# Anaphylaxis/Local anaesthetic toxicity

# Obstetric Simulation

| | | | | | |
|---|---|---|---|---|---|
| **Name:** | Caroline Salter | **Observation at start** | | **CRT:** | 2s |
| **D.O.B.** | 19/11 (31Y) | **RR:** | 10-16 | **Temp:** | 37.2 |
| **Address:** | (Insert local address) | **ETCO2:** | dropping | **BM:** | 5.2 |
| | | **Sats:** | 98% | **Weight:** | 89kg |
| **Hospital ID:** | 9443561288 | **Heart Rate:** | 84 | **Allergy** | NKDA |
| **Ward:** | Labour ward | **BP:** | 128/70 | | |

| Background to scenario | Specific set up |
|---|---|
| A patient is booked for a category II LSCS. The obstetric anaesthetist topped up the existing epidural and has just given antibiotics. The patient feels unwell and collapses.<br>This scenario can be either anaphylaxis or local anaesthetic toxicity.<br>The initial (actor) anaesthetist will be insistent on treating the 'wrong' diagnosis | (Pregnant) Mannequin on theatre table<br>Cannulated, epidural connected<br>Anaesthetic and drug chart<br>Epidural top up drugs and antibiotics (local protocol)<br>Surgical instruments<br>Resus equipment, intralipid, anaphylaxis drugs |
| **Required embedded faculty/actors** | **Required participants** |
| Obstetric anaesthetist<br>ODP<br>Obstetric doctor<br>(Scrub/midwife) | Anaesthetist – called to help<br>(Other specialities can also be a part of the scenario) |

**Past Medical History**

G1P0, F&W. No concerns in pregnancy
NKDA, no regular medication. Airway – no significant findings
Epidural inserted at maternal request, has been working well. Transferred to theatre for delayed second stage of labour.
There is pressure on the obstetric anaesthetist to begin as labour ward is busy. The obstetric doctor also requests antibiotics to be given early as patient tested positive for Group B streptococcus.

| Drugs Home | Drugs Hospital |
|---|---|
| Nil reg, pregnancy vitamins only | Epidural top up – as per local protocol<br>Antibiotics – for caesarean section, as local protocol |

**Brief to participants**

You are part of the on call anaesthetic team. A call goes out for 'Anaesthetic emergency in obstetric theatre'

**Scenario Direction**

**Stage 1 – if Anaphylaxis**

| | |
|---|---|
| **A** | Tongue swelling (Sees only if examines) |
| **B** | RR 25, sats dropping, ETCO2 trace – obstructive, high airway pressure, wheezing on auscultation |
| **C** | Tachycardic, hypotensive -> can go into cardiac arrest |
| **DE** | Felt 'unwell' and lost consciousness prior to participant arrival. Rash if examined<br>The obstetric anaesthetist is certain this is local anaesthetic toxicity as the patient had no allergies and lost consciousness soon after giving local anaesthetic, unsure if it was through cannula or epidural because they were rushed. |
| **Rx** | Assessment of situation and role allocation, leadership vs team role<br>Balancing potential causes, managing team member certain it is one diagnosis/infectious certainty<br>Using Association of Anaesthetists Quick reference handbook<br>Treatment of symptoms and cause |

**Stage 1 – if local anaesthetic toxicity**

| | |
|---|---|
| **A** | Snoring |
| **B** | RR 10, sats dropping, chest clear |
| **C** | Tachycardic with ectopics (if possible to simulate), can go into cardiac arrest |
| **DE** | Felt 'unwell' and lost consciousness prior to participant arrival.<br>The obstetric anaesthetist is certain this is anaphylaxis because they collapsed soon after antibiotic injection<br>Obstetric anaesthetist – treat (unless stopped) for anaphylaxis |
| **Rx** | Assessment of situation and role allocation, leadership vs team role<br>Balancing potential causes, managing team member certain it is one diagnosis/infectious certainty<br>Using Association of Anaesthetists Quick reference handbook<br>Treatment of symptoms and cause – including intralipid |

**Stage 2 – Resolution, follow up**

| | |
|---|---|
| **A** | Own or intubated – depending on participant's actions |
| **B** | RR 12 sats 98% |
| **C** | HR 110 BP 90/45 |
| **DE** | GCS – depending on participant's actions. Can recover after cardiac arrest, or remain intubated for post operative destination to be decided<br>Still does need LSCS – obstetric team can support in decision making |
| **Rx** | MDT decision making and balancing risks and benefits - re operation and post op destination<br>Appropriate calling for help<br>Debrief of junior colleague who faced a challenging scenario |

**Guidelines**

AAGBI guideline on local anaesthetic toxicity https://anaesthetists.org/Home/Resources-publications/Guidelines/Management-of-severe-local-anaesthetic-toxicity
Association of Anaesthetists QRH handbook
BJA - Linsey E. Christie, MBChB (Hons) BSc (Hons) MRCP FRCA, John Picard, BA MA DEA BM BCh FRCA, Guy L. Weinberg, MD, Local anaesthetic systemic toxicity, BJA Education, Volume 15, Issue 3, June 2015, Pages 136–142, https://doi.org/10.1093/bjaceaccp/mku027
Resuscitation Council UK, Anaphylaxis https://www.resus.org.uk/sites/default/files/2021-04/Anaphylaxis%20algorithm%202021.pdf

**Guidance for Patient Role**

Patient is unconscious from the start of the scenario

| Guidance for Obstetric anaesthetist | Guidance for Obstetric doctor |
|---|---|
| Certain of the 'wrong' diagnosis, insistent on treating this<br>Only called for help for a second pair of hands<br>If participants consider alternative diagnoses, be open to these | Keen to start as labour ward is busy<br>Rush any decisions |
| **Guidance for Other theatre roles** | **Additional challenges** |
| Competent but do not anticipate next actions, do what is requested<br>Be supportive depending on participant's stage of training<br>If participants do not think of alternative diagnoses, highlight symptoms/signs that might not have been picked up or suggest correct diagnosis without letting scenario progress too long down the 'wrong' path | Partner concerned and becomes angry<br>Partner feints and has head injury |

**Session Objectives**

| | |
|---|---|
| **Clinical** | Treatment of anaphylaxis/local anaesthetic toxicity |

**Non-technical skills**

| | |
|---|---|
| **Teamworking** | Coordinating activities when new to situation, exchanging important information, using authority if safety risk is suspected |
| **Task management** | Identifying roles and allocating, prioritising treatment options, utilising resources |
| **Situational awareness** | Gathering information on arrival, recognising potential causes |
| **Decision making** | Balancing risks and selecting treatment options, continuous re-evaluation |

**Tell us how you found this simulation scenario resource.**
Give us feedback (5 mins) here: https://forms.office.com/e/etz7yZf0aa
Or scan the QR code below: