

Question 1 (18 marks) 9 minutes

You receive ambulance pre-notification of a patient in cardiac arrest. The patient is a 45 year old female with unknown past history. She complained of chest pain prior to collapse nearby to the hospital. She is currently in VF arrest with ACLS in progress. Estimated time of arrival is 5 minutes.

- a. Other than duration of ACLS, state six (6) key pieces of information that should be obtained in ambulance handover. (6 marks)
- Identifiers- Name & DOB
 - NOK/ bystander friends
 - Circumstances- drugs nearby/ access to drugs/ prior symptoms expanded
 - Bystander CPR- duration prior to ambulance
 - Initial cardiac rhythm
 - Number of shocks
 - Presence of ROSC/ down time
 - IV access working
 - Total drugs given/ especially whether amiodarone given
 - Infusions currently running
 - Airway manoeuvre difficulties- difficulty with ETT/ depth of ETT
 - BSL

The patient arrives. CPR was performed for a total of 12 minutes. She is currently in slow AF at a heart rate of 40 / min with spontaneous circulation. An adrenaline infusion is running.

- b. Should this patient be transferred urgently for primary coronary intervention ? (1 mark)
- Yes
- c. Justify your decision. State three (3) points in your answer. (3 marks)
- Indicated post OHCA arrest with ROSC- Included in ANZCOR guidelines
 - Likely acute coronary occlusion given age 45 (80% of > 45 yrs of age, 35 yrs is the cutoff point between genetic vs structural)
 - Especially if STEMI on ECG
 - Even in absence of ECG STEMI criteria (*absent in ~ 1/3 of post arrest pt with acute coronary occlusions*)
 - Prevention of further de

Prior to your decision, the patient deteriorates to VF.

- d. State four (4) benefits of cardiac ultrasound in the ongoing management of this patient. (4 marks)
- More accurate than pulse check if rearrest
 - Adequacy of CPR
 - Differentiation between fine VF/ Asystole/ PEA
 - Exclude cardiac tamponade as the cause of arrest
 - Finding suggestive of massive PE:
 - RV wall: hypokinesis, -moderate or severe/ McConnell's sign
 - RV dilatation: End-diastolic diameter >30 mm in parasternal view, RV larger than LV in subcostal or apical view
 - Increased tricuspid velocity >26 m/sec
 - Paradoxical RV septal systolic motion
 - Pulmonary artery hypertension- Pulmonary artery systolic pressure >30 mmHg
 - Dilated IVC with lack of respiratory collapse
 - Can confirm mechanical capture if pacing required
 - Guide pericardiocentesis

Despite ongoing standard ACLS management, ventricular fibrillation persists for a further 20 minutes without return of spontaneous circulation.

- e. List four (4) circumstances under which prolonged CPR may be warranted for this patient.(4 mark)
- Poisoning
 - Asthma
 - Hypothermia
 - Thrombolysis recently administered for suspected PE
 - Snake bite/ envenomation
 - Pregnancy- if perimortem CSection is considered
 - Allow relatives to view Pt while alive if timely availability and requested by relatives