GENERAL ANAESTHESIA FOR CAESAREAN SECTION

Aims

To provide optimal surgical conditions in women requiring an operative procedure, whilst aiming for the best neonatal outcome.

Technique

1. Take an adequate pre-operative history and examine the patient, noting any possible difficulties in intubation.

2. Explain the procedure including pre-oxygenation and cricoid pressure, and exclude any contra-indications.

3. Check all anaesthetics equipment (bougies, laryngoscopes and endotracheal tubes) as well as the anaesthetic machine. The emergency caesarean section drugs should be in the fridge and should have been checked at the beginning of your shift in the labour ward. Choose rescue airway device (classical LMA; if trained: ILMA or Pro-seal) and have ready and checked on airway trolley.

4. Prescribe appropriate antacids as per guidelines.

5. Establish adequate i.v. access, if not already sited, and place the patient in a left lateral tilt. This should be maintained until delivery.

6. Establish monitoring as used for all general anaesthetic cases.

7. The surgeons should be ready and the abdomen cleaned and ready for surgery. Knife to skin must not commence until you are happy with the airway. This should be communicated with the surgeon prior to induction.

8. Perform a rapid sequence induction:
   - Adequate pre-oxygenation – at least 3 minutes of breathing 100% oxygen or else at least five vital capacity breaths. Make sure that the capnograph is attached and that you are obtaining a good trace whilst performing pre-oxygenation – this will also allow you to gauge the end tidal oxygen concentration and provide you with an idea of the adequacy of your preoxygenation.
   - Adequate dose of thiopentone and cricoid pressure, followed by suxamethonium 2mgs / kg.
   - Intubate the patient.


10. Ventilate with 2% isoflurane in 50:50 oxygen: nitrous oxide mixture for the first minute in order to decrease the chance of awareness. This can then be reduced to 1% or less for the rest of the procedure.

11. Do not hyperventilate the mother pre-delivery; this can lead to a decrease in placental perfusion and fetal oxygenation.
12. Immediately after delivery give the woman 5 i.u. oxytocin i.v. and supplemental analgesia, e.g. morphine 10 – 15 mgs i.v. The inspired oxygen concentration can also be reduced to 30% at this stage. In most cases Oxytocin infusion will be required.

13. Ask the surgeon whether they would like the left lateral tilt removed.

14. At the end of the procedure, extubate the patient awake with adequate airway protective reflexes, either in the left lateral position or supine head up.

15. Prescribe adequate analgesia e.g. morphine i.m./p.o. and regular paracetamol / diclofenac, if there are not any contra-indications to NSAIDs.

GENERAL ANAESTHESIA FOR CAESAREAN SECTION IN PATIENTS WITH SEVERE PRE-ECLAMPSIA

General anaesthesia for Caesarean section in severe pre-eclamptic patients may be necessary in a small number of cases for various reasons (coagulopathy, pulmonary oedema, eclampsia, severe foetal distress, placental abruption). Mothers with severe pre-eclampsia (PET) and poorly controlled blood pressure are at increased risks of complications during the induction of anaesthesia for emergency Caesarean section. Particular attention must be directed towards preventing the potentially fatal hypertensive response to tracheal intubation, which has been associated with increased intracranial pressure, cerebral haemorrhage and cardiac failure with pulmonary oedema. This hazardous hypertensive response may also occur with surgical stimulation and extubation. If time allows, all attempts should be undertaken to control the blood pressure prior to induction of anaesthesia and surgery. The following potential problems should be anticipated when planning a general anaesthetic for patients with PET:

- There can be increased pressure response during intubation and extubation which can lead to hypertensive crisis with intracerebral haemorrhage.
- Airway problems can be exaggerated in PET due to facial, tongue and laryngeal oedema.
- Intravenous Magnesium therapy can interfere with muscle relaxants.

Anaesthetic Technique

The importance of ablating the pressure response is well documented. As there are currently no national guidelines, below is a list of accepted regimes on labour ward for this situation, the anaesthetist should use the one he/she is most familiar with.

For general management see above, in addition:

- Have a low threshold for direct arterial blood pressure monitoring in patients with severe PET requiring a Caesarean section under GA
- Induction of Anaesthesia: Use a modified rapid sequence induction technique with an opioid, for example:
  - Fentanyl 2.5 mcg/kg or 200 mcg iv
  - Alfentanil 10 mcg/kg iv or 1 mg iv
  - Remifentanil Loading dose 1 mcg/kg/min, reduce accordingly (please remember that Remifentanil is not routinely used on labour ward/obstetric theatres, therefore not suitable for very urgent cases).
- Inform the Neonatologists that you have given opioids to the mother on induction
- Remember to control the pressure response at emergence of anaesthesia