OSCE: Local Anaesthetic Toxicity

Dr Rebecca Day 28/12/15

Double Length Station – 3 mins reading, 17 mins

SUBJECT AND CURRICULUM REFERENCE

Medical Expertise ☐

Prioritisation and Decision Making ☐

Communication ☐

Leadership and Management ☐

CLINICAL SCENARIO STEM

It is a busy shift in an urban ED. A 37 year old intoxicated female has presented to ED with a 10cm superficial wound to her left leg, after being involved in a fight in a nightclub. She has been very rude to multiple staff members and is currently having her leg sutured by an RMO. The RMO embarked on suturing the leg in an unmonitored side room, without the advice or knowledge of the duty ED Consultant. The patient has begun to feel unwell and has called in the consultant for help.

INSTRUCTIONS

* Candidate
  + When you enter the room you must establish from the RMO and patient what has happen thus far. You must then take appropriate action with both the clinical situation and when the patient leaves the room, the RMO. You must explain to the RMO how the patient might deteriorate, and how they would need to be managed. You do not need to examine the patient or perform any procedures. There will be a Time Out announced by the examiner 5 minutes from the end of the OSCE, this is the signal for the patient to leave the room, and for you to de-brief with the RMO.
* Role Player
  + You have been to a nightclub and got into a fight with another female, who has pushed you into a glass table and caused a cut to your leg. It happened about 3 hours ago. You have had 7 or 8 drinks and feel a bit drunk. You are a little annoyed that you had to wait for an hour to be seen. The doctor you are seeing doesn’t seem to know what he is doing. You have had a lot of injections and now you feel unwell. You feel “floaty” and anxious, and muddled up. Your mouth feels a bit funny and your ears are ringing. You have no previous medical problems, no allergies and no medications taken. You last had a tetanus booster at the age of 18. You weigh 48kg. The scenario will end 5 minutes before the end of the OSCE at which point you will leave the room so that the consultant and RMO can debrief.
* RMO
  + You were in the Minors area alone as the supervising registrar for the area had “popped out” for an hour to get something from home. You were left alone and without guidance and there was a drunk woman demanding that someone “sort out her leg”. The nurses were pushy and asked you see the patient. They had put her into an unmonitored side room as she was making loads of noise. She was intoxicated but cooperative. No past medical problems, allergies or medications. The wound was clean and superficial with no neurovascular compromise, but needed sutures. You washed the wound with iodine but did not put down drapes or use sterile equipment. She kept saying that she had pain so you injected a total of 50mls of 1% lignocaine without adrenaline. You did not withdraw between each injection. You did not calculate the patients weight or work out the toxic dose. The patient is now complaining of a “funny feeling” in her mouth, is anxious and you have checked obs 2 mins ago which you only disclose if asked (P130, BP 90/70, T 36.6, RR 32 Sats 99%)
  + With regards to supervision, you were left alone by the registrar who has previously said to you on nights “feel free to cope”. You felt pressured by the nurses to do something as the department was very busy. You are distressed by your error and are worried the patient might die. You want to know what is going to happen to the registrar, and whether you or he will be reported to AHPRA
* Examiner
  + The candidate will enter the room and must establish the history of the event and what has occurred thus far from the RMO. They must illicit that the RMO was inadequately supervised and be understanding and non-confrontational.
  + They must establish that a “potentially toxic” dose of local anaesthetic has been administered and instruct that is moved to an appropriate resus bay, monitored, has an IV line inserted. They must mention the minor symptoms (eg nausea/confusion/tinnitus etc) and also seizures and arrhythmias as potential consequences. Discussion of management in event of deterioration should include midazolam, intubation, hyperventilation, intralipid and resuscitation.
  + In dealing with the RMO the candidate should demonstrate that they are non-judgemental, able to listen, gather the facts, be understanding, explain the necessary in-house remedial actions, make a follow up plan to fully review the event off the floor,

ASSESSMENT CRITERIA

* Is calm, patient and listens to the patient and RMO
* Establishes the facts from the history
* Recognition that the RMO was not adequately supervised and encouraged/ pressurised by nurses to act alone
* Recognition that patient has had a potentially toxic dose of lignocaine (states the known toxic dose/kg , or establishes patients weight and the total mg given)
* States minor symptoms to look of for e.g.
  + Perioral tingling and mouth numbness
  + Anxiety and restlessness
  + Tinnitis
  + Twitching (precursor to seizures)
* States major consequences
  + Arrhythmias
  + Seizures
  + Respiratory Depression
  + Cardiac Arrest
* Explains to the RMO that the following need to happen now:
  + Cease procedure and no further local anaesthetic
  + Obs
  + ECG
  + Continuous monitoring in resus bay
  + Consider midazolam to increase seizure threshold/for seizures
* Explains that if the patient deteriorates they will need
  + Intubation and hyperventilation if deteriorates
  + Intralipid therapy (1mg/kg boluses up to 3x, then infusion as per protocol)
  + Don’t use lignocaine, CCB, BB for arrhythmias. Amiodarone/Bretyllium preferable
  + Inotropes and Fluid
* De-brief with RMO
  + Establishes facts
  + Active listening, empathy, non judgemental
  + Explains that errors were made and remedial action is necessary
  + Recognises that RMO is distressed and establishes if safe to continue working/leave floor
  + States the need to address lacking supervision/system issues/potential bullying by nurses
  + Explains that gaps in knowledge will need to be addressed
  + Mention of open disclosure to patient – by consultant
  + Makes appropriate follow up meeting