

Cabrini Practice OSCE 5**Candidate Instructions:**

This station is a **Standardised Case-Based Discussion**. You will be interacting directly with an Examiner. You will be asked to outline your assessment and management to the following clinical situation. Further information will be provided as the case evolves. The examiner will be assessing your medical knowledge as well as your reasoning and rationale to your approach and decisions.

Please be as specific as possible when answering. For example, when discussing drugs, describe your dosage regimen and the reasons why you chose that regimen, as opposed to other regimens.

Case information:

You are a junior consultant working in tertiary emergency department. A 50 year old male has just arrived after taking an overdose of 1000mg (15mg/kg) of Amitriptyline 45 minutes prior. No other drugs were ingested.

He is drowsy and confused.

His Vital signs are:

Temp 36.5

HR 86

BP 80/50

SaO₂ 90% RA

GCS E3M6V5 (14) PEARL

Past Medical History: Mechanical Aortic Valve replacement, Depression

Medications: Amitriptyline, Warfarin

No known Allergies

Domains:

Medical Expertise:

Management 70%

Prioritization and Decision Making 30%

Examiner Instructions:

Case Information:

The candidate is a junior consultant working in tertiary emergency department. A 50 year old male has just arrived after taking an overdose of 1000mg (15mg/kg) of Amitriptyline 45 minutes prior. No other drugs were ingested.

He is drowsy and confused.

His Vital signs are:

Temperature 36.5

HR 86

BP 80/50

SaO₂ 90% RA

GCS E3M6V5 (14) PEARL

Past Medical History: AVR x2, Depression

Medications: Amitriptyline, Warfarin

No known Allergies

Stage 1: 0 – 3 mins: *“What is your initial management of this patient?”*

Resuscitation –

Airway/**B**reathing - O₂, support, ausc for aspiration

Circulation – iv access x 2, IVF bolus 500mls N/Saline Adrenaline or Noradrenaline infusion
aim SBP > 90 HR < 100

Risk assessment

High risk of life threatening TCA OD given dose 15mg/kg, acute presentation and unstable showing signs of cardio and CNS toxicity.

Anticholinergic effects likely but often masked by coma Mx

Supportive care and monitoring

- Prepare for Seizures –Benzodiazepines eg Midazolam 0.15kg/kg

Investigations—12-lead ECG, paracetamol, blood glucose level (BGL)

Serial ECGs , *“Initial ECG - SR, RBBB, QRS >160, Peaked R AVR, no other ST/T changes”*

– Prolongation of QRS interval

QRS >100 ms is predictive of seizures

QRS >160 ms is predictive of ventricular tachycardia

– Large terminal R wave in aVR

– Increased R/S ratio (>0.7) in aVR

– QT prolongation is also noted secondary to potassium channel blockade

Decontamination

Activated charcoal for > 10mg/kg but should never be administered until after intubation and only after dealing with all resuscitation priorities.

Enhanced elimination – not applicable

Antidotes

NaHCO₃ 100 mmol (2 mmol/kg) IV repeated every 1–2 minutes until restoration of QRS < 120 ms/perfusing rhythm

- Lignocaine (1.5 mg/kg) IV can be use after NaHCO₃ and when pH is established at >7.5.
- Amiodarone and beta-blockers are contraindicated

Disposition – ICU, Toxicology consult, general medicine, psychiatry

Stage 3:00 - 5:30 mins:

“After your initial Management his Vital signs are now:

Temperature 36.5

HR 120

BP 70/40

SaO₂ 94% 15L/min Hudson mask

GCS E3M5V4 (13) PEARL” (hand to candidate)

“You elect to intubate him. Describe your approach to intubation”

-Call for help/team approach- ICU/Anaesthetics/within the ED

-Prepare:

- Equipment - video laryngoscopy, LMA, bougie, NPA, suction, ETT, Guedel, Bag- Mask-Valve
- Difficult airway – bleeding, unstable
- Drugs – ketamine 0.5 – 1.5mg/kg, fentanyl, suxamethonium 1.5mg/kg, rocuronium 1.2mg/kg, NOT Propofol/Thiopentone
- Support circulation – IVF, Metaraminol, Adrenaline, Noradrenaline
- Personnel- most experienced intubator, team leader, airway nurse, drug nurse, scribe

-intubation:

- Plan A – Video laryngoscopy
- Plan B – LMA
- Plan C – Video laryngoscopy with bougie
- Plan D – surgical – needle cricothyroidotomy/percutaneous kit (e.g. Melker)/open cricothyroidotomy- scalpel/bougie/ETT

(or similar)

Post intubation hyperventilation to aim pH 7.50-7.55

Stage 3: 5:30 – 7 Mins “You successfully intubate him, 30 seconds post intubation his vital signs are:

Temperature 37.1 degrees

Heart Rate 170

BP 50/30

RR 12

O2sats 96% on 100% FiO2” Hand to candidate

“What are the potential causes of this change in condition and how would you manage them?”

-**TCA toxicity** – worsening cardiac toxicity –NaHCO₃ bolus’, Ad/NA infusion, IVF bolus’

-Obstructive shock from gap trapping with hyperventilation post intubation- disconnect ETT and manual external chest compression, bag/valve ventilate- prolonged expiratory phase, permissive hypercapnoea

-Intubation drugs- Metaraminol, IVF bolus

-Anaphylaxis – IVF, Adrenaline

-ETT malposition - less likely- check ETT-auscultate, end tidal CO₂, fogging, CXR, reposition

-other causes of shock less likely- Tension PTx/PE/tamponade/sepsis

Vital Signs:**Pre-Intubation:**

<i>Temp</i>	<i>36.5</i>
<i>HR</i>	<i>120</i>
<i>BP</i>	<i>70/40</i>
<i>SaO2</i>	<i>94% 15L/min Hudson mask</i>
<i>GCS</i>	<i>E3M5V4 = 13</i>

Fold -----

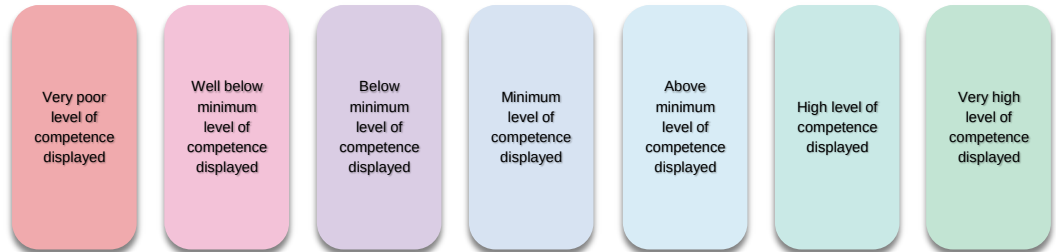
Post Intubation:

<i>Temp</i>	<i>37.1 degrees</i>
<i>HR</i>	<i>170</i>
<i>BP</i>	<i>50/30</i>
<i>RR</i>	<i>12</i>
<i>O2sats</i>	<i>96% on 100% FiO2</i>

Examiner Marking Sheet

COMPONENT ASSESSMENT

For each Domain below, select the ONE best option that best represents the candidate's level of performance. The option "**minimum level of competency displayed**" represents the level of safe independent practice as a **junior FACEM** in Australasia



Please rate ALL the following domains:

[Detailed assessment criteria](#)

Medical Expertise – Management	☐	☐	☐	☐	☐	☐	☐
Prioritization & Decision Making	☐	☐	☐	☐	☐	☐	☐

Please use the following criteria to inform your ratings above (mandatory items in *bold italics*)

Medical Expertise –Management (70%)

- Diagnose life threatening OD
- Seek and treat cardio and neuro toxicity

Resuscitation –

Airway/Breathing - O₂, support, ausc for aspiration

Circulation – iv access x 2, IVF bolus 500mls N/Saline Adrenaline or Noradrenaline infusion aim SBP > 90 HR < 100

Supportive care and monitoring

- Prepare for Seizures –Benzodiazepines eg Midazolam 0.15kg/kg

Investigations—12-lead ECG, (paracetamol, blood glucose level)

ECG looking for:

- Prolongation of QRS interval
 - QRS >100 ms is predictive of seizures
 - QRS >160 ms is predictive of ventricular tachycardia
- Large terminal R wave in aVR
- Increased R/S ratio (>0.7) in aVR
- QT prolongation is also noted secondary to potassium channel blockade

Decontamination - Activated charcoal for > 10mg/kg but should never be administered until after intubation and only after dealing with all resuscitation priorities.

Enhanced elimination – not applicable

Antidotes

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- Amiodarone and beta-blockers are contraindicated

Disposition – ICU, Toxicology consult, general medicine, psychiatry

Intubation:

- Call for help/team approach
- Equipment - video laryngoscopy, LMA, bougie, NPA, suction, ETT, Guedel, Bag- Mask-Valve
- Drugs – ketamine 0.5 – 1.5mg/kg, fentanyl, suxamethonium 1.5mg/kg, rocuronium 1.2mg/kg, NOT Propofol/Thiopentone
- Personnel- most experienced intubator, team leader, airway nurse, drug nurse, scribe
- intubation:
- Plan A/B/C/D**

Post intubation hyperventilation to aim pH 7.50-7.55

Post Intubation:

- TCA toxicity** – worsening cardiac toxicity –NaHCO₃ bolus', Ad/NA infusion, IVF bolus', hyperventilate
- Obstructive shock from gap trapping with hyperventilation post intubation- disconnect ETT and manual external chest compression, bag/valve ventilate- prolonged expiratory phase, permissive hypercapnoea
- Intubation drugs- Metaraminol, IVF bolus
- ETT malposition - less likely- check ETT-auscultate, end tidal CO₂, fogging, CXR, reposition
- other causes of shock less likely- Tension PTx/PE/tamponade/sepsis

Prioritization & Decision Making (30%)

- Systematic approach to life threatening OD
- Early ECG looking for signs of toxicity
- Plan for early intubation
- Prioritize aggressive support care (IVF, vasopressors) and NaHCO₃

INFORMATION

Station Summary: Structured case-based discussion of life-threatening TCA OD

EXAMINER NOTES (For examiner reference only)

OSCE 'incident reporting' notes: Please provide details if an issue occurs which may influence the candidate's exam outcome e.g. protocol breach, candidate illness, etc.

GLOBAL RATING FOR STANDARD SETTING:

This scale is used in the standard setting process for the OSCE. Please rate the candidate's OVERALL performance in this OSCE. The rating should take into account the entirety of the OSCE, rather than just a sum average of the individual domain scores. This element **MUST** be completed for the standard of the examination to be set.

	Well Below Standard	Below Standard	Just at Standard	Above Standard	Well Above Standard
In terms of a safely practicing junior emergency physician , select the ONE option that best reflects the candidate's performance in this station:	☐	☐	☐	☐	☐

EXAMINER SIGNATURE:

Reference Murray et al, Toxicology 3rd Edition

HOSPITAL NAME

Id:
Name:
Sex: Unknown
Age: ---
Date: 16-Oct-2007 04:25

HR 113 bpm BP +/-
QRS-P-T-axes -131 62 71
QRS 156 ms P 72 ms
PR 112 ms QT 356 ms QTc 448 ms

SUMMARY: ABNORMAL

SINUS TACHYCARDIA

INTERPRETATION MADE WITHOUT KNOWLEDGE OF
PATIENT'S SEX AND AGEAbnormally high P amplitudes
NON SPECIFIC P WAVE ABNORMALITIES

ABNORMAL EXTREME QRS AXIS DEVIATION

Prolonged QRS duration
Broad R or R' in V1 or V2
L.V. CONDUCTION DEFECT OF RIGHT BUNDLE BRANCH
BLOCK TYPEInferior and lateral T changes
APPEARANCES ARE ABNORMAL AND MAY BE DUE TO

MYOCARDIAL ISCHAEMIA

Unconfirmed ECG