

# CVS MEDICINE

1.	SUPRAVENTRICULAR TACHYCARDIA	29
2.	CARDIAC FAILURE	29
3.	HYPERTENSION	30
4.	CORONARY DISEASE	32
5.	VALVULAR HEART DISEASE	34
6.	CARDIAC ARYTHMIAS	36
7.	MIX	36
	ANSWER KEYS	37

## 1. SUPRAVENTRICULAR TACHYCARDIA

1. A 20-year-old woman has had palpitations for 6h. She has had similar episodes before but they have never lasted this long. An ECG shows a regular rhythm of 160 bpm with inverted P waves in leads II, III, and aVF, and narrow QRS complexes. Although vagal manoeuvres do not work, after adenosine 6 mg IV, normal sinus rhythm at 90 bpm is restored. Which is the single most likely origin of her tachycardia?

- a. Atrium
- b. Atrioventricular (AV) node
- c. Bundle of His
- d. Sinoatrial (SA) node
- e. Ventricle

2. A 30 year old man suddenly collapses after an acute attack of palpitations. His blood pressure is 60/30 mmHg. An ECG reveals supraventricular tachycardia. The most appropriate immediate treatment would be

- a. I/V Verapamil
- b. I/V Adenosine
- c. I/V Digoxin
- d. I/V Labetalol
- e. D.C. cardioversion

3. A 71-year-old man has had a central chest pain radiating to his left arm for 1 hour. While an ECG is being recorded, some observations are carried out. T=37.1°C, HR= 44 bpm, BP=110/65mmHg, RR=22/min. Which is the single most likely occluded coronary artery?

- a. Left circumflex coronary artery
- b. Left anterior descending artery
- c. Left main coronary artery
- d. Posterior descending artery
- e. Right coronary artery

## 2. CARDIAC FAILURE

1. A 73-year-old woman has been short of breath for the past 3 weeks. She now needs to sleep with four pillows rather than two and has swollen ankles by the end of the day. She uses a regular steroid inhaler for asthma but has never been in hospital for any reason. Which of the following is the most likely diagnosis?

- a. Acute exacerbation of asthma
- b. Angina
- c. Cardiac failure
- d. Pneumonia
- e. Pulmonary embolism

2. A 75 years old woman has noticed her ankles are swollen at the end of each day. She has also started to get short of breath after walking up several flights of stairs. Her HR 78bpm, BP=120/65mmHg. Which of the following medications would be appropriate to start?

- a. Furosemide 40 mg PO once daily
- b. Losartan 50 mg PO once daily
- c. Aspirin 75 mg PO once daily
- d. Digoxin 62.5mg PO once daily
- e. Verapamil 120 mg PO once daily



3. In a patient with severe cardiac failure and atrial fibrillation, which is the best therapeutic option.

- a. Calcium channel blockers
- b. Nitrates
- c. B-blockers
- d. ACE inhibitors
- e. Digoxin

4. One of the following conditions need to be excluded in a patient with cardiac failure and atrial fibrillation

- a. Cirrhosis
- b. Inflammatory bowel disease
- c. Parkinson's disease
- d. Cushing disease
- e. Thyrotoxicosis

5. In a patient with cardiac failure the following drugs improve long term prognosis except

- a. Diuretics
- b. ACE inhibitors
- c. ARBs
- d. Spironolactone
- e. Low dose B-blockers

7. A 73 year old woman has been short of breath for the past 3 weeks. She now needs to sleep with four pillows rather than two and has swollen ankles by the end of the day. She used a regular steroid inhaler for asthma but has never been in hospital for any reason. Which of the following is the most likely diagnosis?

- a. Acute exacerbation of asthma
- b. Angina
- c. Cardiac failure
- d. Pneumonia
- e. Pulmonary embolism

8. A 75 years old woman has noticed her ankles are swollen at the end of each day. She has also started to get short of breath after walking up several flights of stairs. HR=78 bpm, BP=120/65mmHg. Which of

the following medications would be appropriate to start?

- a. Furosemide 40 mg PO once daily
- b. Losartan 50 mg PO once daily
- c. Aspirin 75mg PO once daily
- d. Digoxin 62.5mg PO once daily
- e. Verapamil 120 mg PO once daily

8. Sudden death in myocardial infarction in most cases is due to

- a. Atrial fibrillation
- b. Ventricular fibrillation or asystole
- c. Cardiac failure
- d. Cardiogenic shock
- e. None of the above

### 3. HYPERTENSION

1. A 74-year-old woman has had a persistent dry cough for the last 3 months. Prior to this, she was diagnosed with hypertension and started on Lisinopril 4 mg PO once daily. Her BP=115/75 mmHg. Which of the following medications would be appropriate to start?

- a. Amlodipine 5 mg PO once daily
- b. Atenolol 25 mg PO once daily
- c. Diltiazem 60 mg PO three times a day
- d. Losartan 25 mg PO once daily
- e. Ramipril 2.5mg PO twice daily

2. A 32-year-old man returns to her physician for follow-up of hypertension that has been poorly controlled in spite of numerous antihypertensive medications. It is decided to evaluate the patient for possible "secondary" hypertension. Which of the following is a well-known cause of secondary hypertension?

- a. Ethnicity
- b. Obesity
- c. Renal artery stenosis
- d. Smoking
- e. Stress



3. A 53-year-old man is suffering from increasingly frequent bouts of chest pain. The pain has been provoked by exercise for the past 18 months. It is associated with shortness of breath and sweating, but passes as soon as he takes a moment to rest. He has stopped smoking and is currently taking aspirin 75mg once daily and atenolol 50 mg PO once daily. Which is the single most appropriate management?

- a. Amlodipine
- b. Bendroflumethiazide
- c. Losartan
- d. Ramipril
- e. Simvastatin

4. A 42 years old man has been asked to return to his family doctor having had elevated blood pressure readings on two previous occasions. His BP is 170/100 mmHg. Which of the following medications would be appropriate to start?

- a. Amlodipine 5 mg PO once daily
- b. Atenolol 25 mg PO once daily
- c. Diltiazem 60 mg PO three times a day
- d. Losartan 25 mg PO once daily
- e. Ramipril 2.5mg PO twice daily

5. A 66 year old man has his quarterly appointment with his family doctor. He has been taking an angiotensin-converting enzyme (ACE) inhibitor for just over a year and uses allopurinol for gout. His BP = 165/95 mmHg. Which of the following medications would be appropriate to start?

- a. Amlodipine 5 mg PO once daily
- b. Atenolol 25 mg PO once daily
- c. Diltiazem 60 mg PO three times a day
- d. Losartan 25 mg PO once daily
- e. Ramipril 2.5mg PO twice daily

6. A 32-year-old woman sees her family doctor after having a high blood pressure reading at a routine medical clinic. She is currently trying to get pregnant and is concerned what effects this or any medications could have on the baby. Her BP=170/90

mmHg. Which of the following medications would be appropriate to start?

- a. Amlodipine 5 mg PO once daily
- b. Atenolol 25 mg PO once daily
- c. Diltiazem 60 mg PO three times a day
- d. Losartan 25 mg PO once daily
- e. Ramipril 2.5mg PO twice daily

7. A 42 year old woman has type 2 diabetes mellitus and hypertension. She has recently been started on an antihypertensive medication and has noticed that her blood glucose control is not as good as it was before. Which of the following drugs is responsible for the symptoms of this patient?

- a. Amlodipine
- b. Valsartan
- c. Bendroflumethiazide
- d. Lisinopril
- e. Verapamil

8. A 64-year-old woman has always had cold hands and feet, even in summer. She has recently started an additional antihypertensive medication and has found that her cold peripheries are even worse than usual. Which of the following drugs is responsible for the symptoms of this patient?

- a. Amlodipine
- b. Atenolol
- c. Bendroflumethiazide
- d. Lisinopril
- e. Verapamil

9. A fifteen year old boy presents with a history of fever and arthritis. There is a past history of similar symptoms one year back. A diagnosis of rheumatic fever is made. The treatment of choice for this patient's symptoms is

- a. Aspirin
- b. iclofenac
- c. Ibuprofen
- d. Paracetamol
- e. Morphine



**4. CORONARY ARTERY DX**

1. A 50-year-old male came to the hospital with a complaint of occasional left sided chest pain that lasted <30 mins, following exercise, which relieves upon taking rest. What is the most probable diagnosis?
  - a. Unstable angina
  - b. Decubitus angina
  - c. Stable angina
  - d. Coronary spasm
  - e. Myocardial Infarction
2. A 45 years old manual worker presented with a 2 hours history of chest pain radiating to his left arm. His ECG is normal. What is the single most appropriate investigation?
  - a. Cardiac enzymes
  - b. CXR
  - c. CT scan
  - d. ECG
  - e. V/Q scan
3. An 84-year-old man has central chest pain that has gradually worsened over the last month. He finds it is made worse on exertion - especially climbing the stairs to his flat. He has type 2 diabetes and a hiatus hernia. T=37.1°C, HR=95 bpm, BP165/95mmHg. An ECG and a chest X-ray are both reported as normal. Which is the single most likely diagnosis?
  - a. Angina
  - b. Gastro-oesophageal reflux disease
  - c. Heart failure
  - d. Myocardial infarction
  - e. Esophageal spasm
4. A 71-year-old man has had a central chest pain radiating to his left arm for 1 hour. While an ECG is being recorded, some observations are carried out. T=37.1°C, HR 44 bpm, BP=110/65mmHg, RR=22/min. Which is the single most likely occluded coronary artery?
  - a. Left anterior descending artery
  - b. Left circumflex coronary artery
  - c. Left main coronary artery
  - d. Posterior descending artery
  - e. Right coronary artery
5. The junior doctor on-call receives a bleep from a nurse during a busy night shift. A 53 years old man with type 1 diabetes has had central chest pain over the last 10 minutes. He has been admitted electively under the general surgeons for a laparoscopic inguinal hernia repair. The nurse has already performed an ECG. Which single additional detail from the nurse should prompt an immediate review of the patient (i.e., within the next 5 min)?
  - a. Blood glucose 15.2mmol/L
  - b. He has vomited twice since the pain has started
  - c. His operation is tomorrow morning
  - d. HR 98 bpm
  - e. SaO2 96% on air
6. A 66 years old man presented with ON/OFF renostomal chest pain of 2 years. Each attack lasts for LESS THAN 5 minutes, triggered by stress/exertion and relieved by rest and nitroglycerine. He is diabetic for the last 22 years, Hypertensive for the last 20 years and a smoker for last 18 years. Examination and resting ECG normal. What is the most likely diagnosis?
  - a. Myocardial infarction
  - b. Unstable angina Prinzmetal angina
  - c. Stable angina
  - d. Acute coronary syndrome
7. In the diagnosis of myocardial infarction the most reliable test is
  - a. X-ray chest
  - b. D. dimer
  - c. CBC
  - d. Exercise performance test
  - e. Troponin I



8. In a patient presenting with ST segment elevation myocardial infarction, within two hours of onsets of symptoms which is the best treatment option

- a. Calcium channel blocks
- b. Beta blockers
- c. digoxin
- d. I/V streptokinase
- e. Tissue plasminogen activator (TPA)

9. In a patient presenting with non ST segment elevated MI, the following drugs are indicated except

- a. Streptokinase
- b. Nitrates
- c. B-blockers
- d. Heparin
- e. Aspirin

10. A 44 years old male, smoker works in private bank, married having 2 kids. He presented to causality with recurrent tachycardia/palpitations, this was his third visit to ER. His ECG done which is normal except slurred upstroke of R wave in QRS of chest leads. Echo and blood chemistry is normal. What is the long term treatment of choice?

- a. Amiodarone
- b. Aspirin
- c. Diltiazem
- d. Radiofrequency ablation
- e. Warfarin sodium

37. An 84 year old man has central chest pain that has gradually worsened over the last month. He finds that it is made worse on exertion-especially climbing the stairs to his flat. He has type 2 diabetes and a hiatus hernia. T=37.1°C, HR-95bpm, BP-165/95mmHg, An ECG and a chest X-ray are both reported as normal. Which is the single most likely diagnosis?

- a. Angina
- b. Gastro-oesophageal reflux disease
- c. Heart failure

- d. Myocardial infarction
- e. Oesophageal spasm

12. A 45 year old manual worker presented with a 2 hours history of chest pain radiating to his left arm. His ECG is normal. What is the single most appropriate investigation?

- a. Cardiac enzymes
- b. CXR
- c. CTscan
- d. ECG
- e. V/Qscan

13. A 50 year old man with diabetes mellitus suddenly develops persistent crushing central chest pain radiating to the neck with asymmetrical places. What is the single most appropriate diagnosis?

- a. Angina
- b. Costochondritis (Tietz's disease)
- c. Dissecting aneurysm
- d. Myocardial infarction
- e. Pulmonary embolism

14. The most common aortic malformation accompanying tetralogy of Fallot is

- a. right-sided aortic arch
- b. coarctation of the aorta
- c. congenital aortic stenosis
- d. bicuspid aortic valve
- e. aortic ectasia

15. An 84-year-old man has central chest pain that has gradually worsened over the last month. He finds it is made worse by exertion, especially climbing the stairs to his flat. He has type 2 diabetes and a hiatus hernia. T 37.1°C, HR 95 bpm, BP 165/95mmHg. An ECG and a chest X-ray are both reported as normal. Which is the single most likely diagnosis?

- a. Angina
- b. Gastro-oesophageal reflux disease
- c. Heart failure



- d. Myocardial infarction
- e. Esophageal spasm

16. A 68-year-old woman has had palpitations and felt short of breath for the last few months. She has rheumatoid arthritis and takes methotrexate. The doctor examining her detects an ejection systolic murmur. The is difficult to hear so he asks her to to carry out a manoeuvre to make it clearer. Which is the single most appropriate instruction to give to accentuate the murmur?

- a. Lean backwards in the couch
- b. Lean to your left side
- c. Squat down
- d. Take a deep breath in
- e. Try to breath out as if you were straining

17. A 32-year-old man has felt generally unwell for the last month or so. He sweats at night and has lost 3kg. He is otherwise fit and well but does confess to injecting illicit drugs. T=38.1°C, HR=100 bpm, BP=105/0mmHg. There is a pansystolic murmur loudest at the left sternal edge. Which single investigation is most likely to support the diagnosis?

- a. Arterial blood gas
- b. Creatine kinase
- c. Sputum sample
- d. Urea and electrolytes
- e. Urinalysis

#### 5. VALVULAR HEART DX

1. The following is the character of the pulse in

Aortic Regurgitation

- a. Slow rising pulse
- b. Pulsus alternans
- c. Pulsus paradoxus
- d. Collapsing pulse
- e. Pulsus bisferiens

2. Which of the following is the character of pulse in Aortic stenosis

- a. Collapsing
- b. Slow rising
- c. Alternans
- d. Paradoxus
- e. Disferians

3. A 77 year old woman has felt intermittently dizzy for the last 6 months. She has not fallen but has felt if she might faint, especially when exerting herself. She has an ejection systolic murmur. Which single description of her pulse is most likely to support the diagnosis?

- a. Collapsing
- b. Irregularly irregular
- c. Jerky
- d. Slow-rising
- e. Thready

4. A 40-years-old man has had a transmural myocardial infarction 3 days ago. He suddenly develops acute vatlieuness. He has developed a new pan systolic murmur and his chest X-ray reveals florid pulmonary edema. What is the most likely cause of this complication?

- a. Pneumonia
- b. A fresh myocardial Infarction
- c. Acute mitral incompetence due to papillary muscle rupture
- d. Pulmonary embolism
- e. Ventricular fibrillation

5. A 42-year-old woman has type 2 diabetes mellitus and hypertension. She has recently been started on a new antihypertensive medication and has noticed that her blood glucose control is not as good as it was before. Which of the following drugs is responsible for the symptoms of this patient?

- a. Amlodipine
- b. Atenolol
- c. Thiazide diuretics
- d. Lisinopril
- e. Verapamil

6. In a young boy with hypertension, examination of the cardiovascular system reveals radio-femoral delay. The most likely cause of hypertension in this patient is

- a. Coarctation of aorta
- b. Diabetic nephropathy
- c. Conn's syndrome
- d. Dissection of aorta
- e. Renal artery stenosis



7. Four weeks after having a prosthetic heart valve a patient develops infective endocarditis. What is most likely a causative organism?

- a. Streptococcus viridans
- b. Staphylococcus epidermidis
- c. Streptococcus pneumoniae
- d. Streptococcus bovis
- e. One of the HACEK group

8. A brisk peripheral pulse is expected with each of the following EXCEPT

- a. Thyrotoxicosis
- b. Mitral stenosis
- c. Mitral regurgitation
- d. Cardiac beriberi
- e. Aortic insufficiency

9. Each of the following pathophysiologic processes causes an increased loudness of the first heart sound EXCEPT

- a. Thyrotoxicosis
- b. Mitral stenosis
- c. Sinus tachycardia
- d. Acute aortic insufficiency
- e. Atrial septal defect

10. Which of the following auscultatory findings of mitral stenosis is the most suggestive of severe disease?

- a. The presence of an S3
- b. A loud opening snap
- c. A diminished P
- d. A short A-opening snap interval
- e. None of the above

11. Classic echocardiographic findings in patients with mitral stenosis include each of the following EXCEPT

- a. left atrial enlargement
- b. Increased echogenicity of the mitral valve
- c. decrease in the E to F slope of the mitral valve
- d. prominent A wave of the mitral valve
- e. Mitral valve leaflet tethering

12. Prudent medical therapy for a completely asymptomatic 37-year-old housewife with no children at home who has mitral stenosis and atrial fibrillation would include each of the following EXCEPT

- a. careful follow-up during any pregnancy
- b. endocarditis prophylaxis for dental procedures
- c. control of the ventricular response rate during atrial fibrillation
- d. prophylactic anticoagulation
- e. prophylaxis for rheumatic fever

13. A 53-year-old man is suffering from increasingly frequent bouts of chest pain. The pain has been provoked by exercise for the past 18 months. It is associated with shortness of breath and sweating, but passes as soon as he takes a moment to rest. He has stopped smoking and is currently taking aspirin 75mg PO once daily and atenolol 50 mg PO once daily. Which is the single most appropriate management?

- a. Amlodipine
- b. endroflumethiazide
- c. Losartan
- d. Ramipril
- e. Simvastatin

14. A 20-year-old woman has had palpitations for 1h. She has had similar episodes before but they have never lasted this long. An ECG shows a regular rhythm of 160 bpm with inverted P waves in leads II, III, and aVF, and narrow QRS complexes. Although vagst manoeuvres do not work, after adenosine 6 mg IV, normal sinus rhythm at 90 bpm is restored. Which is the single most likely origin of her tachycardia?

- a. Atrium
- b. Atrioventricular (AV) node
- c. Bundle of His
- d. Sinostrial (SA) node
- e. Ventricle



**6. CARDIAC ARRHYTHMIAS**

- The cannon 'a' wave in the JVP is formed by
  - Ventricular contractions
  - Ventricular filling
  - Atrial filling
  - Atrial Fibrillation
  - Complete heart block
- In complete heart block which of the following therapeutic intervention is immediately required
  - IV Edemocine
  - IV Verapamil
  - IV Digoxin
  - Cardiac pacing
  - D/C Cardioversion
- In atrial fibrillation which of the JVP waves would be absent?
 

a. a      b. c      c. v      d. x      e. y
- A 75 years old lady bum Kastani presented to OPD with complaints of chest discomfort on exertion. In the past, she had anterior wall myocardial infarction 4 months back. Blood chemistry and investigations are normal except she has left ventricular impairment (ejection fraction 33%, normal >55%) on echocardiography. She is taking thiazide diuretics, aspirin, simvastatin and bisoprolol. Which of the following drugs will you add next?
  - Ramipril
  - Nicorandil
  - Nifedipine
  - Propranolol
- A 45 years old female with a known history of systemic scleroderma presents for annual review to the OPD. Which one of the following symptoms is most characteristic in patients who have developed pulmonary arterial hypertension?
  - Exertional dyspnea
  - Paroxysmal nocturnal dyspnea
  - Cough
  - Barely morning dyspnea
  - Orthopnea

**8. MIX**

- A 65 years old man who has a long history of hypertension presents to the emergency department with searing chest pain that radiates to the back. An electrocardiogram is normal, as are cardiac enzymes. A "stat" chest radiograph demonstrates widening of the mediastinum. Which of the following is the most likely?
  - Arteriovenous fistula
  - Atherosclerotic aneurysm
  - Berry aneurysm
  - Dissecting aneurysm
  - Syphilitic aneurysm
- A 60 years old patient who has had a Myocardial infarction a week back presents with dyspnea and pericardial rub. ECG shows ST elevation. CXR: loss of margin at costovertebral angle. What is the single most likely cause?
  - Cardiac tamponade
  - Mitral regurgitation
  - Dressler's syndrome
  - Atrial fibrillation
  - Emboli
- An elderly patient presents with chest-pain which is worse on lying down. He is febrile and the ECG reveals diffuse ST segment elevation through the chest leads. What is the most likely diagnosis?
  - Angina
  - Acute myocardial infarction
  - Pulmonary infarction
  - Pericarditis
  - Aortic dissection
- A CVP line is inserted for fluid resuscitation of a patient with left ventricular failure and acute renal failure. Which single X-ray finding is most likely to confirm correct placement of the line?
  - Both ends of the line can be seen
  - The line is lying lateral to the upper thoracic transverse processes
  - The line tip is between the first and third subcostal joints
  - The line tip is in the midline above the level of the clavicles
  - There is no obvious intra-pleural air



5. The following cardiac drugs are correctly paired with their corresponding indications for use EXCEPT

- Amiodarone-hemodynamically stable ventricular tachycardia
- Lignocaine-first line drugs for refractory ventricular fibrillation
- Magnesium sulphate-torsades de pointes
- Adenosine-paroxysmal supraventricular tachycardia
- Verapamil-supraventricular tachycardia

6. A 35 years old female presents with a deep vein thrombosis two weeks after delivery of a healthy baby. While in casualty, she develops a left hemiparesis. What underlying cardiac abnormality is most likely to be responsible

- Primum ASD
- Secundum ASD
- Patent foramen ovale
- VSD
- Patent ductus arteriosus

7. A 28 years old shipyard worker was admitted for pain in calf while at work, which has been increasing over the last three months. There is no history of hypertension or diabetes mellitus, but he is a smoker. Examination reveals loss of posterior tibial and dorsalis pedis pulsation along with a non healing ulcer at the base of the right first MCP joint. What is the most probable diagnosis?

- DVT
- Baker's cyst
- Thromboangitis Oblitans
- Embolus
- Sciatica

8. The absolute contraindication to thrombolytics therapy is

- INR >2.5
- Recent head trauma
- Suspected aortic dissection
- Known bleeding disorder
- Pregnancy

9. In the following signs/symptoms which is the most reliable for a diagnosis of Rheumatic fever

- Small joint arthritis
- Rashes
- Tachycardia
- Cardiac murmurs
- Backache

10. Which is the best therapeutic option in Pericardial Tamponade

- Oxygen
- IV diuretics
- Pericardiocentesis
- Digoxin
- B-blockers

### ANSWER KEYS

#### 1. SUPRAVENTRICULAR TACHYCARDIA

- |     |     |     |
|-----|-----|-----|
| 1.B | 2.E | 3.B |
|-----|-----|-----|

#### 2. CARDIAC FAILURE

- |     |     |     |     |
|-----|-----|-----|-----|
| 1.C | 2.A | 3.E | 4.E |
| 5.A | 6.C | 7.A | 8.D |

#### 3. HYPERTENSION

- |     |     |     |     |      |
|-----|-----|-----|-----|------|
| 1.D | 2.C | 3.A | 4.E | 5.A  |
| 6.B | 7.C | 8.C | 9.B | 10.D |

#### 4. CORONARY DISEASE

- |      |      |      |      |      |      |
|------|------|------|------|------|------|
| 1.C  | 2.A  | 3.A  | 4.E  | 5.B  | 6.D  |
| 7.E  | 8.E  | 9.A  | 10.B | 11.A | 12.A |
| 13.D | 14.B | 15.A | 16.A | 17.E |      |

#### 5. VALVULAR HEART DISEASE

- |      |      |      |      |      |
|------|------|------|------|------|
| 1.D  | 2.B  | 3.D  | 4.C  | 5.D  |
| 6.B  | 7.E  | 8.D  | 9.B  | 10.D |
| 11.D | 12.D | 13.E | 14.C |      |

#### 6. CARDIAC ARYTHMIAS

- |     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 1.E | 2.D | 3.A | 4.B | 5.B |
|-----|-----|-----|-----|-----|

#### 7. MIX

- |     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 1.D | 2.C | 3.D | 4.C | 5.B |
| 6.  | 7.A | 8.C | 9.D |     |