

## Anatomy and Embryology

- 1- Last event in the conversion of the foetal circulation to the adult circulation with its cause – closure of the ductus arteriosus due to the increase in pulmonary oxygen tension
  - 2- What happens in vasoconstriction – decreased venous volume and increased arterial volume
  - 3- A tumor in the thoracic part of the esophagus will compress – the left atrium
  - 4- A new born with transposition of the great vessels, most likely other heart abnormality – ventricular septal defect
  - 5- Wrong about the apex of the heart – cannot be felt because it is covered with the left lung
- ## Pathology

- 6- Wrong combination – atheroma/oxidized omega-3 fatty acids
- 7- Wrong combination – Wegener's granulomatosis/ anti-endothelial antibodies
- 8- Up to 50% of all MI are due to occlusion of – left anterior descending artery
- 9- Wrong combination – post-MI pericarditis/Staph aureus infection
- 10- Not an organ that can have a white infarct – brain (mostly)
- 11- Most common congenital valvular lesion – bicuspid aortic valve
- 12- Wrong combination – Aschoff bodies/acute phase of infective endocarditis
- 13- Correct about edema – pulmonary tissue is the most common site (mostly)
- 14- Doesn't cause edema due to high hydrostatic pressure – nephrotic syndrome

## Virology

- 15- A heart disease caused by Filovirus – Ebola hemorrhagic fever
- 16- Most common viral cause of myocarditis – Coxsackievirus B

## PBL

- 17- Not a consequence of ruptured atheromatous plaque – chronic stable angina
- 18- A patient with blood pressure of 145/105 their stage of hypertension is – 2
- 19- Not a complication of MI – acute aortic regurgitation
- 20- Not an indication of CABG surgery – two occluded arteries with patent LAD (most likely)
- 21- Wrong about CABG – left internal mammary artery is used to replace the left circumflex artery
- 22- Not a case of secondary HT – a 30-year old obese man with familial history of HT

## Physiology

- 23- True statement – diastolic murmurs/aortic regurgitation
- 24- Causes a very high A wave of the jugular pulse – tricuspid stenosis
- 25- A case that increases venous return – anemia
- 26- Highest flow with the same length – pressure (25mmHG) radius (4) viscosity (4)
- 27- True about left coronary arteries – norepinephrine causes increased flow in the coronary artery (mostly)
- 28- Cardiac output is 5600ml/min  $ESV = 70\text{ml}$   $HR = 80/\text{min}$ , true about this – EF is 50%
- 29- Cardiac output is 10L/min, PAWP = something, Capillary pressure = something, Radial mean arterial pressure = 84mmHG, CVP = 14mmHG, find TPR – 7L/min/mmHG
- 30- A patient with hemorrhage and hypovolemia, only thing not high – ANP
- 31- A woman increased her Na intake by 200% for 2 months, thing decreased – plasma renin
- 32- A tie was stretched around the neck proximal to the carotid bifurcation, true about subsequent baroreceptor response – decreased firing, increased HR, increased TPR
- 33- Increased right atrial pressure will lead to – increased sodium loss

- 34- True about pulmonary circulation – mean arterial pressure in it is one 6th that in the systemic circulation
- 35- Smallest pressure difference during ventricular ejection is between – aorta and left ventricle
- 36- Values that can cause stimulation of peripheral chemoreceptors – low O<sub>2</sub> high CO<sub>2</sub> low pH
- 37- L increases its volume with 10ml with the change in pressure of 10mmHG and an original volume of 100ml. S increase the volume by 0.1ml with the same pressure change at an original volume of 1ml, true about L and S – compliance of L > S and distensibility is equal
- 38- An old man with pressure of 180/100, a probable cause of his high pulse pressure is – decreased arterial compliance
- 39- Increased tone of arteries and resistance vessels can be due to - increased endothelin
- Pharmacology
- 40- A beta-blocker useful in hypertension with peripheral vascular disease – Acebutolol (maybe)
- 41- A drug that has the ability to increase renal blood flow – Methyldopa
- 42- A drug that can cause angioedema in some patients – Lisinopril
- 43- A drug that is prescribed for diabetic patients even those who don't have HT – Lisinopril
- 44- A drug that would be very dangerous to be used in vasospasm of coronary artery – Propranolol
- 45- A drug particularly useful in hypertensive emergency with tachycardia – Esmolol
- 46- Least effective drugs in the treatment of CHF – Calcium-channel blockers
- 47- A drug that causes headache, flushing, and ankle edema – Nifedipine
- 48- True about antiarrhythmic drugs – many of them act by changing unidirectional block into bidirectional block (maybe)
- 49- What digitalis toxicity would be inhibited by atropine – increased PR interval
- 50- True about the mechanism of digitalis – increases systolic cytoplasmic calcium concentration
- 51- A drug that is not useful in ventricular tachycardia – digoxin
- 52- A drug that causes the coronary steal phenomenon – Dipyridamole
- 53- The most appropriate drug for severe acute heart failure with peripheral edema – Furosemide
- 54- True statement – low doses of thiazide have the same antihypertensive effect as high doses of it
- 55- A patient using an antiarrhythmic drug that suffered hypothyroidism and increased TSH levels might be using – Amiodarone
- 56- In acute episodes of angina, sublingual dose of nitroglycerin is used to relieve the pain – to ensure complete and rapid bioavailability
- 57- Main action of nitroglycerin in the treatment of CHF – reduction of venous pressure
- 58- The main mechanism of Statins in the treatment of hyperlipidemia – reduced LDL-C
- 59- A drug that doesn't cause muscle pain as a side effect – Cholestyramine
- Practical
- 1- A CT scan – What is true – Both (ascending aorta supplies blood to the heart muscle and descending aorta supplies little blood to the lungs)
- 2- A CT scan – What is true – 1 is the pulmonary trunk and its right branch (the wrong is that we see the beginning and the termination of the arch of aorta at this level)

- 3- A CT scan – What is true – Both (increase in the right atrial pressure decreases the venous return to it and the left ventricle receives more blood during diastole)
- 4- A CT scan – What is wrong – in a large ventricular septal defect, blood flow to the ascending aort increases
- 5- A picture of the open right ventricle pointing at the anterior papillary muscle – What is true – all (attached by chordae tendinae to two cusps and its rupture can cause acute heart failure)
- 6- A picture of the internal jugular vein – Which causes increase in blood inside it – both (right heart failure and tricuspid regurgitation)
- 7- A picture of the open right atrium pointing at fossa ovalis – What is true – none (floor is made from septum secundum and upper margin from septum primum)
- 8- A picture of the open right atrium pointing at crista terminalis – What is true – all (in the embryo it separates the right atrium from the right horn of sinus venosus and at its upper end the SA node is found)
- 9- A picture of the open left ventricle pointing at the membranous part of the interventricular septum – What is true – none (it is closed after birth and is related to the AV node)
- 10- A picture of the mediastinum pointing at the ligamentum arteriosum – What is true – if it was left patent the pressure inside the arch of aorta and pulmonary artery would be equal (it is attached to the middle of the arch and to the pulmonary trunk)
- 11- A picture of the coronary vessels in an X-ray from the left side pointing at the anterior interventricular branch of the left coronary artery – What is true – both
- 12- A section of a vessel media – Which is found in this vessel – all (smooth muscle, collagen and elastic fibers)
- 13- A picture of the myocardium – What is true – none (each muscle fiber is one cell and the branching helps distribute the action potential)
- 14- A picture of the auscultatory areas of the heart valves – From which is the blood flowing from the left ventricle – 2 (the right second intercostal space)
- 15- An ECG with prolonged PR interval and a heart rate of about 37.5/min – What is the condition – complete AV block
- 16- An ECG with positive QRS wave in lead I and negative in aVF – What is the condition – left axis deviation
- 17- An ECG with elevated ST segment – What is the condition – Myocardial ischemia
- 18- What is the auscultatory area of the aortic valve – second right intercostal space
- 19- An ECG with RR interval of exactly 5 large squares – What is the heart rate – 60/min
- 20- A picture of an the open abdominal aorta, enlarged with a thrombus – What is wrong – Most likely the lines of Zahn are absent