Advanced End of Block Exam

INTRODUCTION

You have 1hour to complete this test. Each multiple choice question has only one correct answer. The short answer questions (SAQ's) will dictate how many marks each question is worth in brackets.

Q1

Which of the following arrhythmias is caused most commonly by a macro re-entry circuit forming around the tricuspid valve

A. Atrial flutter

B. Atrial fibrillation

C. AV nodal re-entry tachycardia

D. Wandering atrial pacemaker

E. Sick sinus syndrome

Q2

The rhythm strip below is taken from a well patient in cardiology clinic. What is the diagnosis?

A. Atrial fibrillation

B. Focal atrial tachycardia

C. Atrial bigeminy

D. Wandering atrial pacemaker

E. Multifocal atrial tachycardia

Q3

A 68 year old male has been admitted to the general surgical ward as an emergency due to an acute abdomen. This was vey sudden onset, he had been previously fit and well and was passing stools regularly with no blood. His ECG is shown below which appears similar to one taken 6 months ago during a GP appointment. His drug history includes simvastatin, bisoprolol and ramipril. VBG analysis shows acidosis with a raised lactate of 5.5 (normal <2). What is the most likely cause of his abdominal pain

A. Gastritis

B. Bowel obstruction

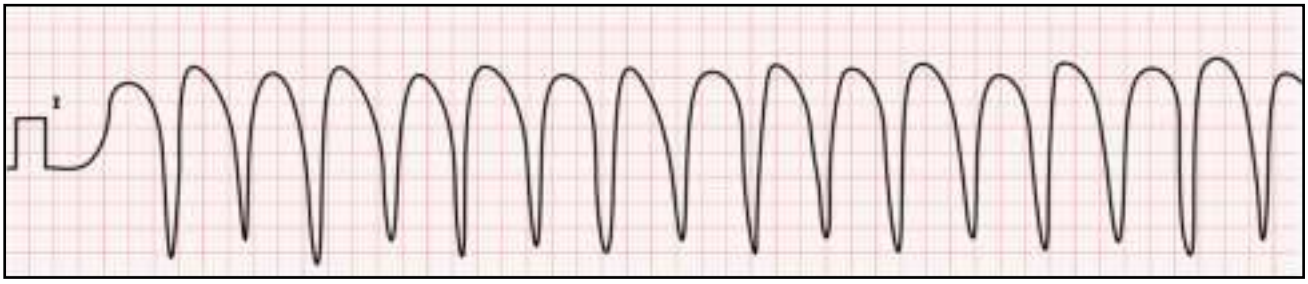
C. New onset inflammatory bowel disease

D. Ischaemic colitis

E. Non-GI related abdominal pain

Q4

A 61 year old female patient collapses in the emergency department. Her BP is unrecordable but there is a faint carotid pulse palpable. Her O2 sats are 96% and temp is 36.1. She has a PMH of ischaemic heart disease, diabetes and vasculitis. Her ECG trace is shown below. What's the most appropriate immediate management step?



A. Urgent cardiology opinion regarding percutaneous coronary intervention

B. DC cardioversion

C. Defibrillation

D. Start CPR

E. IV amiodarone 300mg

Q5.

Which of the following criteria would make a diagnosis of ventricular tachycardia more likely than a diagnosis of a supra-ventricular rhythm with a superimposed bundle branch block

A. Left axis deviation

B. Inverted p-waves following each QRS complex

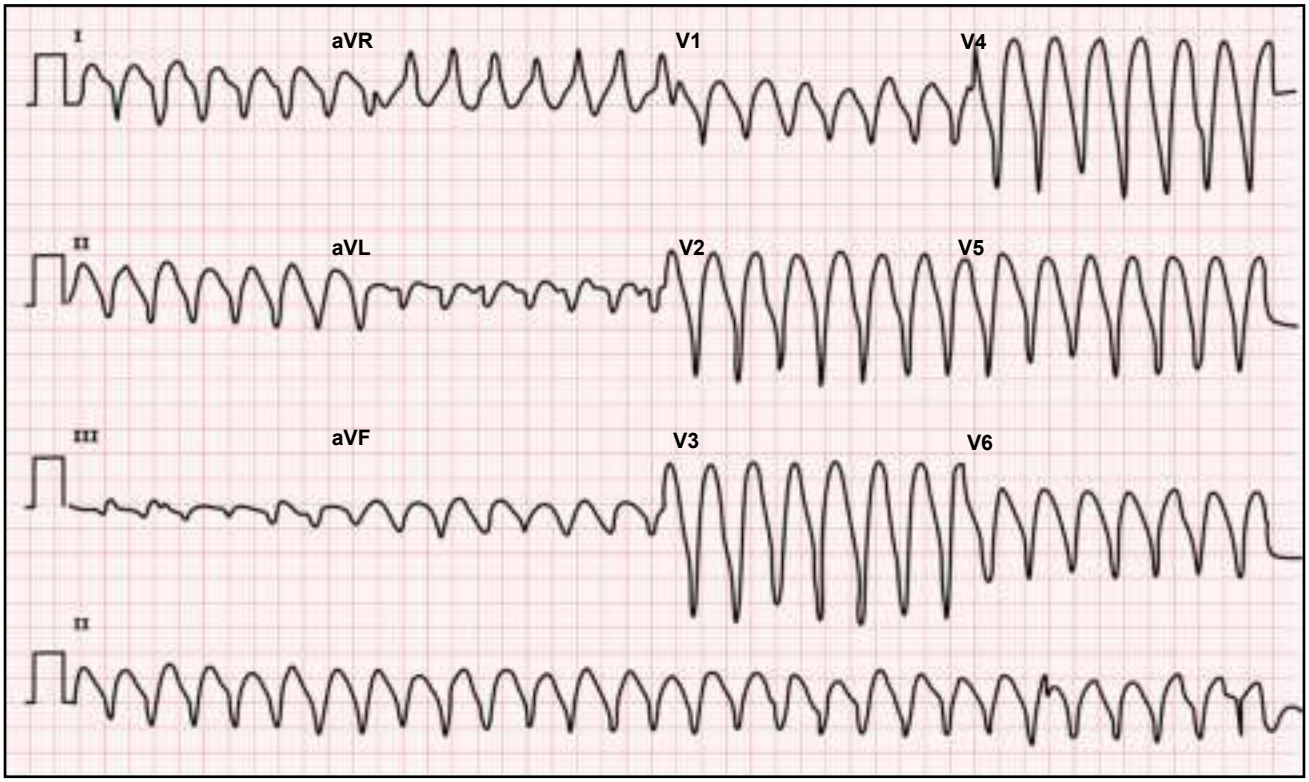
C. RSr' complex in V1

D. QRS duration of 120ms

E. Previous bundle branch block on 12 lead ECGs

Q6

A 77 year old female has recently undergone PCI for a STEMI. Whilst in CCU she begins to feel unwell and a 12 lead ECG was performed. A diagnosis of ventricular tachycardia was made. What feature is shown on this 12 lead ECG that makes a diagnosis of VT more likely than a supra-ventricular arrhythmia with aberrant conduction?



A. RSr' complex in V1

B. Negative concordance

C. Positive concordance

D. AV dissociation

E. Absent p-waves

Q7

Which of the following would cause QTc prolongation

A. Hyperkalaemia

B. Hypercalcaemia

C. Use of IV lidocaine (Na+ channel blocker)

D. Use of IV magnesium

E. Use of amitriptyline

Q8

Which of the following statements is the most correct regarding the cardiac trace below

F. This is 2nd degree Mobitz type I heart block

G. This is 2nd degree Mobitz type II heart block

H. There is no evidence of heart block

I. This is a second degree heart block with 2:1 conduction

J. This is 3rd degree heart block

Q9

A 25 year old male patient with known atrial fibrillation is due to undergo an ablation procedure to correct his arrhythmia. Just prior to the procedure he begins to develop a tachyarrhythmia. His trace is shown below. What is the most likely explanation for the trace below?

K. Pre-excited atrial fibrillation

L. Atrial fibrillation + bundle branch block

M. New onset polymorphic ventricular tachycardia

N. New onset monomorphic ventricular tachycardia

O. Pre-excited AV nodal re-entry tachycardia

Q10

An 89 year old patient with terminal cancer is found unresponsive in her bed. There was ongoing debate as to whether CPR would be appropriate and no DNACPR decision had been made. A cardiac monitor was attached and no central pulse could be felt. Which of the following is the best description for the ECG shown below?

A. Complete asystole

B. Agonal rhythm

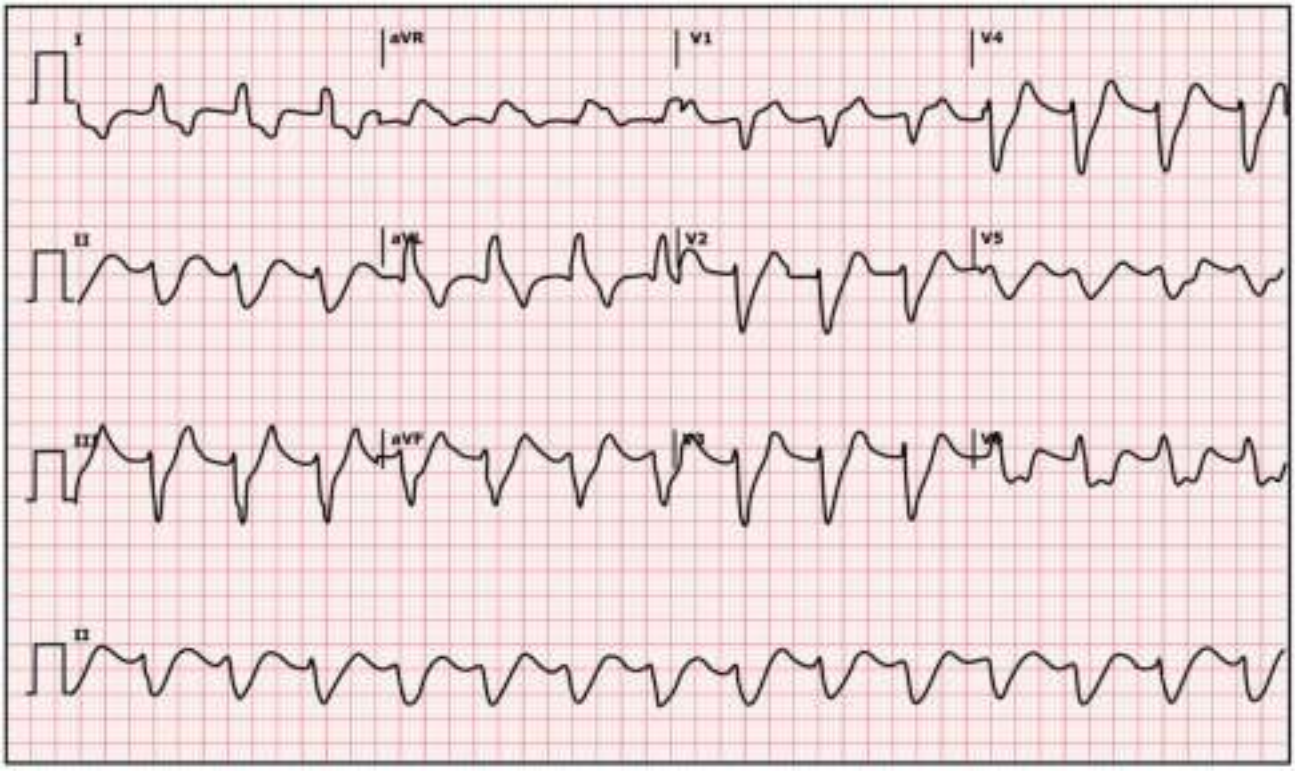
C. P-wave asystole

D. Pulseless electrical activity

E. Ventricular fibrillation

SAQ 1

A 45 year old female patient with diabetic nephropathy and CKD stage 4 presents with worsening shortness of breath. She has no chest pain or fevers. Her curren medication includes humulin M3, ramipril, spironolactone, bisoprolol and simvastatin. Her ECG is shown below. Please interpret the ECG systematically by answering the questions below



Is electrical activity present in all leads? (1 mark) -

What's the heart rate? (1 mark) -

Is the rhythm irregular? (1 mark) -

Is the QRS complex broad? (1 mark) -

Are there any p-waves? (1 mark) -

What's the relationship between p-waves and QRS complexes? (1 mark) -

What is the approximate cardiac axis in degrees (1 mark), is this within the normal range (1 mark) -

What other morphological change in the ST segments can be seen on this trace (1 mark) -

What is the most appropriate next investigation to perform (1 mark) -

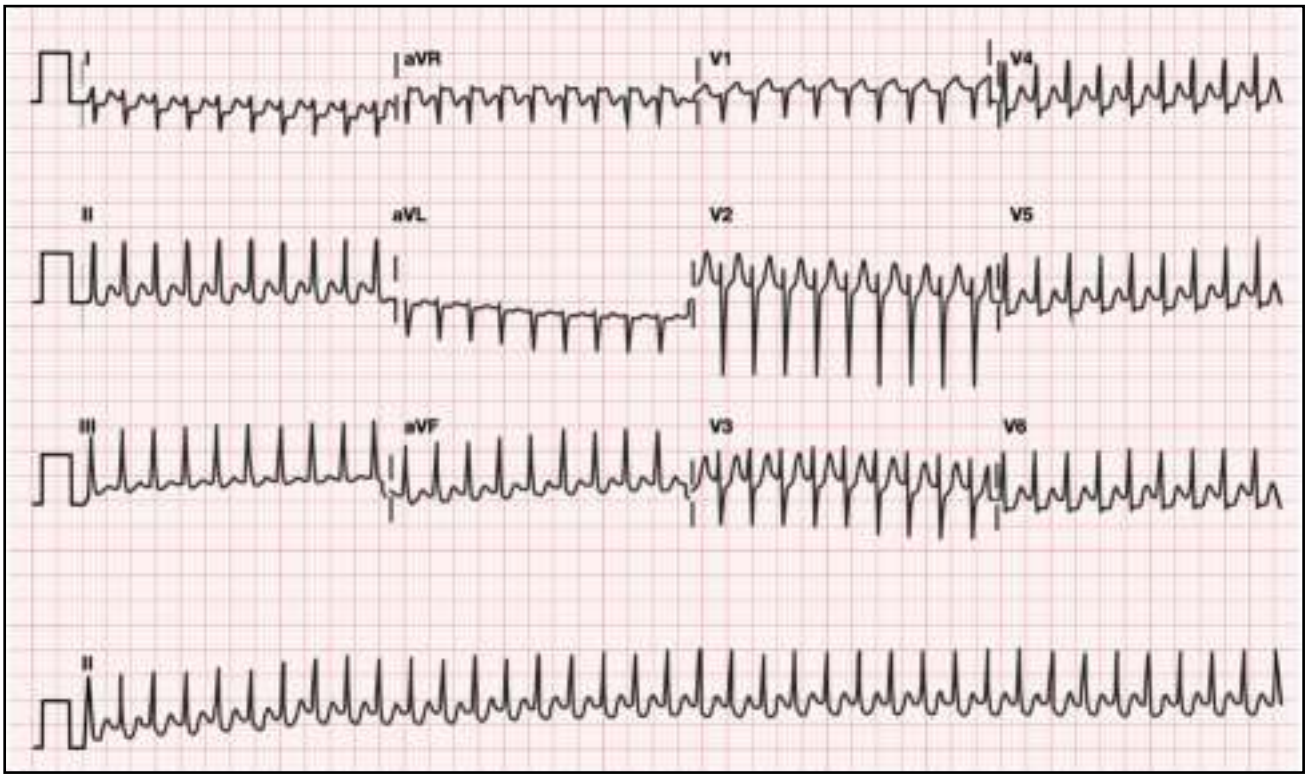
What is the most likely cause of this patient's ECG changes (1 mark) -

What initial drug treatments should be administered (3 marks) -

These initial measures fail to deliver any noticeable ECG changes. What definitive management will need to be undertaken? (1 mark) -

SAQ 2

A young 16 year old male patient is admitted to the ED following sudden onset collapse during a football tournament. He has no PMH of note and is taking no medications. His 12 lead ECG is shown below.



What umbrella heading can we use to describe the arrhythmia is shown on the trace (1 mark) -

Give 3 potential causes of this arrhythmia (3 marks) -

What is the initial treatment of this arrhythmia given that the patient is stable and still has a palpable pulse (1 mark) -

Total. /30

Pass mark 21/30