

## **REFERRAL AND DISCUSSION CASE 3**

### **BRIEFING**

You are the **FY1 in ED** and you have clerked Mr James Ryan, a 67-year old male who has presented with chest pain.

You have an ECG, which is available to view.

You are expected to refer the patient to the cardiology specialist registrar over the telephone, covering the following:

- Summary of the case from the patient notes provided
- Systematic interpretation of the ECG, including the likely diagnosis
- Appropriate further management of the patient

You should provide the specialist with the information they require.

**This station will last 10 minutes.**

POST-TAKE ROUND NOTES

ADULTS

W107

University Hospitals of Leicester NHS Trust		Affix patient ID label	
Hospital: LRI	Ward: ED	Hospital No.: H123456	
Consultant: Dr Davidson		Name: Mr James Ryan	

**PC** - chest pain

**HPC** - 67 year old M with central, dull crushing chest pain radiating to the neck since the previous night whilst he was watching TV. He also feels sweaty and nauseous. He reports no other symptoms. He has tried paracetamol but this has not improved the pain. His wife called an ambulance immediately.

**PMHx** - hypertension, type 2 diabetes mellitus

**PSurghx** - Nil

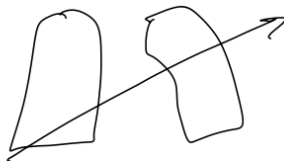
**DHx** - ramipril, metformin.

**SHx** - lives at home with his wife, moderately active but reduced exercise tolerance recently, drives and does ADLs independently

**FHx** - nil

**O/E** - patient alert, diaphoretic  
Warm peripheries, CRT < 2 seconds

**Cardiorespiratory exam:**  
Regular pulse, no raised JVP  
HS I+II+0



*Dr Sampson*  
FY1  
GMC 622167

**Calves:** SNT, no peripheral oedema

Tick box to ensure appropriate items reviewed  
(put N/A if necessary)

Date completed: 08/11/23

VTE	Antimicrobials	Nutritional status	Maximum level of care
Drug chart	EWS	EDD documented	Dementia screen >75yrs
Blood results	IV lines	DNA-CPR status	Diabetes monitoring chart
Imaging reports	Catheter	Sepsis screen	

NEWS key 0 1 2 3		FULL NAME MR JAMES FYAN				DATE OF BIRTH 01/01/1957				DATE OF ADMISSION 08/11/23					
DATE		TIME				DATE				TIME					
A+B Respirations Breaths/min	≥25					3					≥25				
	21-24					2					21-24				
	18-20	19									18-20				
	15-17										15-17				
	12-14										12-14				
	9-11					1					9-11				
	≤8					3					≤8				
A+B SpO <sub>2</sub> Scale 1 Oxygen saturation (%)	≥96										≥96				
	94-95	94				1					94-95				
	92-93					2					92-93				
	≤91					3					≤91				
SpO <sub>2</sub> Scale 2! Oxygen saturation (%) Use Scale 2 if target range is 88-92%, eg in hypercapnic respiratory failure  !ONLY use Scale 2 under the direction of a qualified clinician	≥97 on O <sub>2</sub>					3					≥97 on O <sub>2</sub>				
	95-96 on O <sub>2</sub>					2					95-96 on O <sub>2</sub>				
	93-94 on O <sub>2</sub>					1					93-94 on O <sub>2</sub>				
	≥93 on air										≥93 on air				
	88-92										88-92				
	86-87					1					86-87				
	84-85					2					84-85				
	≤83%					3					≤83%				
Air or oxygen?	A=Air	A									A=Air				
	O <sub>2</sub> L/min					2					O <sub>2</sub> L/min				
	Device										Device				
C Blood pressure mmHg Score uses systolic BP only	≥220					3					≥220				
	201-219										201-219				
	181-200										181-200				
	161-180										161-180				
	141-160	150									141-160				
	121-140										121-140				
	111-120										111-120				
	101-110					1					101-110				
	91-100					2					91-100				
	81-90										81-90				
	71-80										71-80				
	61-70					3					61-70				
	51-60										51-60				
		≤50									≤50				
C Pulse Beats/min	≥131					3					≥131				
	121-130					2					121-130				
	111-120										111-120				
	101-110					1					101-110				
	91-100	96									91-100				
	81-90										81-90				
	71-80										71-80				
	61-70										61-70				
	51-60										51-60				
	41-50					1					41-50				
		31-40					3				31-40				
	≤30									≤30					
D Consciousness Score for NEWS onset of confusion (no score if chronic)	Alert	A									Alert				
	Confusion					3					Confusion				
	V										V				
	P										P				
	U										U				
E Temperature °C	≥39.1°					2					≥39.1°				
	38.1-39.0°					1					38.1-39.0°				
	37.1-38.0°	37.1									37.1-38.0°				
	36.1-37.0°										36.1-37.0°				
	35.1-36.0°					1					35.1-36.0°				
		≤35.0°					3				≤35.0°				
NEWS TOTAL		2								TOTAL					
Monitoring frequency										Monitoring					
Escalation of care Y/N										Escalation					
Initials										Initials					

National Early Warning Score 2 (NEWS2) © Royal College of Physicians 2017

## BLOODS

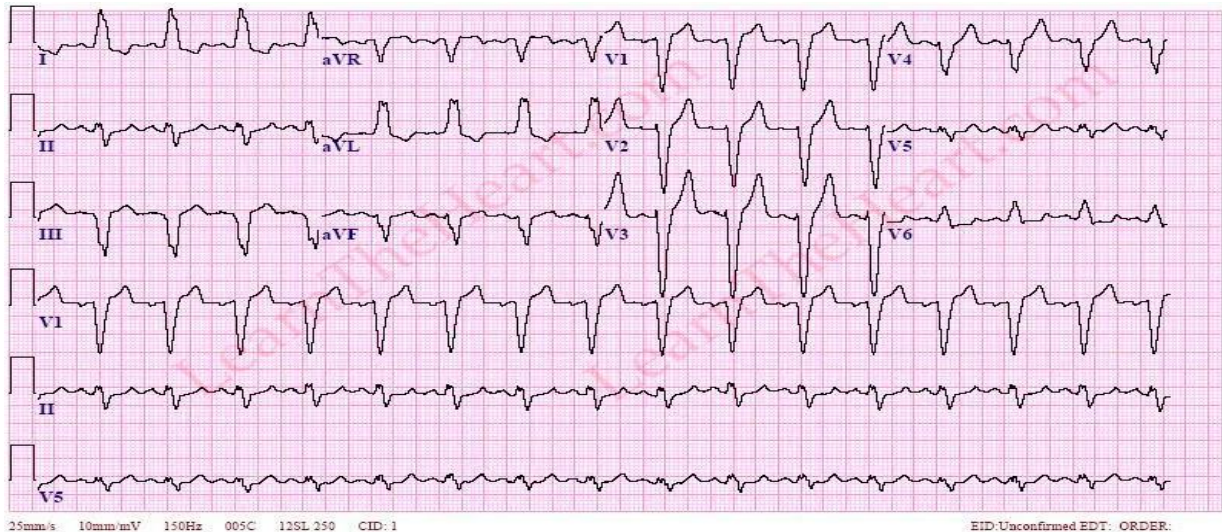
WCC	7.9x10 <sup>9</sup> /L
Neutrophils	6x10 <sup>9</sup> /L
Eosinophils	0.08x10 <sup>9</sup> /L
Lymphocytes	1.1x10 <sup>9</sup> /L
Monocytes	0.6x10 <sup>9</sup> /L
Basophils	0.06x10 <sup>9</sup> /L
Platelets	405x10 <sup>9</sup> /L
Hb	11.3 g/dL

Na+	137
K+	5.3
Cl-	99
Creatinine	59
Urea	8
eGFR	>90

ALT	17 IU/L
AST	8 IU/L
Albumin	35 g/L
ALP	56 IU/L
Troponin	60 ng/ml
CRP	15

## ECG

08/11/23, 12 PM, MR JAMES RYAN, H123456



## FOLLOW-UP QUESTIONS

1. Given this diagnosis, what further medical management would you suggest?
2. Does this patient need to notify DVLA? What driving guidance would they need, if any?
3. What are the complications of an MI?

## MARK SCHEME

### Example referral

Hi, my name is x and I am an FY1 in ED. Am I speaking with the cardiology specialist registrar? I would like to present a patient, Mr James Ryan. His hospital number is H123456.  
**S** – Mr Ryan is a 67 year old M and I believe he is having a myocardial infarction. He has had a 1-day history of sudden-onset central, dull, crushing chest pain radiating to the neck, accompanied by nausea and diaphoresis.

**B** – he has cardiac risk factors as he is a known hypertensive and type 2 diabetic

**A** – the patient is alert but he is currently in pain and appears diaphoretic. He has warm peripheries and a normal CRT. His cardiorespiratory examination is normal. His NEWS is 2 -

he is haemodynamically stable. His bloods show raised troponin of 60 ng/ml. I have his ECG, may I present it please?

**R** – I will prescribe morphine, oxygen with an aim of saturations >94%, I will also prescribe isosorbide nitrate as his blood pressure is stable and dual antiplatelet therapy. He requires PCI as definitive management. Is there anything further you would suggest?

### ECG interpretation

This is the ECG of Mr James Ryan taken on 08/11/23 at 12PM.

It is a regular rhythm with a ventricular rate of approximately 100 BPM. There is atrial activity, however there are broad QRS complexes noted across all leads in a left bundle branch pattern. Thus, this is a left bundle branch block.

*(Bear in mind this is a challenging ECG - doing harder ECGs can improve your ability to recognise the easier, more common pathologies.*

*In this case, it is worth being aware that a new LBBB is considered an MI - there are specific criteria called Sgarbossa criteria that make an LBBB qualify as an MI. But you do not need to know the criteria for exams. We just want you to get comfortable with the idea that chest pain with a new LBBB pattern should trigger the thought of MI. Of course, in real clinical practice you need previous ECGs to determine if it is a new pattern, as well as troponins to give you the full picture.*

*If you're wondering how this may be different to a VT, remember the typical BBB pathology has specific directions for the deflections of waves in V1 to V6. However, in VT the morphology will pretty much be the same across the leads and typically the QRS complex will be broader. Again, certain rhythms will have their intricacies, so do not get bogged down. This is just to advance your learning. Furthermore, in these stations the diagnosis should be more straightforward and it's more about how you communicate your management/reasoning to the specialist).*

### Follow-up questions

1. Given this diagnosis, what further medical management would you suggest?

*Once he has been treated definitively with a PCI, he would require long-term antiplatelet therapy in the form of clopidogrel for 12 months. I would also prescribe him a statin as long-term medication. He would benefit from another check of his HbA1c and cholesterol levels.*

2. Does this patient need to notify DVLA? What driving guidance would they need, if any?

*This patient does not need to notify the DVLA. He cannot drive for 1 week post a successful PCI.*

*(Driving advice is useful to know for OSCEs.)*

3. What are the complications of an MI?

*Heart failure, arrhythmias, LV rupture, valvular disease, Dressler's syndrome, cardiac tamponade*