USMLE Uworld questions collection (final)

1) A 60-year-old woman is rushed to the emergency room after she started experiencing a sharp chest pain. Physician examination reveals distant heart sound and a decrease in systolic pressure during inspiration. Electrocardiogram shows ST-segment elevation in multiple leads. She has a history of joint pain but is unsure the exact diagnosis.

This patient most likely has which of the following diagnoses?

A. Osteoarthritis
B. Polymyalgia rheumatic
C. Rheumatoid arthritis
D. Sjogren's syndrome
E. Temporal arteritis

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2) A female neonate is born at 36 weeks gestation weighing 7.2 pounds. Vitals are within normal limits for a newborn. The baby's physical exam is within normal limits with the exception of a 4/6 heart murmur. Echocardiography demonstrates ventricular septal defect, and an overriding aorta that receives blood from both ventricles.

Which of the following cardiovascular changes are also present?

A. Left ventricular hypertrophy and aortic stenosis
B. Left ventricular hypertrophy and pulmonic stenosis
C. Right and left ventricular hypertrophy
D. Right ventricular hypertrophy and aortic stenosis
E. Right ventricular hypertrophy and pulmonic stenosis

3) A 20-year-old male presents to the office for a sports physical. He has no health problems except for prior surgery for lens subluxation. He is 6'4" with long, thin extremities and digits. His chest has an unusual inward slope, and he has very flexible joints. Upon cardiac auscultation, an early, soft, diastolic decrescendo murmur is heard at the apical area. Which of the following is this patient at the greatest risk for?

A. Aortic dissection
B. Cardiac tamponade
C. Mitral stenosis
D. Myocardial infarction
E. Pulmonary artery hypertension

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4) A 50-year-old man presents to the emergency department with severe substernal chest pain that has not subsided despite taking nitroglycerin. EKG shows ST-elevations in leads V3-V6. The man promptly treated and is admitted for observation. One week after the initial chest pain, the patient again reports having chest pain and the resident physician is attempting to figure out if this is a complication of the initial attack or a repeat of initial attack.

Which lab result below would most strongly suggest that the patient is experiencing a repeat of the initial attack?

A. Elevated brain natriuretic peptide
B. Peaks of troponin I and peaks of lactate dehydrogenase (LDH)
C. Weakly positive CK-MB
D. Weakly positive troponin I
E. Weakly positive troponin I and peaks of lactate dehydrogenase (LDH)

5) A 64 year old man develops fever two days following placement indwelling port chemotherapy for his newly diagnosed nonsmall cell lung cancer. His past medical history is significant for COPD, and he continues to smoke one pack per day, which he has done for the last 40 years. On examination he has two macular, erythematous, blanching lesions on the palms of his hands as well as thin dark red lines on the nail beds.A new mitral regurgitation murmur is noted on cardiac auscultation.

What is the most likely causative organism?

A. Group A B-hemolytic streptococci
B. Non-infectious
C. Staphylococcus aureus
D. Staphylococcus epidermidis
E. Streptococcus viridans

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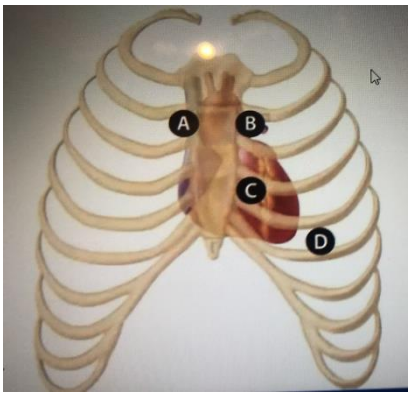
6) A 4-year-old boy is being evaluated for failure to thrive, shortness of breath, and exercise intolerance. Cardiac examination shows bounding peripheral pulses and a palpable thrill over the **left upper sternal border**. On auscultation, a continuous murmur is best heard over the same region. If surgery is planned, the surgeon should intervene on a derivative of which of the following embryologic structures? (not an easy one)

A. Bulbus cordis
B. Fourth aortic arch
C. Primitive atria
D. Sinus venosus
E. Sixth aortic arch

7) 33-year-old man comes to the emergency department complaining of fever, chills, and dyspnea on exertion. He admits to smoking one pack of cigarettes a day, consuming 2-3 alcoholic beverages daily, and using intravenous illicit drugs 2-3 times per week. He is febrile and tachycardic. Blood cultures grow Staphylococcus aureus. A diagnosis of infective endocarditis is established. The valve most likely affected in this patient can be best evaluated by auscultation in which of the following areas?



A. A
B. B
C. C
D. D
E. None

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8) A 2-month-old boy is found unresponsive in his crib. He had previously been well and had a normal physical examination at his 2-month visit approximately 1 week earlier. An autopsy is performed to determine the cause of death. The pathologist concludes that the infant likely died sudden infant death syndrome. The autopsy also shows an incidental finding of **bicuspid aortic valve.** If this patient had survived, he would have been at greatest risk for which of the following events?

A. Aortic dissection in his 30s
B. Aortic stenosis in his 50s
C. Atrial fibrillation in his 40s
D. Endocarditis in his 20s
E. Severe aortic stenosis in infancy

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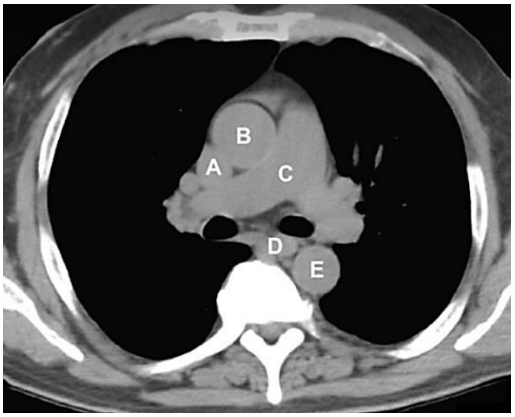
9) A 55-year-old man is brought to the emergency department due to shortness of breath, productive cough, and confusion. His wife mentions that last week he was diagnosed with the flu and his symptoms have progressively worsened. Temperature is 39.4 C (103 F), blood pressure is 80/50 mm Hg, pulse is 120/min, and respiratory rate is 22/min. Pulse oximetry shows 86% on room air. On physical examination, the patient is obtunded and in respiratory distress. He is intubated, given a 2-L bolus of normal saline, and started on broad spectrum antibiotics after blood cultures are obtained.



A central line is placed to access a structure embryonically derived from the **common cardinal veins.** This structure is represented by which of the following labels shown in the chest CT scan below?

A. A
B. B
C. C
D. D
E. E

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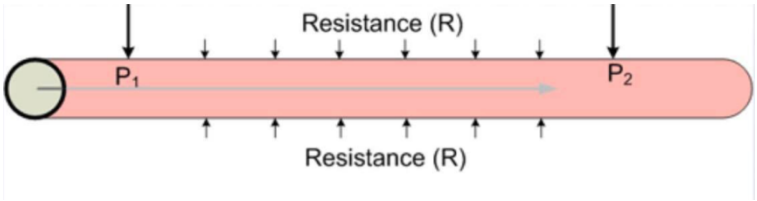
10) 63-year-old man with long-standing hypertension has undergone multiple changes in his antihypertensive regimen over the years with only minimal improvement in his blood pressure. A CT study of his thoracolumbar spine is performed for evaluation of chronic back pain, and the study incidentally reveals a small right kidney. Angiography demonstrates atherosclerotic narrowing of the right renal artery.

The left renal artery is intact. You conclude that the flow in the right-sided artery is decreased by a factor of 16 compared to the left.

By what percentage has the radius of the lumen been reduced?

A. 25%
B. 33%
C. 50%
D. 75%
E. 90%



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11) An 8-year-old boy is brought to the office for rapid and irregular movements of his hands for one week. His parents say that he is also making unintentional "funny faces" and has trouble controlling the volume of his voice. His temperature is 38.9 C (102 F). On physical examination, the boy moves his hands frequently and **erratically**. He has a new III/IV systolic murmur and several circular, faintly **erythematous** lesions on his abdomen.

Which of the following is the most likely mechanism for this patient's condition?

A. Activation of exotoxin-induced T cell receptors
B. Cross-reactivity of antibodies against bacterial and host antigens
C. Embolization of an infected thrombus
D. Injury from immune complex deposition
E. Release of an erythrogenic toxin

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12) A new drug developed for the treatment of congestive heart failure demonstrates favorable effects in both animal experiments and human studies. The drug dilates arterioles and veins and promotes diuresis. The drug described above is most likely an analog of which of the following endogenous substances?

A. Endorphin
B. Transforming growth factor - beta (TGF-6)
C. Brain natriuretic peptide
D. Bradykinin
E. Endothelin

X13) A 66-year-old man with non-ischemic cardiomyopathy has persistent shortness of breath despite being on maximal heart failure therapy. He has no lightheadedness or chest pain. Blood pressure 133/72 mm Hg and pulse is 76/min. The patient is treated with a novel medication that inhibits the metalloprotease Neprilysin. This medication promotes natriuresis and decreases blood pressure by vasodilation. Inhibitors of the metalloprotease prevent degradation of which of the following substances?

A. Aldosterone
B. Antidiuretic hormone
C. Natriuretic peptides
D. Renin
E. Thromboxane

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14) A 60-year-old man comes to the emergency department with dizziness and palpitations. He is diagnosed with a cardiac arrhythmia and started on a medication that is known to significantly prolong the QT interval on electrocardiogram (ECG). However, the drug is associated with a lower incidence of torsade de pointes than the other QT-prolonging agents. Which of the following medications was most likely used in this patient?

A. Adenosine
B. Amiodarone
C. Digoxin
D. Esmolol
E. Lidocaine

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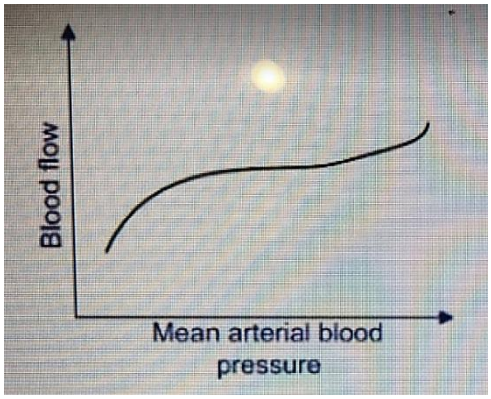
15) Researchers are observing how coronary blood flow changes in response to progressive increases in the mean arterial blood pressure (see the slide below). The more horizontal portion of the graph indicates the region where coronary blood flow is relatively insensitive to blood pressure changes. Within this zone of autoregulation, the metabolic demands of the myocardium are the main determinant of coronary blood flow. Which of the following endogenous factors is most responsible for controlling coronary blood flow within this range?



A. Norepinephrine
B. Acetylcholine
C. Nitric oxide
D. Angiotensin II
E. Histamine O

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16) A 65-year-old male loses consciousness while buttoning a tight shirt collar. He reports that this has happened several times in the past. His blood pressure was 70/40 mmHg and his heart rate was 45/min during one of the episodes. Stimulation of which of the following afferent nerves is most likely responsible?

A. Hypoglossal
B. Accessory
C. Trigeminal
D. Glossopharyngeal
E. Vagal

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17) Milrinone is a strong inotropic agent. Its mechanism of action involves inhibition of phosphodiesteras isoenzyme 3. Which of the following additional responses is most likely an extension of its pharmacologic effect?

A. Angioedema
B. Antiarrhythmic action
C. Vasodilation
D. Increased right atrial pressure
E. Sodium and water retention

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18) A 44-year-old man with non-ischemic cardiomyopathy and chronic systolic heart failure comes to the cardiology clinic for a follow-up appointment. The patient has experienced recent worsening of dyspnea on exertion, and now has to stop halfway to catch his breath while climbing the stairs to his second floor apartment. After consultation with the patient, the decision is made to start him on a neutral endopeptidase inhibitor. The medication prolongs the action of an endogenous polypeptide hormone that increases urinary output and decreases total peripheral vascular resistance. This polypeptide hormone is most likely produced by which of the following tissues?

A. Atrial cardiomyocytes
B. Duodenal epithelium
C. Glomerular zone of the adrenal gland
D. Posterior pituitary gland
E. Renal juxtaglomerular cells

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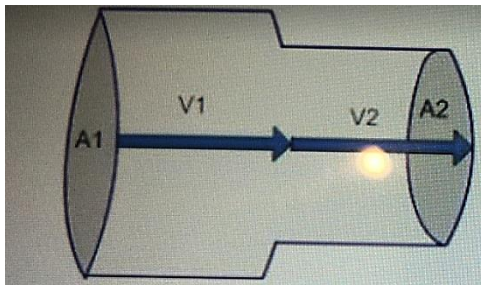
19) In order to maintain constant fluid flow through a tube with varying diameters, which of the following would be true (where A1 and A2 represent cross-sectional areas, and V1 and V2 represent the -corresponding flow velocities)?



A. V1 = V2
B. V1 = A1*V2
C. A2 = A1*V1/ V2
D. V1 = A1*A2/V2
E. V1*A2 = V2*A1

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20) A 23-year-old man has a mean arterial pressure of 95 mm Hg at rest. After swimming for 30 minutes, his mean arterial pressure has risen only slightly to 115 mm Hg. A decrease in which of the following during exercise most likely accounts for the observed finding? (good one)

A. Systolic blood pressure
B. Renal blood flow
C. Cardiac stroke volume
D. Systemic vascular resistance
E. Right atrial pressure

Answers:

1	2	3	4	5	6	7	8	9	10
C	E	A	C	C	E	C	B	A	C

11	12	13	14	15	16	17	18	19	20
B	C	C	B	C	D	C	A	C	D

و بس خلصنا يلا عأمرررييكا هههخخخخ

Goooood luckkk