COMPLICATIONS OF PREGNANCY

HYPERTENSION IN PREGNANCY

MIDWIFERY CARE

PRE ECLAMPSIA (SEVERE): CARE DURING LABOUR

Keywords: Pre-eclampsia, severe pre-eclampsia, eclampsia

AIM

• To describe the intrapartum midwifery care (observations, medications and birth management) of a woman with severe pre-eclampsia.

KEY POINTS

1. Ensure clotting studies are performed when the platelet count is less than 100 x 10^9/litre.
2. Confirm the platelet count is more than 100 x 10^9/litre prior to epidural insertion.
3. Aim to restrict the total fluid intake to 80ml/hour during labour unless there are other ongoing fluid losses (e.g. haemorrhage).
4. The frequencies of maternal observations are adjusted according to the maternal clinical condition and medication therapy guidelines.
5. Monitor the fetal heart rate continuously with a cardiotocography (CTG) during labour.
6. Administer Syntocinon 10 units intramuscular with delivery of the anterior shoulder during the third stage.
7. Avoid the use of Ergometrine or Syntometrine, as they can exacerbate hypertension and are contraindicated in hypertensive women.

MATERNAL OBSERVATIONS

BLOOD PRESSURE (BP) MEASUREMENTS

• Measure BP continually during labour (15 minutely if unstable or hypertensive during labour; otherwise measure half hourly).
• Adjust BP measurements according to maternal clinical condition and use of medication therapy
• If using automated BP machines, these should be calibrated for use in pregnancy and regularly maintained as some can systematically underestimate blood pressure in pre-eclampsia by at least 10mm Hg to as much as 30mmHg. Additionally, automated BP readings may only be considered once the BP is stable. If using an automatic machine (for frequent BP checks e.g. 15minutely), then initially check with a manual sphygmomanometer for any differences in readings. Measuring blood pressure manually is still considered the gold standard.
• Cuff size: it is imperative that the appropriate cuff size is used; it is better to use one that is too big than one that is too small. The length of the bladder should be at least 80% (but less than 100%) of the arm circumference.

RESPIRATORY RATE AND PULSE OXIMETRY

Observation of the respiratory rate (> 14 /min) will be complimented with pulse oximetry in severe pre-eclampsia; this is a non-invasive measure of the saturation of haemoglobin with oxygen, and gives an indication of the degree of maternal hypoxia.

TEMPERATURE AND PULSE

Monitor temperature and pulse according to management of a woman in labour. See Clinical Guidelines, Section B 5.8.1 Care of a Woman in the First Stage of Labour.
CLINICAL AND NEUROLOGICAL ASSESSMENT

Monitor and report to medical staff any signs of worsening hypertension or impending eclampsia. These include:

- Headaches\(^2, 3\)
- Visual disturbances\(^2\)
- Examination of optic fundi- gives an indication of optic vasospasm and papilloedema\(^2, 3\)
- Hyper- reflexia or the presence of clonus\(^3\) (significant if >3 beats) indicates cerebral irritability
- Epigastric pain and/or vomiting\(^2\)
- Liver tenderness,\(^2\) or upper abdominal pain associated with hepatic involvement\(^10\)
- Drowsiness or confusion due to cerebral vasospasm\(^8\)
- Diminished urinary output with increase in proteinuria\(^8\)

BLOOD TESTS

If no current results are available arrange blood tests for:

- Group and hold
- Full blood picture (FBP)
- Liver function tests (LFTs)
- Urea and electrolytes (U&Es)
- Urates
- Coagulation studies (if platelets are <100x10^9/L),\(^1\) or if a current platelet count is unavailable and the woman may require epidural analgesia\(^8\).

FETAL SURVEILLANCE

Monitor the fetal heart rate continuously by cardiotocography\(^10\) (CTG) during labour.\(^7\) Deviations from the normal should be reported and acted upon immediately.\(^8\)

HYDRATION AND FLUID MANAGEMENT

- Arrange insertion of an intravenous cannula if it is not already insitu.
- Commence on a liquid diet, and advise the woman this will continue during labour and birth. See: Clinical Guidelines Section B 7.3: Prevention of Gastric Aspiration in Obstetrics.
- Limit the total fluid intake to 80 mL / per hour, unless there are other ongoing fluid losses (e.g. haemorrhage), to reduce the risk of fluid overload.\(^2\)
- Avoid fluid preloading prior to epidural analgesia when low-dose epidural or combined spinal-epidural analgesia are utilised.\(^2\)
- Monitor and document the fluid intake and output hourly.\(^3\) Insert an indwelling catheter with a Curity bag attached.\(^3\) If the urine output is less than 25mL/ hour (indicating deteriorating renal function) report findings to the resident (RMO)/Registrar on duty. Oxytocin should be administered with caution as it has an anti diuretic effect.\(^8\)
- Perform regular urinalysis (every 4 hours) for proteinuria,\(^3\) ketones, and glucose.

ANALGESIA

- Epidural analgesia is an effective analgesia option for use during labour.\(^7\) It assists with BP control,\(^7\) and the use is associated with improved renal and uteroplacental blood flow. It facilitates rapid caesarean section should the need arise.\(^8\)
- Ensure a normal clotting screen and a platelet count\(^3\) (>100 x10^9/L). If epidural analgesia is contraindicated due to coagulopathy, sepsis or severe thrombocytopenia then the option of intravenous patient-controlled analgesia may be suitable.\(^10\) Consider arranging an early anaesthetic consultation regarding analgesia requirement for women who may not be suitable for epidurals.
- Notify Theatre Co-ordinator and On-call Anaesthetist when a woman with severe PE is in labour.
MEDICATION THERAPY FOR HYPERTENSION AND/OR ECLAMPSIA

ANTI-HYPERTENSIVE
Continue the use of antenatal antihypertensive medication during labour.2, 3

MAGNESIUM SULPHATE THERAPY
Magnesium sulphate is the anticonvulsant drug of choice as it halves the risk of eclampsia, and probably reduces the risk of maternal death.11, 12
See:
• Clinical Guideline, Section B 2.2.3.6 Magnesium Sulphate Anticonvulsant Therapy
• Clinical Guideline, Section B 2.2.3.7 Labour and Birth Suite – Quick Reference Guide Magnesium Sulphate Anticonvulsant therapy.

HYDRAZINE
See:
• Clinical Guideline, Section B 2.2.3.8 Hydralazine Antihypertensive Therapy
• Clinical Guideline, Section B 2.2.3.9 Labour and Birth Suite – Quick Reference Guide Hydralazine Antihypertensive Therapy.

MANAGEMENT FOR A WOMAN WITH ECLAMPSIA
See: Clinical Guideline, Section B 2.2.3.5 Management of the Women with Eclampsia

BIRTH MANAGEMENT
• The length of the second stage is determined by the fetal and maternal clinical condition. If the woman’s blood pressure is controlled within target ranges, then a normal duration of second stage (including pushing) may occur2 An assisted delivery may be required to hasten delivery, or used to avoid maternal exertion.6
• Arrange for a paediatric doctor to be present for the birth.7 See Clinical Guidelines, Section B 5.9.4.3 Labour and Birth Suite Quick Reference Guide Paediatrician attendance for at Risk Births.
• If the woman is ‘high risk’ for caesarean section discuss the option of anti-emetics during labour with the Obstetric Team and the Anaesthetist.
See: Clinical Guidelines Section B 7.3 Prevention of Gastric Aspiration in Obstetrics

THIRD STAGE MANAGEMENT
Administer Syntocinon 10 units intramuscular with the birth of the anterior shoulder.

Note: Avoid the use of Ergometrine or Syntometrine as it can exacerbate hypertension.3-5

POST BIRTH MONITORING
Transfer the woman to the Adult Special Care Unit after birth for monitoring, until her condition is stable.5
The decision for postnatal transfer is made in liaison with the Obstetric and Anaesthetic Consultants.
REFERENCES / STANDARDS


National Standards – 1 - Care Provided by the Clinical Workforce is Guided by Current Best Practice
4 - Medication Safety
9 - Recognising and Responding to Clinical Deterioration in Acute Health Care

Legislation – Poisons Act 1964


Other related documents –

• KEMH Clinical Guidelines Section: Hypertension in Pregnancy: Care of a Woman in the First Stage of Labour; Labour and Birth Suite Quick Reference Guide Paediatrician attendance for at Risk Births; Prevention of Gastric Aspiration in Obstetrics.

• E-learning: Global Voices: Pre-eclampsia and Eclampsia modules; K2 Pre-eclampsia

RESPONSIBILITY

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