

Mix and match: L vs R heart failure

- A) L heart failure
- B) R heart failure
- C) neither
- D) either

1. Can be caused by pulmonary stenosis
2. Can be caused by COPD
3. Exacerbated by \uparrow arterial hypertension
4. Can be caused by alcoholism
5. Can be caused by mitral stenosis
6. Edema
7. Peripheral Edema
8. Can be diagnosed by measuring PCW
9. Jugular Venous Distension
10. Symptoms include dyspnea and orthopnea
11. X-Ray shows diffused whiteness in lung fields

12. The left-ventricular end-diastolic pressure is equal to the:

- A) pulmonary wedge pressure
- B) right-atrial end-systolic pressure
- C) left-atrial pressure
- D) systemic arterial pressure
- E) systemic venous pressure
- F) B and E
- G) A and C

Mix and match: Monitoring preload

- A) right atrial pressure
- B) systemic vascular resistance
- C) pulmonary wedge pressure
- D) pulmonary vascular resistance

13. How would you monitor the left sided preload?
14. How would you monitor the right sided preload?

15. ejection fraction vs stroke volume: which is true?

- A) stroke volume remains constant regardless of heart hypertrophy
- B) ejection fraction often decreases with dilated cardiomyopathy
- C) a rabbit and an elephant would be expected to have around the same ejection fraction
- D) stroke volume stays constant at rest vs. exercise
- E) ejection fraction stays constant at rest vs. exercise

Mix and match: drugs

- A) increases contractility
- B) is a vasodilator
- C) reduces afterload
- D) is a diuretic

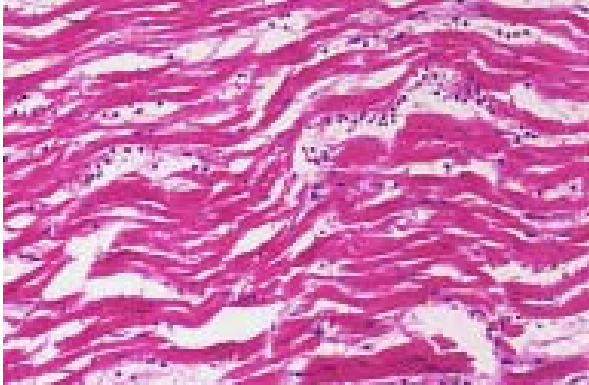
16. Digoxin
17. Calcium Channel Blockers
18. Ace-inhibitors

Mix and match: the basics. May be used more than once, etc...

- A. Atrial Septal Defect
- B. Ventricular Septal Defect
- C. Patent Ductus Arteriosus
- D. Tetralogy of Fallot
- E. Acute Pericarditis
- F. Cardiac Tamponade
- G. Constrictive Pericarditis
- H. Dilated Cardiomyopathy
- I. Hypertrophic Cardiomyopathy
- J. Mitral Stenosis
- K. Mitral Regurgitation
- L. Aortic Stenosis
- M. Aortic Regurgitation
- N. Pulmonary Stenosis

- 19. S2 splitting that is the same with inspiration and expiration
- 20. hyperdynamic cardiac impulse and a holodiastolic murmur
- 21. "triple phase" friction rub
- 22. kussmaul's arterial sign (pulsus paradoxus)
- 23. S4 heart sound present, normal S2
- 24. EKG shows electrical alternans
- 25. S4 with decreased S2
- 26. continuous "machine murmur"
- 27. crescendo-decrescendo systolic murmur, radiates to carotids
- 28. kussmaul's venous sign with early & loud S3
- 29. A prominent feature in this disease is a diastolic pressure gradient between LA and LV
- 30. Systolic pressure gradient between LV and aorta

31. How old is this infarct, and which enzyme would be higher?



- A. 6-48 hours, CK-MB levels highest
- B. 6-48 hours, Troponin levels highest
- C. 3-5 days, CK-MB levels highest
- D. 3-5 days, Troponin levels highest
- E. Over one week, CK-MB levels highest
- F. Over one week, Troponin levels highest

32. Fetal circulation: where is the highest oxygen saturation?

- A. Ductus Venosus
- B. Hepatic Vein
- C. Portal Vein
- D. Ductus Arteriosus
- E. Inferior Vena Cava

33. What is this?



- A. VSD
- B. ASD
- C. Normal
- D. Post-MI rupture

34. What has the lowest diastolic compliance?

- A. Normal Left Ventricle
- B. Hypertrophied Left Ventricle
- C. Normal Right Ventricle
- D. Hypertrophied Right Ventricle

35. On inspiration in a normal person, what happens to the S2 heart sound?

- A. The aortic valve closes audibly before the pulmonic valve
- B. The pulmonic valve closes audibly before the aortic valve
- C. The aortic and pulmonic valves close simultaneously
- D. The tricuspid valve closes audibly before the mitral valve
- E. The mitral valve closes audibly before the tricuspid valve
- F. The tricuspid and mitral valve close simultaneously

36. What would theoretically make an ASD less severe?

- A. ↑ RV compliance
- B. ↑ LV compliance
- C. Reversal of shunting due to pulmonary hypertension

37. An ASD can sometimes cause a murmur. Which valves is it the murmur best heard over?

- A. tricuspid “rumble” in diastole; pulmonic “ejection” in systole
- B. tricuspid “rumble” in diastole; mitral “ejection” in systole
- C. pulmonary “rumble” in diastole; aortic “ejection” in systole
- D. mitral “rumble” in diastole; tricuspid “ejection” in diastole

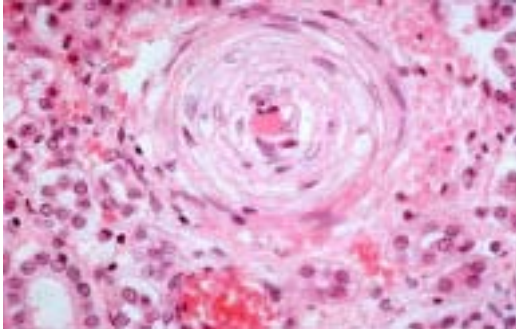
38. What is true about ventricular septal defects?

- A. The loudness of the murmur generally corresponds with the severity of the defect
- B. Are due to incomplete fusion of the septum secundum
- C. Due to high ventricular pressures, can be hemodynamically significant with noticeable symptoms above 0.1 cm in diameter
- D. Can be treated with prostaglandin inhibitors to close the defect
- E. Are characterized by a loud systolic murmur over the sternum

39. Which way does blood flow through the ductus arteriosus in fetal life?

- A. From high pressure pulmonary artery to low pressure aorta
- B. From high pressure aorta to low pressure pulmonary artery
- C. From high pressure pulmonary veins to low pressure SVC
- D. From high pressure right atrium to low pressure left atrium
- E. From high pressure left atrium to low pressure right atrium

40. Where would you expect to see this pathology and what are some of the risk factors?



- A. Any muscular arteries; risk factors are high-fat diet and smoking
- B. Any elastic arteries; risk factors are high-fat diet and smoking
- C. Any muscular *or* elastic arteries; risk factors are high-fat diet and smoking
- C. Any muscular *or* elastic arteries; risk factors are diabetes and hypertension
- D. Any arterioles; risk factors are high-fat diet and smoking
- E. Any arterioles; risk factors are diabetes and hypertension

41. What's not significantly involved in the pathology of atherosclerosis?

- A. monocyte-derived cells
- B. endothelial cell cholesterol metabolism
- C. unspecific endothelial cholesterol transport
- D. smooth muscle cells
- E. LDL oxidation
- F. shear stress

42. What is not a potential danger of coronary balloon angioplasty?

- A. recoil restenosis
- B. plaque fracture
- C. venous thrombosis
- D. plaque rupture
- E. vessel dissection

43. An overweight man in his fifties comes to you complaining on chest pain upon exertion. It goes away after he rests for a couple of minutes. He tells you that this has been going on for at least a year. You decide to make him run on the treadmill while you sip tea and watch his EKG. What do you see?

- A. ST elevation
- B. ST depression
- C. long QT
- D. significant downward Q
- E. wide QRS

44. A patient comes to the emergency room and says he had crushing, extended chest pain exactly one week ago. He claims that he is in fact a highly trained physician and he insists that he had a myocardial infarction. Wanting to see how good the medical students are at his alma mater, he asks you which enzyme will best tell him that he did indeed have an MI.

- A. CK-MB, because it's most specific
- B. CK-MB, because it is detectable the longest
- C. Troponin I and T, because it's most specific
- D. Troponin I and T, because it is detectable the longest
- E. Myoglobin, because it's both specific and long lasting
- F. SGOT/AST, because it's both specific and long lasting

45. Why might you sometimes see shistocytes in shock?

- A. Because RBCs get stuck in hypoxic splenic sinusoids
- B. Because RBCs get stuck in necrotic kidney tubules
- C. Because RBCs get stuck in widespread fibrin depositions
- D. Because RBCs get hemolyzed by complement

46. What doesn't play a significant role in SIRS (systemic inflammatory response syndrome)?

- A. bacterial toxin
- B. TNF
- C. IL-1
- D. IL-12
- E. IFN-gamma
- F. IL-10

47. What is the first organ to become hypoperfused in the initial stages of decompensated shock?

- A. skin
- B. GI
- C. liver
- D. CNS
- E. heart

48. What is the most accurate way to evaluate all stages of shock?

- A. arterial pressure
- B. oxygen consumption
- C. blood lactate
- D. urine output
- E. urine composition

Mix and match: inflammatory heart disease: More than once, etc.

- A. Staphylococcus aureus
- B. Group A beta-hemolytic streptococci
- C. Streptococcus viridans
- D. Trypanosoma
- E. Coxsackie B
- F. Libman Sacks
- G. Marantic endocarditis

49. Common cause of mitral stenosis

50. Causes acute bacterial endocarditis

51. Non-infectious endocarditis associated with Lupus

52. Causes subacute bacterial endocarditis

53. Chagas disease

54. The type of endocarditis caused by this bug is a virulent disease, fatal in 2-6 weeks, 25% cure rate

55. Non-bacterial thrombotic endocarditis associated with low grade DIC

56. Delayed sequela of upper respiratory tract infection = rheumatic fever

57. Causes myocarditis, carried by rediviid bug

58. Non-protozoal agent of myocarditis

59. Which disease does NOT lead to reactive pulmonary arteriolar hypertension?

- A. Atrial Septal Defect
- B. Mitral Stenosis
- C. Ventricular Septal Defect
- D. Aortic Stenosis

60. What is not known to cause mitral regurgitation?

- A. Congenital defects in fibrillin
- B. Infective endocarditis
- C. Rheumatic fever
- D. Hypertrophic cardiomyopathy
- E. pathological LV enlargement
- F. pathological RV enlargement

61. What is the most common cause of mitral stenosis?

- A. Congenital defects in fibrillin
- B. Infective endocarditis
- C. Rheumatic fever
- D. Hypertrophic cardiomyopathy
- E. pathological LV enlargement
- F. pathological RV enlargement

62. What connective tissue disorder is well known to cause both mitral regurgitation and aortic regurgitation?

- A. Marfan's
- B. Scurvy
- C. Osteogenesis imperfecta
- D. Any defect in elastin
- E. Ehlers-Danlos

63. What is not true about a cardiac myxoma?

- A. It is the most common pediatric non-malignant tumor
- B. Is very dangerous because it can block mitral valve
- C. Often occurs in the LA, on the interatrial septum
- D. Can embolize but doesn't metastasize
- E. Increased sedimentation rate

64. What is the most common pediatric tumor?

- A. myxoma
- B. rhabdomyosarcoma
- C. metastatic tumors to the heart
- D. primary malignant tumors (sarcomas)
- E. neoplastic pericardial effusion

65. A mutation in dystrophin can lead to:

- A. Dilated cardiomyopathy
- B. Hypertrophic cardiomyopathy
- C. Constrictive cardiomyopathy
- D. Hypertrophic obstructive cardiomyopathy

66. What would you see on a chest X Ray in congenital aortic stenosis?

- A. Prominent ascending aorta
- B. Prominent knob of aorta
- C. Enlarged heart
- D. prominent pulmonary vasculature

67. What is not associated with a ventricular septal defect?

- A. Eisenmenger's
- B. A L → R shunt
- C. a palpable thrill over the sternum
- D. A continuous murmur (systole & diastole) over sternum
- E. a potentially loud P2 if pulmonary hypertension is present

68. How would you accurately describe transposition of the great arteries?

- A. Dextrocardia with the heart displaced to the right side
- B. A syndrome that can lead to severe shortness of breath later in life if no compensatory shunts are present
- C. A syndrome where the pulmonary vein comes directly out of the left ventricle
- D. A syndrome where the aorta comes directly out of the ventricle with a moderator band

69. What is not a recognized pathogenesis of aneurisms?

- A. Atherosclerosis
- B. Thrombosis
- C. Marfan's syndrome
- D. Obliteration of vasa vasorum
- E. Absence of media at branch points of certain arteries
- F. Trauma

Mix and Match: syncope

- A. vasodepressor syncope
- B. orthostatic hypotension
- C. vertebro-basilar syndrome
- D. subclavian steal syndrome
- E. hysterical syncope

70. A young medical student, who may or may not be completely fictional, raises her hand to ask an urgent, urgent, *urgent* question the day before an exam. Her face goes white and flaccid. She passes out with a “clunk.” When she comes to, she has a mark on her forehead in the shape of a questionmark (apparently she has etched this figure into her desk).

71. A 65 year old man, who may or may not be one of us (or even myself) far in the future, faints when suddenly moving his head to catch the sights at a “gentleman’s club” after wearing a tight collar at work all day.

72. Another young medical student gracefully swoons after watching the strapping star of “Chitty Chitty Bang Bang” walk past her in the crowded cafeteria. Her fall was elegant and perhaps even worthy of an Oscar, if he had only managed to glance her way.

73. A space traveller, whose name may or may not begin with a silent “H”, feels dizzy upon returning to earth.

[there are no questions on vasculitis, sorry]

ANSWERS

1. B
2. B
3. A
4. A
5. A
6. D
7. B
8. A
9. B
10. A
11. A
12. G
13. C
14. A
15. C
16. A
17. C
18. D
19. A
20. M
21. E
22. F
23. I
24. F
25. L
26. C
27. L
28. G
29. J
30. L
31. B
32. A
33. B
34. B
35. A
36. B
37. A
38. E
39. A
40. E
41. B
42. C
43. B
44. D
45. C
46. F
47. A
48. C
49. B
50. A
51. F
52. C
53. D
54. A
55. G
56. B
57. D
58. E
59. D
60. F
61. C
62. A
63. A
64. B
65. A
66. A
67. D
68. D
69. B
70. A
71. C
72. E
73. B