</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Pulmonary oedema</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hepatic rupture</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Hepatic Necrosis/HELLP</td>
<td>9</td>
<td>5</td>
<td>4*</td>
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<tr>
<td>AFLP</td>
<td>7</td>
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<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
<td><strong>37</strong></td>
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*One woman died due to both intracranial bleed and HELLP syndrome.

$^¥$ Figures for UK only

$^†$ Figures for UK and Ireland
Normal physiology: postpartum

- Immediately after birth:
- BP falls
- Then rises to peak 3-6 days postnatally
- Transient hypertension may occur postpartum in NORMAL pregnancies

Changes in brachial, central SBP and DBP from preconception to postpartum period

(T2 = second trimester and T3 = third trimester)
Normal physiology: postpartum

• Immediately after birth:
  • BP falls
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Changes in brachial, central SBP and DBP from postpartum period

(T2 = second trimester and T3 = third trimester)
Identifying postnatal hypertension

- 1 to 28% of women
- Check BP 6hrs post birth even in normotensive women (NICE)
- Check BP day 5 postpartum
- Inform all women of symptoms of preeclampsia and who to report to if unwell
Postnatal hypertension/proteinuria

- 90% of chronic hypertension primary
- 10% underlying renal, endocrine, cardiac/arterial disease
- Uncommon in young women
- Most likely renal origin
Postnatal hypertension/proteinuria

• **Consider if:**
  - BP often >160/100
  - young age at onset
  - requiring several agents
  - previous Hx severe early onset PET

• **Investigations:**
  - Bloods: U&E’s, ANA and autoimmune profile (Vasculitis)
  - Renal US
  - Urinalysis: + 24hr collection for catecholamines (phaeochromocytoma)
  - If hypokalaemic consider renal or metabolic pathway
Postnatal management of pre-eclampsia

• Immediate management
• Ongoing management of women diagnosed ante/intrapartum
• Women diagnosed postpartum

• Discharge planning/community management
• Long term implications
Immediate management

Severe PET
• Seizure prevention/ control: MgSO4
• Blood pressure control (same parameters, more drugs can use PN)
• Fluids:
  • Restrict
  • Remember all infusions
  • When possible change to oral fluids
• Analgesia NO NSAIDS
  • Epidural top up
  • Opioids (remember laxatives)
  • Paracetamol
• Liver/ clotting: VTE
Magnesium Sulphate

- 44% of eclamptic seizures are PN
- MgSO4 for at least 24 hours from delivery
- Observe for respiratory depression and bradycardia
- Reduce infusion if oliguric
- Consider levels if very abnormal U&E/LFT
Oliguria

- Causes:
  - Inadequately filled
  - Blood loss
  - Blocked catheter
  - Renal failure
  - Surgical

- Consider central line
Oliguria

• Aim for urine output >80ml in 4 hours

If <80ml/4 hours (or <20ml in 2 hours)
• Measure renal function and consider hypovolaemia due to blood loss
• If CVP in situ and low consider fluid bolus
• If creatinine normal repeat in 4 hours
• If creatinine rising fluid bolus (250-500ml) and if no response within an hour insert CVP line
Why no NSAIDs?

- Reduce renal blood flow
- Common cause of post partum kidney failure
- Reversible
- Can cause pulmonary oedema
Monitoring

- Keep in level 2 area for 24 hours
- Hourly urine output
- Hourly BP, Pulse, RR, CVP (if measuring)
- ? Reflexes (yes if MgSO4)
- Review by senior obstetrician 6-12 hourly
- 6-24 hourly bloods (dep on severity)
Postnatal complications of pre-eclampsia

- Thrombosis
- Acute Kidney Injury - need to ensure not chronic
- HELLP
- Intracranial bleed
- PRES
- Reversible Cerebral Vasoconstriction
- Cardiomyopathy
- Hepatic subcapsular haematoma
Long term implications, discharge planning and management in community

- Postpartum monitoring
- Managing medications
- Managing end-organ disease
  - Proteinuria
  - Renal and liver dysfunction
  - VTE
- Contraception
- Long term implications
- Counselling for the future
Postpartum monitoring in pre-eclampsia

- BP at least 4 x day whilst an inpatient & enquire re sx
- BP once per day, days 3-5
- Alternate days from day 5 until normal
- Start antihypertensive if >140/90

Low threshold for medical review
Managing hypertension

• If chronic HTN consider switching to antihypertensive that controlled BP pre-preg
• Switch from methyldopa
• Gestational HT may take 3/12 to resolve (consider 2ndary causes if persists)
• Aim for BP ≤135/85 mmHg and consider once daily dosing:
  • Enalapril
  • Amlodipine
  • (Atenolol)
# Antihypertensive drugs in breastfeeding

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Postpartum management pre-eclampsia

- Proteinuria can take 12 months to resolve
- If proteinuria persists @ 3/12 PN consider renal referral
- May need repeat bloods to confirm no lasting hepatic/renal damage (only if abnormal @ discharge from hospital) & all should have urine dipstick @ 6-8/52 r/v
- Consider postnatal obstetric debrief 6/52
- Consider woman’s mental health and support for partner
Pre-eclampsia and high blood pressure in pregnancy

Overview
- Introduction (3)
- Onset (3)
- Being unwell in hospital (5)
- Giving birth (2)
- After Giving birth (4)
- Recovery and going home (4)
- Emotions and impacts (3)
- Future health (3)
- Information and support (3)
- Taking part in research about blood pressure in pregnancy (2)

Postnatal care in hospital

Women we interviewed who had pre-eclampsia or HELLP syndrome in pregnancy sometimes stayed in hospital for longer than normal. Many had a caesarean section and so needed extra after-care. They often also had health complications, such as ongoing high blood pressure or headaches, which needed more treatment, or doctors wanted to keep monitoring them.

Even after birth there can be serious blood pressure problems, and they can continue or develop for up to eight weeks after the birth. Late-onset pre-eclampsia usually develops in the first 48 hours after birth but can appear several weeks postnatally. For this reason, it is important doctors and midwives continue to monitor a woman in hospital soon after she has given birth to her baby.

Helen X didn’t mind recovering in hospital for a bit longer after giving birth. Her baby was in the Neonatal Intensive Care Unit, so being in hospital made it easier to see him.

Claire had observations taken after she had given birth. She didn't know that there was a risk of problems developing at this time and thought she and/or her husband should have been told.
Contraception

- Barrier
- Intra-uterine device
- Hormonal (avoid COCP)
- Long term
Transfer to community care

- If no symptoms
- BP with or without treatment is 149/99 or lower
- Bloods stable, improving

- Care plan
  - Who will follow up
  - Frequency of monitoring
  - Thresholds for treatment
  - Indications for primary care referral
  - Self monitoring
Postnatal counselling

• BMI, smoking, spacing of pregnancies
• Risk of recurrence
• Plan for care in subsequent pregnancies
  • aspirin, growth scans, reg BP in 3rd trimester
• Tocophobia
• Support for partner
Future risks

• In future pregnancies:
  • Risk of gestational HT 13-52% (1 in 2-8)
  • Risk of PET 16% (1 in 6)
  • If previous severe PET, HELLP or eclampsia 25% (1 in 4)
  • If above with delivery <28/40 (1 in 2)

• In later life:
  • If PET x4 increased risk of HTN and CV disease
  • x2 risk of CVA/IHD
What Is pre-eclampsia?

- Pre-eclampsia is a serious complication which can affect any pregnancy. It does not disappear immediately after the birth.

- It is characterised by high blood pressure (hypertension) and/or protein in the urine (proteinuria), abnormalities in the blood and other variable symptoms.

- It can be dangerous to both mother and baby.

Postnatal recovery from pre-eclampsia
What to expect and medical management

Action on Pre-Eclampsia (APEC) is a Registered Charity (no. 1013557) that exists to educate, inform and advise the public and health professionals and campaign for greater public awareness of the prevalence, nature and risks of pre-eclampsia.

We depend on membership and donations to support our work.

www.apec.org
Why worry about pre-eclampsia and hypertension after birth?

Although pre-eclampsia is usually considered a disease of the second half of pregnancy, it can show itself for the first time after delivery. Pre-eclampsia at any time can cause headaches, visual disturbances, nausea and vomiting and other unpleasant symptoms.

Hypertension can cause cerebral haemorrhage (a stroke) if not treated. Eclamptic fits can occur up to 23 days postnataally, and long term untreated hypertension can lead to heart and blood vessel problems.

Although serious problems are rare, they are all avoidable and treatable.

Facts about pre-eclampsia after the baby is born

- Pre-eclampsia always goes away after the baby is born because it is a disease of the placenta (afterbirth)
- It may disappear within hours, or any time up to six months after the birth
- Occasionally pre-eclampsia presents for the first time up to four weeks after birth
- Pre-eclampsia may necessitate a longer postnatal stay in hospital until the blood pressure has been controlled for 24-48 hours, depending on the severity of symptoms and blood pressure readings
- Anti-hypertensive drugs (drugs to lower the blood pressure) should not be stopped without close medical supervision, and this should usually be done gradually
- If the hypertension does not eventually disappear after the birth, the condition will be diagnosed as non-pregnancy hypertension, which will require treatment to control cardiovascular problems in later life.

How should pre-eclampsia be managed after delivery?

All women should have their blood pressure checked soon after the birth. The condition of some women with pre-eclampsia will deteriorate soon after delivery and midwives and doctors monitor affected women very carefully.

Approximately a third of women with pre-eclampsia and pregnancy induced hypertension will continue to have hypertension after the birth or have a recurrence of hypertension within a week of birth, and 5-6% of women who develop pre-eclampsia will develop it in the postnatal period for the first time.

Medical management

- The drug methyl dopa should be stopped and if necessary replaced by drugs such as Nifedipine, Atenolol, or Enalapril. Safety of the drug regime while breast feeding should be considered and discussed with you
- You may be asked to stay in hospital until your blood pressure can be maintained below 150/100mmHg, and this could take a few days
- When you go home your blood pressure will be measured regularly by the community midwife or GP until the hypertension has resolved, and antihypertensive therapy reduced gradually as the blood pressure returns to normal. Rises in blood pressure may require readmission to hospital
- You should be offered a medical review at your postnatal review (6-8 weeks after the birth), and further review(s) by a specialist if your blood pressure is still high
- Further information is available in the NICE Guideline Hypertension in Pregnancy, available from www.nice.org
@DrLouiseWebster
@APEC_UK
#preeclampsia