CVS Midterm 2012/2013

Pathology

1. All of the following matches regarding thrombosis are correct EXCEPT:

(a) Endothelial cell Injury : arterial thrombi
(b) Stasis : venous thrombi
(c) The propagating part: the adherent part of the thrombus
(d) Hypercoagulability: immobilization (bed-rest)
(e) Recanalization : can establish some degree of blood flow

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2. All of the following are associated with stasis EXCEPT:

(a) Disrupts normal blood flow
(b) Mostly causes venous thrombi
(c) Allows the dilution of activated clotting factors
(d) Prevents the inflow of clotting factor inhibitors
(e) Promotes endothelial cell injury

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3. The most common cause of pulmonary thromboembolism:

(a) Thromboembolism
(b) Fat embolism
(c) Air embolism
(d) Nitrogen embolism
(e) Cholesterol embolism

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4. All of the following regarding pulmonary thromboembolism are true EXCEPT:

(a) Arises in most of the cases from deep vein thrombosis of the lower limb
(b) Organization is seen in most of the cases.
(c) Saddle embolus is an embolus that occurs in the arch of the aorta
(d) Pulmonary hemorrhage occurs when medium sized arteries are obstructed
(e) Paradoxical embolus can pass into the systemic circulation due to ventricular septal defect

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5. The major target of systemic thromboembolism is:

(a) Brain
(b) Lower limbs
(c) Intestine
(d) Kidney
(e) Spleen

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6. Varicose veins are associated with all of the following EXCEPT:

(a) Superficial veins of the upper limb
(b) Increase in intra-luminal pressure
(c) Venous wall thinning and loss of support
(d) Chronic varicose ulcers
(e) Congestion and swelling

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7. All are true regarding Mönckeberg medial calcific sclerosis EXCEPT:

(a) Affects muscular arteries
(b) Occurs mostly in children
(c) Radiologically visible on x-ray
(d) Doesn't encroach on the vessel lumen
(e) Not significant

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8. All are true regarding atherosclerosis EXCEPT:

(a) Consists of a soft necrotic center surrounded by a white fibrous cap
(b) Due to formation of an atheromatous plaque in the vessel's intima
(c) Hyperlipidemia is a major non-modifiable risk factor
(d) The lower abdominal aorta is mostly affected
(e) Premenopausal women are protected more than their counterpart aged men

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9. Regarding abdominal aortic aneurysm, all are correct EXCEPT:

(a) Occurs mostly in men and above 50 years of age
(b) Marfan syndrome is one of its causes
(c) Bacteremia from Salmonella gastroenteritis could be one of the causes
(d) Occurs at the infra-renal level of the abdominal aorta
(e) Syphilitic aneurysms are the most common cause nowadays

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10. The most common cause of aortic dissections is:

(a) Hypertension
(b) Connective tissue disorders
(c) Hypotension
(d) Hypercholesterolemia
(e) Obesity

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11. All of the following regarding hypertensive vascular disease are true EXCEPT:

(a) Benign hypertension constitutes almost 95% of the cases
(b) Renal disease is the most common cause of secondary hypertension
(c) Hyperplastic arteriolosclerosis is associated with severe hypertension
(d) Hyaline arteriolosclerosis can occur in people with diabetes milletus
(e) Malignant hypertension is associated with 50% of the cases

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12. All of the following are true concerning vasculitis EXCEPT:

(a) Kawasaki disease mostly affects infants and children
(b) Wegener's granulomatosis is associated with c-ANCA
(c) Giant cell arteritis is a common cause of myocardial infarction
(d) Takayasu arteritis is also known as the pulseless disease
(e) Churg-Strauss syndrome is associated with eosinophilia

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13. All of the following regarding ischemic heart disease are correct EXCEPT:

(a) Associated with a severe substernal pain that can radiate to the left arm
(b) Variant angina is associated with coronary artery vasospasm
(c) Stable angina is also known as pre-infarction angina
(d) Chronic ischemic heart disease is usually associated with arrhythmias
(e) Typical angina can be relieved by rest and nitroglycerin

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14. Regarding myocardial infarction, all are correct EXCEPT:

(a) Most cases of pre-hospital deaths are due to lethal arrhythmias
(b) Troponin I and T are the best indicators for MI
(c) 40-50% of cases are due to occlusion of the circumflex artery
(d) Coagulative necrosis and wavy fibers are seen within 24 hours of injury
(e) Most cases of in-hospital deaths are due cardiogenic shock

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15. All of the following regarding rheumatic heart fever are correct EXCEPT:

(a) Aschoff bodies can be seen in acute rheumatic heart disease
(b) Chronic form of rheumatic heart fever is associated with stenosis
(c) Can affect the pericardium, myocardium or endocardium (including valves)
(d) It's the most important cause of acquired post-inflammatory scarring of the valves
(e) It's an infection due to group A – β hemolytic streptococci

16. Which of the following regarding infective endocarditis is TRUE:

(a) No fever can be seen during infection
(b) Is an auto-immune mediated disease
(c) Acute endocarditis is due to infection with a low virulent microorganism
(d) Can result in the formation of a septic infarct
(e) Recovery is very difficult and most cases end in death

Microbiology

17. Which of the following is the most common cause of infective endocarditis:

(a) Staphylococcus aureus
(b) Streptococcus viridans
(c) Enterococcus fecalis
(d) Fungi
(e) Haemophilus influenzae

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18. Infection with subacute infective endocarditis is associated with the following:

(a) Abnormal valves
(b) Congenital deformities
(c) Rheumatic lesions
(d) A & B
(e) All "A", "B" and "C"

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19. All of the following regarding viral hemorrhagic fever are correct EXCEPT:

(a) Hantaviruses, Rift Valley fever and Dengue are not associated with person-to-person transmission
(b) Arenaviruses are found in South America and Africa and are transmitted by arthropods
(c) Yellow fever is associated with 2 types of infectious cycles
(d) Filoviruses cause the most lethal type of hemorrhagic fever
(e) Bleeding occurs frequently and is a common cause of death

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20. All of the following regarding coxsackievirus B induced myocarditis are correct EXCEPT:

(a) Occurs mostly in average-aged men
(b) Clinical manifestations appear after 2-3 months of infection
(c) Immune-mediated inflammation is the main cause of pathogenesis
(d) Clinical manifestations vary from person to person
(e) Most cases of infection resolve spontaneously

21. Which of the following is the best method for diagnosis of myocarditis:

(a) Serum titers of IgG
(b) Virus isolation
(c) ELISA
(d) Endomyocardial biopsy
(e) Electrocardiographic monitoring

Physiology

22. Preload affects all of the following EXCEPT:

(a) End-systolic volume
(b) End-diastolic volume
(c) Stroke Volume
(d) Ejection Fraction
(e) Cardiac Output

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23. Which of the following is associated with the least increase in oxygen consumption:

(a) Increase in left ventricular pressure
(b) Aortic stenosis
(c) Increase in stroke volume
(d)Hypertension
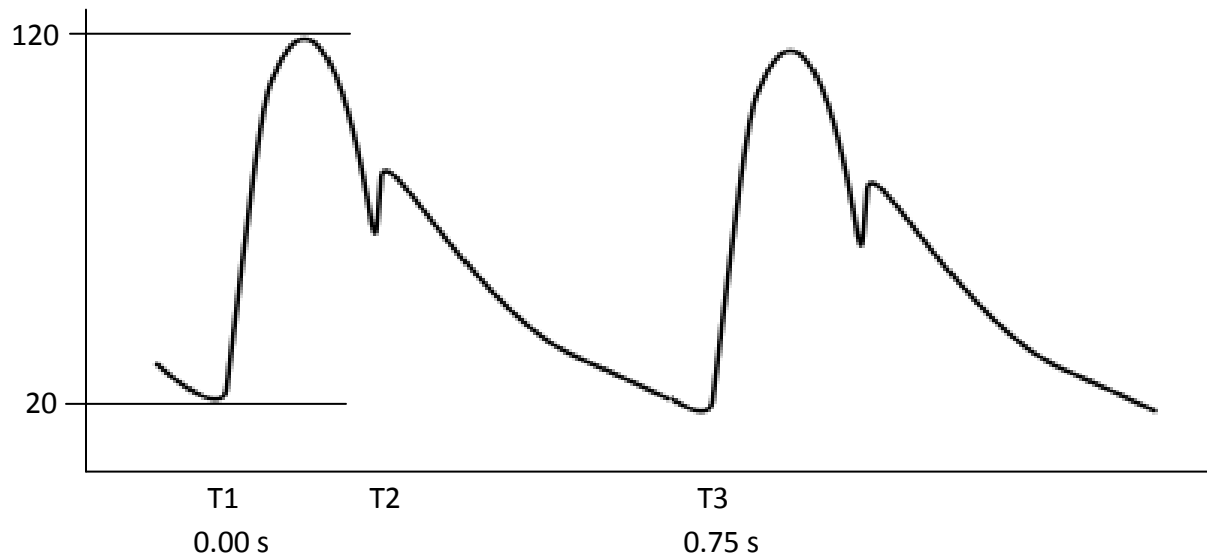(e) Atherosclerosis (decreased compliance)

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24. A woman has a cardiac output of 6L/min, and a heart rate of 75 beats/min. If the left ventricular end systolic volume (LVESV) is 40ml, what is the ejection fraction:

(a) 35%
(b) 66%
(c) 58%
(d) 75%
(e) Can't be calculated

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25. In an ECG, lead I is positive, while lead II is negative. What can be deduced from this:

(a) Left axis deviation (angle is between 0° and -90°)
(b) Normal mean electrical axis (angle is between 0° and $+90^o$)
(c) Right axis deviation (angle is between $+90^o$ and $+180^o$)
(d) Extreme axis deviation (angle between -90° and -180°)
(e) Data is not enough

26. The following graph represents aortic pressure changes. Which of the following is TRUE:

120 ─

20 ─

T1   T2   T3
0.00 s   0.75 s

(a) T1 indicates aortic valve opening
(b) T2 indicates first sound of the heart
(c) This person has an increased afterload
(d) There is ventricular bradycardia
(e) This person has aortic regurgitation (incompetence)

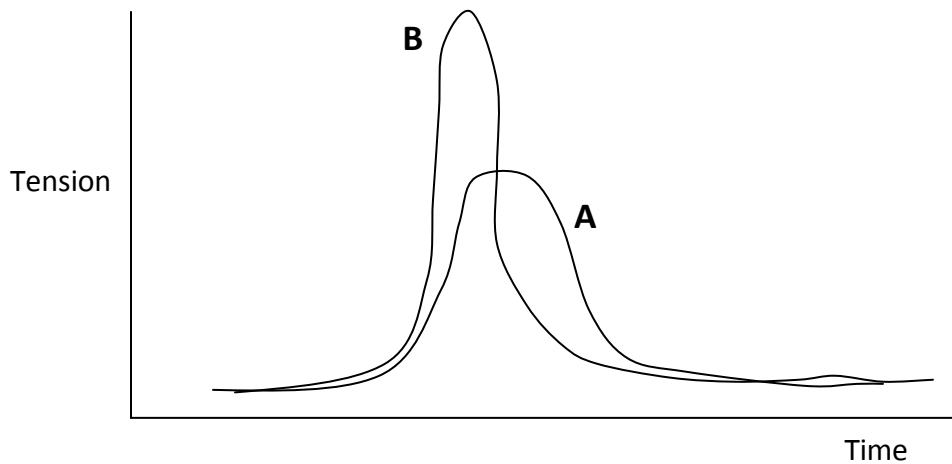
27. All of the following regarding skeletal and cardiac muscles is correct EXCEPT:

(a) Skeletal muscles has more developed sarcoplasmic reticulum
(b) Gap junctions are only found in cardiac muscle
(c) Cardiac muscles are more rich in mitochondria
(d) Nuclei are much more in skeletal muscles than in cardiac muscles
(e) There are larger and shorter T-tubules in skeletal muscles than in cardiac muscles

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28. All of the following regarding turbulence is correct EXCEPT:

(a) It is associated with the sounds of the closure of heart valves
(b) Turbulence is associated with more resistance than laminar blood flow
(c) It is associated with very high velocity of the blood
(d) It occurs normally in the aorta and narrowed blood vessels
(e) Turbulence is directly proportional to the cube root of the driving pressure

29. Which of the following causes the graph to shift from A to B:

(a) *Epinephrine*
(b) Acidosis
(c) Acetylcholine
(d) Ca^{2+} channel blockers
(e) Anticholinergic drug

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30. Which of the following regarding atrial pressure waves is CORRECT:

(a) a wave occurs after ventricular systole
(b) v wave is due to ventricular relaxation
(c) *No a wave is present in atrial fibrillation*
(d) c wave is due to ventricular relaxation
(e) v occurs due to atrial contraction

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31. Which of the following regarding the diastolic depolarization phase 4 of SA potential is INCORRECT:

(a) Fast depolarization is due to the opening of slow calcium channels
(b) The SA membrane is continuously leaking sodium ions
(c) *Slow depolarization occurs more slowly with sympathetic stimulation*
(d) Repolarization occurs due to opening of potassium channels
(e) Acetylcholine increases the permeability of the membrane to potassium

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32. All of the following regarding Ca^{2+} regulation in cardiac muscles during both physiological and pathological conditions is correct EXCEPT:

(a) SR Ca-ATPase pump
(b) Sarcolemmal Ca-Na exchanger
(c) Passive diffusion of calcium to the outside of the cell
(d) Ca-Na exchanger Ca-ATPase pump
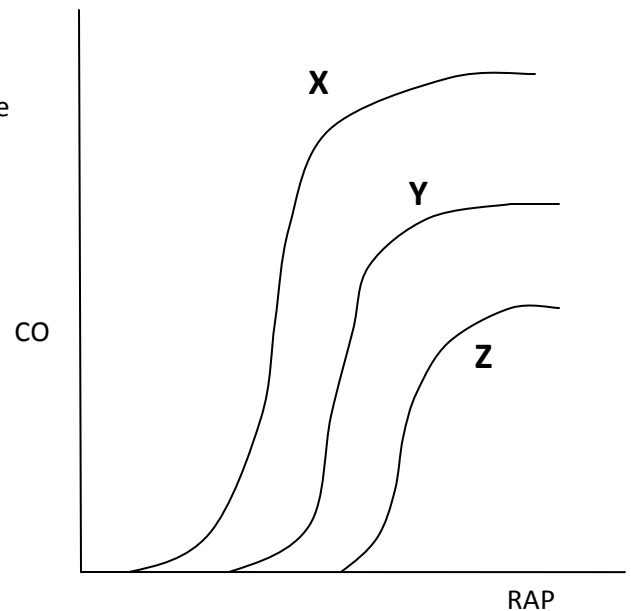(e) Mitochondrial Ca-Na exchanger

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33. Sinus arrhythmia:

(a) Causes prolonged Q-T interval
(b) Causes prolonged R-R interval
(c) Decreases with effort
(d) Increases with exercise
(e) Increases with hypertrophy of the heart

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34. The major structure that contributes to peripheral resistance is:

(a) Aorta
(b) Arterioles
(c) Vena cava
(d) Capillaries
(e) Venules

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35. Which of the following statements regarding curve Y is CORRECT:

(a) Curve X is associated with increased parasympathetic stimulation
(b) Curve Z is associated with hypertrophy of the ventricle
(c) Curve X is associated with increased sympathetic stimulation
(d) Curve X is associated with decreased preload
(e) Curve Z is the result of increased stroke volume

36. A woman's ECG has shown a PR interval of 0.3s, with every P wave followed with a QRS and a T wave. If the time from one P wave to the next is 1.2s, what is she suffering from:

(a) 1st degree incomplete heart block
(b) 2nd degree incomplete heart block
(c) 3rd degree complete heart block
(d) Ventricular bradycardia
(e) More than one is correct

Histology/Anatomy/Embryology

37. An infant suffers from a congenital defect which causes the blood to flow from left to right. After a few years, the blood flow reversed and started flowing from right to left. What does this infant suffer from:

(a) Dextrocardia
(b) Pulmonary stenosis
(c) Big ventricular septal defect
(d) Small ventricular septal defect
(e) Tricuspid atresia

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38. *INCORRECT STATEMENT*: Aneurysm in the ascending aorta can cause dysphagia

39. *INCORRECT STATEMENT*: Blood flow between arch of the aorta and left pulmonary artery occurs only before birth (*in exam → Blood flow between 4 and 5 occurs only before birth*)

40. *INCORRECT STATEMENT*: Ductus venosus connects between the right umbilical vein and left vitelline vein

41. *INCORRECT STATEMENT*: Ductus arteriosus, foramen ovale and the left umbilical vein close immediately after birth (*in exam → A,B and C close immediately after birth*)

42. *INCORRECT STATEMENT*: A drug that causes increased venous compliance will increase the venous return

43. *INCORRECT STATEMENT*: Blood pressure in the arch of the aorta and pulmonary trunk is equal in case of coarctation of the aorta (*in exam → Blood pressure in 3 and 4 is equal in case of coarctation of the aorta*)

44. *INCORRECT STATEMENT*: The auscultatory area of the mitral valve is the same location as the cardiac notch of the left lung

45. *INCORRECT STATEMENT*: During ASD surgery, complete heart block might occur

46. *INCORRECT STATEMENT*: Total occlusion of the LAD artery will result in sub-epicardial infarction

47. *INCORRECT STATEMENT*: Following birth, the systemic resistance decreases

48. *INCORRECT STATEMENT*: The smooth part of the two ventricles is derived from the distal part of bulbus cordis (conus)

49. *INCORRECT STATEMENT*: The connection between the LA and RA closes just before birth (*in exam → The connection between 2 and 3 closes just before birth*)

50. *INCORRECT STATEMENT:* In case of pulmonary embolism, blood flow to the pulmonary trunk will increase (*in exam → In case of pulmonary embolism, blood flow to 2 will increase*)