

Tanta University

Cardiology Diploma Degree (Policy 2013)

Faculty of Medicine

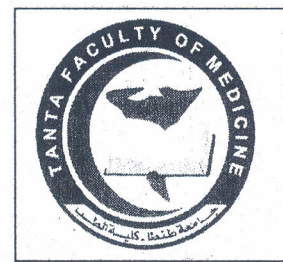
Number of Questions: 32 , 5 pages (Total 180 Marks)

Department of Cardiology

Time Allowed : 3 Hours

April 27th , 2021

Final Exam, Second Paper



First: Short Questions (Each Question 15 marks):

1. Scheme of management of dyslipidemia in patients with chronic kidney disease.
2. Scheme of both acute and chronic therapies of focal atrial tachycardia.
3. Risk factors for bleeding with oral anticoagulants.
4. Scheme of management of atrial septal defect.
5. Scheme of diagnostic approach to resistant hypertension.
6. Diagnostic features of constrictive pericarditis.

Second: Ultrashort Questions (Each Question 6 marks):

1. Enumerate initial evaluation of the patients with supraventricular tachycardia.
2. Scheme of clinical evaluation and recommendations for sports participation in individuals with established coronary artery disease.
3. Risk reduction strategies in patients with cyanotic congenital heart diseases.
4. Enumerate congenital heart diseases in adults.
5. Enumerate the cardiovascular diseases that are contraindicated with pregnancy.
6. Enumerate lines of management of reflex syncope.
7. Enumerate cardiovascular manifestations of acromegaly.
8. Enumerate benign tumors of the heart.
9. Enumerate measures to prevent contrast induced nephropathy.
10. Enumerate hypertension mediated organ damage.

Third: MCQ (Each Question 1 marks):

1. Which of the following features would not be expected in a patient with severe tetralogy of Fallot?
 - A. A soft or absent P2.
 - B. A right ventricular lift.
 - C. A parasternal systolic murmur .
 - D. Central cyanosis.

2. All are compelling contraindication to ACE inhibitors EXCEPT:
 - A. ESRD on dialysis.
 - B. Pregnancy.
 - C. Bilateral renal artery stenosis.
 - D. Hyperkalemia.

3. In elderly patients; secondary hypertension frequently occurs due to:
 - A. Coarctation of aorta.
 - B. Secondary hyperaldosteronism.
 - C. Secondary renal artery stenosis.
 - D. Primary hyperaldosteronism.

4. Which one of the following is a primary malignant tumor of the heart?
 - A. Papillary fibroelastoma.
 - B. Primary Lymphoma.
 - C. Primary Fibroma.
 - D. Primary Lipoma.

5. The most common clinical manifestation of penetrating injury of the heart is:
 - A. A-V Fistula.
 - B. Heart Failure.
 - C. Cardiac Tamponade.
 - D. Intra-cardiac Shunts.

6. Which one of the following interventions is the most important for successful resuscitation of an adult patient presented with out of hospital cardiac arrest?
 - A. Early (DC) shock.
 - B. IV epinephrine
 - C. IV amiodarone.
 - D. Early intubation.

7. In current regulations, which of the following drug is absolutely contraindicated in pregnancy?

- A. Metoprolol.
- B. Simvastatin.
- C. Aspirin.
- D. Amlodipine.
- E. propranolol.

8. What is the best imaging modality for below knee lower extremities arterial disease [LEAD]?

- A-Computerized tomography angiography
- B- Magnetic resonance imaging angiography
- C- Digital subtraction angiography
- D- Duplex ultrasonic scanning

9. In patients with atrial fibrillation ; ECG is needed for the following indications EXCEPT

- A-Change in symptoms or new symptoms
- B-Monitoring of drug effects on ventricular rate
- C- Monitoring of antiarrhythmic drug effects
- D- Monitoring catheter ablation for rhythm control
- E-None of the above

10. One of the following is the most common cause of orthostatic hypotension in the elderly.

- A-Diuretic therapy.
- B-Bleeding peptic ulcer
- C-Parkinsonism
- D-Amyloidosis

Fourth: Problem Solving MCQ (20 marks):

First Problem (10 marks):

A 60-year-old man known to be hypertensive and was on atenolol 50mg plus hydrochlorothiazide 12.5mg once daily and presents with SOB. He has LVH with strain on the ECG. On examination ;BP is 210/100 mmHg and HR=100 /min regular.

1. What is the next step?

(4 Marks)

- A. IV diuresis aiming for a reduction of mean arterial pressure ~25% at 30 minutes.
- B. IV diuresis + nitroprusside, aiming for a reduction of mean arterial pressure ~25% at 30 minutes.
- C. IV diuresis + nicardipine, aiming for a reduction of mean arterial pressure ~25% at 30 minutes.
- D. IV diuresis + IV nitroglycerin for reduction of mean arterial pressure over hours.

2. Regarding hydrochlorothiazide, which statement is incorrect? (3 Marks)

- A. For better BP control and fewer metabolic effects, it is best to combine thiazide with amiloride or triamterene.
- B. Potassium and creatinine need to be checked 1 week after therapy initiation.
- C. A 12.5 mg dose of HCTZ is usually an effective starting dose.
- D. Thiazide diuretic is initially effective through volume reduction but is later effective through the reduction of vascular resistance.

3. Regarding beta blockers therapy[atenolol] compared to the other antihypertensive groups of drugs, which statement is incorrect? (3 Marks)

- A. Is associated with more LVH reverting effect than losartan.
- B. Is associated with less central aortic pressure reduction.
- C. Is associated with a higher risk of stroke and mortality.
- D. Is associated with more reduction of the heart rate.

Second Problem (10 marks):

A 69-year-old man is diagnosed with frequent recurrent, symptomatic paroxysmal AF. He has HTN and diabetes. He has a history of CAD and underwent PCI 3 years previously. He has CKD (creatinine 1.4 mg/dl, GFR 48 ml/min/1.73 m²). Echo shows normal EF, LA enlargement (4.3 cm), and mild LVH (septum 12 mm). He has a history of bleeding peptic ulcer 2 months ago, requiring transfusion. His baseline heart rate is 72 bpm. He received diltiazem (240 mg QD) and aspirin 81 mg OD.

1. What is the next option? (4 marks)

- A. Add flecainide .
- B. Add dronedarone.
- C. Add amiodarone.
- D. Add sotalol.
- E. AF ablation.

2. Should this patient receive anticoagulation? (3 marks)

- A. Anticoagulation should be avoided.
- B. Anticoagulation should be started despite bleeding risk.
- C. Use dual antiplatelet therapy instead of anticoagulation .
- D. Stop aspirin and add anticoagulation +PPI

3. If planned for anticoagulation; which anticoagulant should he receive? (3 marks)

- A. Dabigatran.
- B. Rivaroxaban.
- C. Apixaban.
- D. Warfarin.

Good luck

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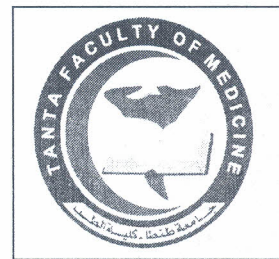
Number of Questions: 29 (Total 180 Marks), 5 pages

Department of Cardiology

Time Allowed : 3 Hours

APRIL20th 2021

Final Exam, First Paper



First: Short Questions (Each Question 10 marks):

- 1-Management of left sided prosthetic mechanical valve obstruction .
- 2-Management of diuretic resistance in heart failure patients.
- 3-Management of stable chest pain in patients without known coronary artery disease
- 4-Enumerate causes of acute aortic syndrome and mention management of ascending aortic dissection
- 5- Mention antiplatelet drugs used during PCI , mechanism of action , loading dose and maintenance dose.
- 6-Management of tricuspid valve incompetence.

Second: Ultrashort Questions (Each Question 6 marks):

1. Cardiac biomarkers in COVID-19.
2. Enumerate the differential diagnosis of acute coronary syndromes in the setting of acute chest pain.
3. Role of coronary angiography to diagnose coronary artery disease in patients with valvular heart diseases.
4. Prognostic criteria of heart failure.
5. Enumerate indications of transesophageal echocardiography in infective endocarditis.
6. Scheme of management of severe chronic aortic regurge.
7. Enumerate high risk criteria for sudden cardiac death in patients with hypertrophic cardiomyopathy.
8. Enumerate clinical risks in cardiac patients going for non-cardiac surgery.
9. Echocardiographic diagnosis of pulmonary hypertension.
10. Enumerate major and minor criteria of rheumatic fever.

Third: MCQ (Each Question 3 marks):

- 1- One of the following can predict an increased risk of cardiac events after major non-cardiac surgery in patients >40 years of age.
 - A. Presence of an S3 gallop.
 - B. Active cigarette smoking.
 - C. Serum haemoglobin = 12 gm/dL.
 - D. Mitral stenosis; MVA=2.0 cm².
 - E. Controlled Hypertension by drugs.

2. A 71-year-old man who had a Bioprosthetic aortic valve replacement three years ago is coming for follow up. What antithrombotic therapy is he likely to be taking?
 - A. Nothing.
 - B. Aspirin.
 - C. Warfarin
 - D. Dabigatran.
 - D. Apixaban

3. Which valve disease is mostly associated with aortic dissection?
 - A. Aortic valve disease.
 - B. Mitral valve disease.
 - C. Tricuspid valve disease.
 - D. Pulmonary valve disease.

4. All of the following drugs are useful in the treatment of HCM EXCEPT:
 - A. Metoprolol.
 - B. Disopyramide.
 - C. Enalapril.
 - D. Diltiazem.
 - E. Torsemide.

5. All of the following neurohormones are associated with vasoconstriction, cell growth, hypertrophy, and sodium retention except:
 - A. Angiotensin-II (Ang-II).
 - B. Norepinephrine.
 - C. Angiotensinogen
 - D. Endothelial nitric oxide.
 - E. Arginine vasopressin.

6. The inability to exercise properly in heart failure is due to all of the following EXCEPT:

- A. Reduced ejection fraction .
- B. Skeletal muscle atrophy.
- C. Endothelial dysfunction .
- D. Reduced stroke volume.

7. One of the following is an indication for IE prophylaxis in a patient undergoing sclerotherapy for esophageal varices.

- A- Severe mitral stenosis.
- B- Isolated secundum ASD.
- C- Previous CABG surgery.
- D- Previous bacterial endocarditis.
- E- Cardiac pacemaker insertion .

8. A CT Pulmonary Angiography has the following strength to diagnose Acute Pulmonary Embolism[PE] EXCEPT:

- A. Readily available around the clock in most centres.
- B. It shows excellent accuracy.
- C. Strong validation in prospective studies.
- D. Low rate of inconclusive results (1-2%).
- E. May provide alternative diagnosis if PE excluded.

9. All are mechanical complications of myocardial infarction EXCEPT:

- A. Mitral regurgitation.
- B. Acute pericarditis ..
- C. Rupture of free wall.
- D. Ventricular septal defect

10. Which of the following statements concerning the echocardiographic evaluation of aortic stenosis is TRUE?

- A. The peak-to-peak gradient measured at cardiac catheterization routinely exceeds the peak instantaneous aortic valve pressure gradient assessed by Doppler echocardiography
- B. Patients with impaired left ventricular function may have severe aortic stenosis, as determined by the continuity equation, despite a peak outflow velocity of only 2 to 3 m/s
- C. Among Doppler techniques, the most accurate transaortic valve flow velocity in aortic stenosis is measured by pulsed-wave Doppler imaging
- D. The greatest degree of error in the calculation of aortic valve area using the continuity equation resides in inaccurate measurement of the transaortic valve flow velocity
- E. The mean aortic valve gradient measured by Doppler echocardiography is typically higher than the mean gradient measured by cardiac catheterization

Fourth: Problem Solving MCQ (Total 30 marks):

First Problem (10 marks):

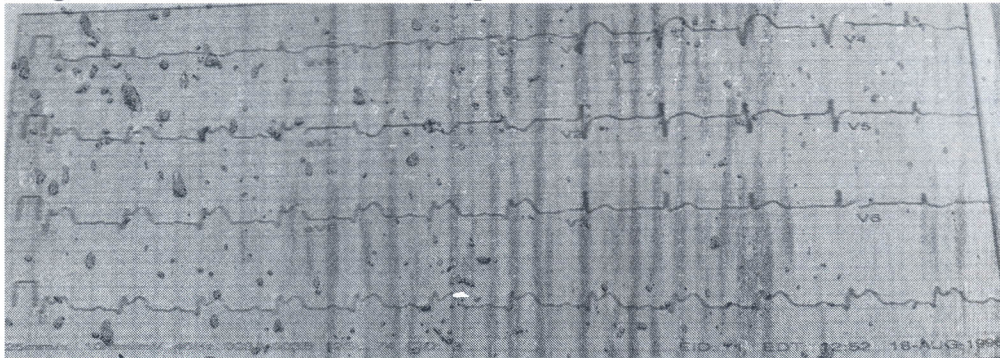
A 75 years old diabetic , not hypertensive male patient presents with heart failure and diagnosed with severe mitral stenosis and atrial fibrillation.

1. NOACs for stroke prevention:

- A. Is recommended.
- B. Should be considered.
- C. May be considered.
- D. Is not recommended.

Second Problem (10 marks):

A 58-year-old man was admitted to the CCU from the ER. His BP was 85/50. The jugular veins were distended to 10 cm at 30-degree elevation, he shows clear lungs and audible heart sounds. The 12-lead ECG is shown.



2. Which statement of the following would be your initial treatment?

- A. Start pericardiocentesis.
- B. Intra-aortic balloon pumping.
- C. Hemodynamic monitoring.
- D. Start rapid IV infusion of fluid.
- E. Start nitroglycerin infusion.

Third Problem (10 marks):

A 70-year-old man presents with the sudden onset of tearing chest pain. On presentation, his heart rate 130 beats/min with a systolic blood pressure of 80 mmHg. A bedside echocardiography (TTE) demonstrates the presence of a proximal aortic dissection. A pericardial effusion with partial diastolic collapse of the right ventricle is also present. Significant respiratory variation is noted across mitral and tricuspid Doppler inflows.

3. The best approach will be :

- A. Immediate percutaneous pericardiocentesis to relieve the tamponade.
- B. To proceed immediately to the operating room for correction.
- C. Intra-operative transesophageal echocardiography [TTE] during surgery.
- D. Intra-aortic balloon pump to stabilize the hemodynamics, followed by surgery.

Good luck