



AUSTRALASIAN COLLEGE
FOR EMERGENCY MEDICINE

2016.1B FELLOWSHIP CLINICAL EXAMINATION (OSCE)

STATION 11 PATIENT MANAGEMENT – ECG ANALYSIS

1. STATION SUMMARY

A registrar has brought a patient's ECG to the candidate for review and is seeking advice from the candidate on management of the patient. Candidate's tasks are to interpret the ECG, provide appropriate management advice and address any registrar concerns.

2. CANDIDATE INSTRUCTIONS

You are the duty consultant of a tertiary emergency department. Your registrar has just seen a 58 year-old whom they are suspecting has taken an overdose of slow release verapamil 3 hours ago. They have brought you the ECG to review and would like to seek your advice on management of the patient.

His regular medications include:

- Aspirin 100mg daily
- Atorvastatin 40mg daily
- Verapamil SR 240mg daily
- Pantoprazole 40mg daily
- Sertraline 50mg daily

His vital signs are:

- HR 36
- BP 90/55
- Sats 95% RA
- RR 24
- GCS 13

Your tasks are to:

- Interpret the ECG
- Provide appropriate management advice
- Address any registrar concerns

You will not be required to directly manage or assess the patient.

This OSCE will assess the following domains:

- Medical Expertise
- Prioritisation and Decision Making

3. ROLE-PLAYER INSTRUCTIONS

You are the junior registrar of a tertiary emergency department. You have just seen Mr Smith who is a 58 year-old with a suspected calcium channel blocker overdose. He was found by his family member 1 hour ago with an empty pack (30) of verapamil sustained release 240mg tablets and an empty bottle of vodka.

He was last seen by his family members 3 hours prior to been found.

He has been stressed about work issues and felt depressed. He was thinking of ending his life so that he doesn't have to deal with it.

He took his Verapamil SR all in the one go with a bottle of vodka. He hasn't taken any other tablets he is aware of.

He has no chest/abdominal pain.

He feels light headed and is unsure whether it is the alcohol or tablets.

His background medical history includes:

- Hypertension
- Hypercholesterolaemia
- Ischaemic Heart Disease
- Gastro-Oesophageal reflux
- Depression

His regular medications include:

- Aspirin 100mg daily
- Atorvastatin 40mg daily
- Verapamil SR 240mg daily
- Pantoprazole 40mg
- Sertraline 50mg daily

Social History:

- Works as labourer
- Smokes 15 cigs/day for the past 30 years
- Drinks 3-4 times a week
- Lives with wife and children

His vital signs are:

- HR 36
- BP 90/55
- Sats 95% RA
- RR 24
- GCS 13 (E3V4M6)

Cardiovascular/respiratory and gastrointestinal examination is unremarkable.

There is no focal neurological deficits.

An ECG has been performed and the candidate has seen this outside the room.

Prompts for the Role-Player

- *'I see the nurses have given you the ECG of Mr. Smith, who has possibly taken a verapamil overdose. What do you make of it?'*
- *'So it seems that he really took the pills then?'*
- *'What's my management priority?' or 'What should I do first?'*
- *If IV fluids are mentioned, 'how much?' 'What should my haemodynamic goals be?'*
- *'How do I specifically address his bradycardia?'*
- *'What should my end points of therapy be e.g. BP, HR?'*
- *'Are there any antidotes that would be useful in this patient?'*
- *'What specific treatments actually work for this?'*
- *'Is there any role for decontamination in this man?'*
- *'Is there a role for pacing?'*
- *'What if despite all the above therapies he continues to deteriorate?'*

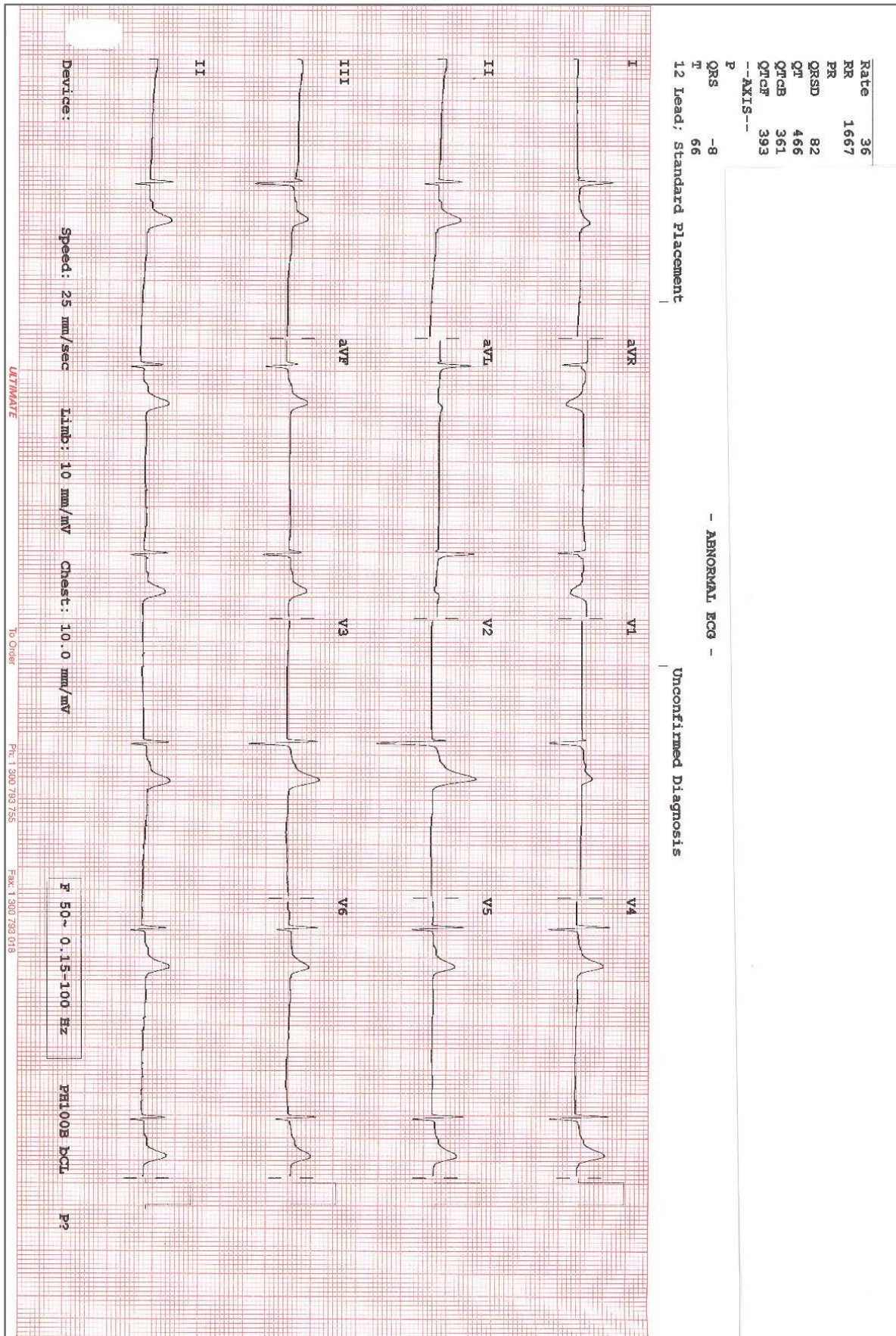


4. EXAMINER INSTRUCTIONS

The case scenario is based on a patient who has taken an overdose of calcium channel blocker and is currently symptomatic with borderline haemodynamics. The tasks of the candidate are to identify the lethal nature of this overdose, institute appropriate initial life-saving treatment, seek appropriate advice from relevant specialities and formulate a sound disposition plan.

The candidate will have the ECG to review outside the room.

ECG



Examiner Mark Sheet

CONFIDENTIAL Examiner Rating: OSCE 11

CANDIDATE barcode



EXAMINER 1
barcode

EXAMINER 2
barcode

COMPONENT ASSESSMENT

For each Domain below, select the **ONE** 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.

	Very poor level of competency displayed	Well below minimum level of competency displayed	Below minimum level of competency displayed	Minimum level of competency displayed	Above minimum level of competency displayed	High level of competency displayed	Very high level of competency displayed
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Please rate **ALL** the following domains:

Medical Expertise	☐	☐	☐	☐	☐	☐	☐
Prioritisation & Decision Making	☐	☐	☐	☐	☐	☐	☐

Detailed assessment criteria

Please use the following criteria to inform your ratings above

Medical Expertise

ECG: Identify a **junctional escape rhythm**.

Risk Assessment: Identify this is a life threatening ingestion

Immediate Management:

- Resus bay, **cardiac monitoring**, O2
- ABC, IV access, bloods, BSL (accept BSL is included in a VBG)
- CXR/VBG (noting BSL and lactate are important parts of the VBG)/electrolytes)
- Atropine – unlikely to work (0.5-1.5mg iv q15min if working)
- **Support haemodynamics** :
- **Fluids (accept 1-2L in view of IHD)**.
- **Calcium** empirically (CaCl2 or CaGluconate with doses)(CaCl2 10% 10mL over 10mins q5min or CaGluconate 10% 30mL over 10 mins q5min)
- Adrenaline or NorAd or metaraminol. **Pressors** should not be used in isolation without calcium/insulin (this is a pass/fail criteria as use without other therapy is likely to be ineffective and harmful).
- Consider pacing

Role of Decontamination:

- Consider pre-emptive intubation for whole bowel irrigation/charcoal. GCS is 13. Charcoal without intubation may be problematic. Intubation without anticipation of haemodynamic instability may also be problematic.

Definitive Treatment (For CCB poisoning):

- **High dose insulin-euglycaemia therapy** (Including doses) (Start an infusion 0.5 -1U/kg/hr as starting dose range for infusion, together with 10% dextrose at 100ml/hr, keeping BSL between 5.5-11mmo/L) May need to increase to 50%
- ECHO – to look at haemodynamic status
- External Pacing – may get electrical capture, but not mechanical capture. Transvenous ventricular pacing is the better choice because of AV node blockade.
- Glucagon – no human data; no longer used (not a pass/fail criteria)

Other measures:

- IABP/ECMO
- Bicarb if severe acidosis: 1-2mmol/kg q5min titrating to narrowing of QRS, resolution of arrhythmia or pH>7.3
- Note that there is no role for dialysis

Additional information:

Candidates could score higher if they consider other polypharmacy overdose such as salicylate/sertraline.

Examiner Mark Sheet (cont')

CONFIDENTIAL Examiner Rating: OSCE 11



Prioritisation & Decision Making

The following sequence would demonstrate Prioritisation & decision-making:

- 1. Cardiorespiratory monitoring
- 2. Management of the current/anticipated haemodynamic instability: fluid, Ca, insulin have a higher priority than glucagon, pressors and pacing
- 3. Consider decontamination and appropriate airway management (GCS 13)
- 4. Poisons Centre :
- Note 1: No initiation of treatment prior to contacting Toxicology service is below the standard expected.
- Note 2: If the candidate is managing the patient appropriately, contacting the toxicology service is not mandatory.
- 5. Addressing the Mental health issue
- 6. Requires HDU/ICU admission

INFORMATION

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EXAMINER NOTES (For examiner reference only)

OSCE 'incident reporting' notes: Please provide details if an issue occurs which may influence this 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 or 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 practising junior emergency physician, select the ONE option that best reflects the candidate's performance in this station:	☐	☐	☐	☐	☐

EXAMINER SIGNATURE:



OSCE 1