**November 21, 2023, AHD MKSAP Questions and LOs**

1. A 74-year-old man is evaluated for a 6-month history of progressive bilateral calf pain. The discomfort is worse with walking and improves quickly with rest. Medical history is significant for hypertension and hyperlipidemia. He has a 50-pack-year history of smoking but quit 5 years ago. Medications are rosuvastatin, quinapril, and metoprolol.

On PE, vital signs are normal. A right femoral bruit is noted. Bilateral femoral pulses and pedal pulses are faint. Motor and sensory examinations are normal; reflexes are normal.

The ankle-brachial index is 0.92 on the right and 0.94 on the left. (normal)

**Which of the following is the most appropriate test to perform next?**

1. Exercise ankle-brachial index testing
2. Invasive angiography
3. Toe-brachial index
4. Magnetic resonance angiography
5. A 75-year-old man is evaluated for dyspnea and an episode of exertional syncope. He is diagnosed on clinical examination with aortic stenosis.

An ECG shows normal sinus rhythm and left ventricular hypertrophy with repolarization abnormalities. The echocardiogram reveals a severely thickened, minimally mobile tricuspid aortic valve compatible with severe aortic stenosis. However, hemodynamic data from echocardiography show a mean aortic gradient and aortic valve area consistent with moderate stenosis. Left ventricular ejection fraction is greater than 55% and stroke volume index is normal.

**Which of the following is the most appropriate next step in management?**

1. Cardiac catheterization
2. CT of the aortic valve
3. Exercise stress testing
4. Surgical aortic valve replacement
5. Transcatheter aortic valve implantation
6. A 72-year-old man is hospitalized with decompensated heart failure. Initial overnight treatment consisted of intravenous furosemide equal to his total oral outpatient dose (40 mg). Overnight urine output was 250 mL, with no change in his symptoms. Medical history is significant for hyperlipidemia and hypertension. Outpatient medications are lisinopril, metoprolol succinate, furosemide, and atorvastatin.

On PE, blood pressure is 122/82 mm Hg, pulse rate is 88/min, respiration rate is 26/min, and oxygen saturation is 95% with the patient breathing 2 L/min of oxygen by nasal cannula. He is alert, and his skin is warm and dry. Central venous pressure is elevated. Cardiac examination does not reveal an S3. There is pitting edema to his knees.

Serum electrolytes are normal, creatinine level is 1.5 mg/dL, and B-type natriuretic peptide level is elevated.

**Which of the following is the most appropriate treatment?**

1. Add intravenous milrinone
2. Add intravenous nitroglycerin
3. Discontinue metoprolol
4. Increase intravenous furosemide

**Write the answers to the following learning objectives:**

1. List the drugs that reduce mortality in the management of systolic heart failure. Describe the other pharmacologic therapies for systolic heart failure that improve hospitalization rate or help control symptoms but do not reduce mortality.
2. Define severe mitral stenosis by valve area. Know the appropriate interval of clinical evaluation and echocardiogram to monitor mitral stenosis.
3. Define severe mitral regurgitation. Know the appropriate interval of clinical evaluation and echocardiogram based on severity of mitral regurgitation.