Guidelines for Caesarean Section

Approximately one in three women in Lanarkshire will have their baby delivered by caesarean section either electively or as an emergency. The risks and benefits of caesarean section compared to vaginal birth specific to the woman and her pregnancy should be explained, documented in the maternity record and written consent for the procedure obtained.

It is beyond the remit of this guideline to cover every indication for caesarean section.

A competent pregnant woman is entitled to refuse the offer of a caesarean section even when the treatment would clearly benefit her or her baby's health.

Timing of delivery

Elective caesarean section should be carried out after 39-weeks + 0 days gestation to reduce the risk of neonatal respiratory morbidity.

Emergency caesarean section:
The decision to perform an emergency caesarean section should be made by the duty obstetric registrar and approved by the duty consultant obstetrician.

Who to Call

The obstetric registrar should inform the relevant ward midwife who will then notify:

On call anaesthetist (page 134)

On call obstetric SHO (page 013)

On call theatre team (page 148)

Unit co-ordinator (Dect phone 7890/ page 017)

Use the "Telephone Communication for Emergencies" sheet when organising any emergency and ensure to communicate a target time for delivery when organising an emergency caesarean section i.e. the time is now 10.00, target time for delivery 10.30.

The **urgency** of caesarean section and **decision to delivery interval** should be recorded in the delivery record (RCOG recommendation of the Lucas classification):

1. Immediate threat to the life of the woman or fetus (aiming for delivery within 30 minutes)
2. Maternal or fetal compromise which is not immediately life threatening (aiming for delivery within 75 minutes)
3. No maternal or fetal compromise but warrants early delivery (aiming for delivery within 4 Hours)
4. Delivery timed to suit woman or staff

Pre-operative Assessment and Care

Ensure theatre checklist complete and consent form signed.
If same day admission, anaesthetic pre-operative assessment forms and consent should be completed at relevant antenatal clinic, but can be on day of surgery
Check haemoglobin if not performed within last 7 days (or if other current clinical indication).

As per "Guideline for Antacid Prophylaxis for Maternity Patients" prescribe:

- Omeprazole 20mg ORAL at 2200 hours the night before surgery
- Omeprazole 20mg ORAL at 0600 hours the morning of the surgery

If oral omeprazole has not been administered, for example in an emergency situation, prescribe omeprazole 40mg IV infusion as per "Guideline for Antacid Prophylaxis for Maternity Patients" prior to anaesthetic PLUS Sodium citrate (0.3M) 30ml orally no more than 30 minutes before induction of anaesthesia.

Pre-operative ultrasound if indication for caesarean section is breech presentation.

Consider need for consultant obstetric or anaesthetic presence.

Intra-operative Care

Catheterise following administration of anaesthesia using 12 F foley catheter
Give oxytocin 5units IV for 3rd stage

Consider an infusion of 40 units of oxytocin in 500mls sodium chloride 0.9% over 4 hours if increased risk of post-partum haemorrhage, for example: multiple pregnancy, polyhydramnios, prolonged labour, placenta praevia.

Perform delayed cord clamping (At least 1 minute, see separate guideline on Delayed Cord Clamping) in the absence of significant fetal compromise or major antepartum or intra-operative bleeding or other contraindications.

Perform paired umbilical cord pHs if caesarean section performed for presumed fetal compromise

A practitioner skilled in resuscitation of the neonate should be present at caesarean section under general anaesthesia or with presumed or risk of fetal compromise

Antibiotic prophylaxis: Ideally given up to 1 hour <u>prior to skin incision</u>
Please refer to 'Adult Antibiotic Prophylaxis in Obstetric and Gynaecological Surgery' guideline for full details of antibiotic prophylaxis and for details on re-dosing antibiotics in the event of a prolonged procedure or blood loss >1.5 litres.

<u>1st Choice:</u>
Co-amoxiclav 1.2g IV as a single prophylactic dose

<u>2nd Choice</u> - Penicillin allergy or where treating for Group B streptococcus with Benzylpenicillin:
Clindamycin 600mg IV before cord clamping, if evidence of sepsis ADD Gentamicin IV (see dosing table) after cord clamping. **Do NOT** use NHSL gentamicin calculator.

<u>MRSA positive:</u> Vancomycin 1g IV before cord clamping, if evidence of sepsis ADD Gentamicin IV (see dosing table) after cord clamping. Do NOT use NHSL gentamicin calculator.

Dosing Table for Gentamicin Prophylaxis –
- If eGFR<15ml/min/1.73m^2, give HALF of dose recommended in table (1.5mg/kg ideal body weight).
- Review medication chart prior to prescribing/administration of gentamicin. Avoid if patient has received gentamicin within previous 24 hours.

Height		Gentamicin dose (mg) based on 3mg/kg Ideal Body Weight (Females)
Feet/inches	Centimetres	
4'8 - 4'10	142-149cm	140mg
4'11 - 5'3	150-162cm	160mg
5'4 - 5'10	163-179cm	200mg
5'11 - 6'2	180-189cm	260mg
6'3 - 6'8	190-203cm	300mg

Consider a longer course of antibiotics for women with additional risk factors for infectious morbidity, for example women on immunosuppressant therapies or type 1 diabetics. An individual plan of management should be documented in the Badger maternity notes postnatal management plan.

Thromboprophylaxis

Subcutaneous **enoxaparin** should be administered to **all** women for 10 days following caesarean section unless contraindicated.

The initial dose should be given 4 hours post anaesthetic or 4 hours after removal of epidural catheter.

Enoxaparin Weight Based Dosing (Use BOOKING Weight)

Weight (kg)	Dose
< 50	**20mg daily**
50 – 89	**40mg daily**
90 – 120	**60mg daily**
>120	Requires senior input to ensure adequate dosing

Use the **Badger VTE risk assessment** tool to help guide decisions on dose and duration of treatment.

Dose adjustments and duration of therapy will be modified for women with risk factors for thromboembolism, for example: known thrombophilia's, previous thromboembolic disease or antiphospholipid syndrome. In such patients an individual management plan should be recorded in the Postnatal Management Plan section in Badger following consultation with the Medical Obstetric Thrombophilia Team.

Contraindications (absolute and relative) to enoxaparin:

- Known hypersensitivity to low molecular weight heparins
- established coagulopathy or thrombocytopenia (platelets <100 ($x10^9$/L))
- known bleeding disorders.

If in doubt, discuss with consultant haematologist

Enoxaparin is used routinely in pregnancy, and is considered safe in breastfeeding

Post – operative Monitoring

Following **general anaesthetic**, women will initially be monitored in the recovery area of the theatre suite with one to one observation until the woman has airway control, cardiovascular stability and can communicate. Once achieved, transfer the patient to recovery ward. Thereafter observations (respiratory rate, heart rate, blood pressure, pain and sedation) should be monitored every 30minutes for 2 hours, then hourly for a

further 2 hours.

Following **regional anaesthesia**, women will initially be monitored in the recovery ward.

Intrathecal or epidural opioids – observations of respiratory rate, sedation and pain scores:

Observations for emergency section:
- every 15mins for 1 hour,
- every 30 minutes for 1 hour,
- every hour for 2 hours then,
- every 2 hours for 18 hours

Observations for elective section:
- On return from theatre then,
- 30 minutes after this then,
- 1 hour after this then,
- 2 hourly for 12 hours then,
- 4 hourly for 12 hours.

Patient controlled analgesia with opioids – 2 hourly observations of respiratory rate, sedation and pain scores until 2 hours post discontinuation of therapy.

Post – operative Analgesia (unless contraindications to therapy)

Diclofenac 100mg rectally at the end of surgery, one off dose.

Paracetamol 1 gram orally four times a day.

Ibuprofen 400mg orally three times a day.

Dihydrocodeine 30mg four times a day, regularly for 48h then reduce to when required.

Morphine Sulphate 10mg/5ml solution 5mg to 10mg when required up to every 2 hours, for 48hours then stop.

Lactulose 15ml twice a day (while on regular opioids).

References:

1. Caesarean Birth. National Institute for Clinical Excellence. Clinical Guideline Number 192. Published March 2021. https://www.nice.org.uk/guidance/ng192/chapter/Recommendations
2. The National Sentinel Caesarean Section Audit Report. RCOG Clinical Effectiveness Support Unit, *RCOG Press*. October 2001
3. Royal College of Obstetricians and Gynaecologists. *Thromboembolic Disease in Pregnancy and the Puerperium: Reducing the Risk*. Green-top Guideline No. 37a. London: RCOG; 2015.
4. Mercer JS et al. Delayed cord clamping in very preterm infants reduces the incidence of intraventricular haemorrhage and late-onset sepsis: a randomized, controlled trial. *Pediatrics* 2006 Apr; **117(4)**:1235-42.
5. SAPG statement on Advice on Implementation of the Updated NICE Guideline on caesarean section. 2012.

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