

MKSAP Questions

1. A 41-year-old woman is evaluated for a several-month history of shortness of breath and wheezing. Her symptoms are worse with warm or humid weather and poor air quality. She has no nighttime symptoms. She reports substantial secondhand smoke exposure as a child. She had childhood asthma, but the symptoms dissipated when she was in middle school. Results of allergy testing performed in childhood were positive for allergies to dust and animal dander. She also has hypertension. Her only medication is amlodipine.

On physical examination, vital signs are normal. The remainder of the examination is unremarkable.

Spirometry findings are normal, with no change after administration of a fast-acting bronchodilator.

Which of the following is the most appropriate next step in therapy?

- A. Albuterol Inhaler
- B. Bronchial Challenge Testing
- C. Fractional exhaled nitric oxide
- D. Low-dose budesonide-formoterol

2. A 45-year-old man is evaluated 2 weeks after hospitalization for a COPD exacerbation. His symptoms have improved, and his dyspnea and cough have returned to baseline. He has a 30-pack-year smoking history and stopped smoking 4 years ago. In addition to COPD, medical history is notable for hypertension, eczema, allergic rhinitis, childhood asthma, and obstructive sleep apnea (OSA). Medications are salmeterol, tiotropium, intranasal fluticasone, and losartan. He uses nocturnal continuous positive airway pressure for the OSA.

Physical examination findings, including vital signs, are normal.

Pulmonary function tests:

	Prebronchodilator		Postbronchodilator
FEV ₁	60% of predicted	L	75% of predicted
FEV ₁ /FVC ratio	0.65	L	0.64

Chest radiograph is normal.

Which of the following is the most likely diagnosis?

- A. Asthma and COPD overlap
- B. Combined pulmonary fibrosis and emphysema
- C. COPD
- D. Cystic Fibrosis

3. A 59-year-old man is seen in a follow-up visit for a 6-month history of progressively worsening chronic cough productive of small amounts of thin clear sputum and dyspnea on exertion. He has shortness of breath when he walks quickly and when he walks uphill. He has a 45-pack-year smoking history but quit 2 years ago. He has been using albuterol as needed since his diagnosis of COPD 3 months ago, but he remains symptomatic.

On physical examination, oxygen saturation is 95% with the patient breathing ambient air. Scattered expiratory wheezing is heard. Cardiac examination is normal.

Chest radiograph from 3 months ago shows flattened diaphragm but no infiltrate.

Spirometry at the time of diagnosis showed reduced postbronchodilator FEV₁/FVC ratio and FEV₁ of 69% of predicted.

Which of the following is the most appropriate pharmacologic treatment?

- A. Inhaled fluticasone propionate-salmeterol
- B. Inhaled tiotropium Bromide
- C. Prednisone
- D. Roflumilast

4. A 25-year-old man is evaluated in the emergency department for worsening shortness of breath and right-side pleuritic chest pain, which developed 1 hour ago. He has an 8-pack-year history of smoking cigarettes. His medical history is otherwise unremarkable, including the absence of lung disease. He is a professional scuba diver.

On physical examination, blood pressure is 150/70 mm Hg, pulse rate is 105/min, and respiration rate is 30/min. Oxygen saturation is 92% with the patient breathing ambient air. There are decreased breath sounds, reduced expansion, and hyperresonance to percussion on the right side.

Chest radiograph reveals a large right pneumothorax and no signs of tension.

Smoking cessation counseling and an offer of varenicline are planned at the time of discharge.

Which of the following is the most appropriate additional pneumothorax management?

- A. Catheter thoracostomy followed by pleurodesis
- B. Needle Aspiration
- C. Observation
- D. Supplemental oxygen and observation

5. A 63-year-old woman is evaluated for increasing shortness of breath for the past 2 months. She has ischemic cardiomyopathy and a history of breast cancer treated with surgery and irradiation 9 years ago. When she was between 20 and 30 years of age, she worked installing brakes on automobiles. She is on guideline-directed medical therapy for heart failure.

On physical examination, vital signs normal. Cardiac examination reveals an S₃, mitral regurgitation, hepatomegaly, possible ascites, and peripheral edema. There is dullness to percussion and absent breath sounds at the left base.

Chest radiograph shows a moderate left-sided pleural effusion but is otherwise normal.

A thoracentesis removes 600 mL of bloody fluid. The pleural fluid lactate dehydrogenase (LDH) level is 208 U/L, and the total protein level is 4.4 g/L. Simultaneous serum lactate dehydrogenase level is 279 U/L, and total protein level is 7.6 g/dL (76 g/L). Pleural fluid cytology is pending.

Which of the following is the most likely diagnosis?

- A. Benign Asbestos Pleural Effusion
- B. Heart Failure
- C. Hepatic Hydrothorax
- D. Malignant Pleural Effusion