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Pneumonology Quiz – Case 3

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A. Corlateanu,[1]
V. Botnaru,[1]
A.G. Mathioudakis,[2,3]
D. Rusu,[1]
E. Scutaru[1]

[1]Respiratory Department, "Nicolae Testemitanu" State University of Medicine and Pharmacy, Chisinau, Moldova
[2]Centre for Respiratory Medicine and Allergy, Institute of Inflammation and Repair, Wythenshawe Hospital, University of Manchester, United Kingdom
[3]Breath Centre of Athens, Athens, Greece

A 67-year-old male patient, lifelong smoker, with a background of asthma since childhood and recurrent ethmoid polyps attended for a routine clinical review. He was only prescribed a salbutamol inhaler, to be used when required. He reported intermittent episodes of shortness of breath with wheezing at night and a progressive deterioration of his symptoms over the previous two years. He was also complaining of cough productive of yellow phlegm, almost every morning. On examination, he was tachypneic at rest, with an oxygen saturation of 92% on room air. He was severely hyperinflated and a bit wheezy on auscultation.

Biochemical analysis revealed leukocytosis and eosinophilia (10%), increased C-reactive protein (mildly) and total IgE in the blood, eosinophils 20% and neutrophils 80% in sputum. Spirometry and bronchodilator test was performed and the results are presented in table 1. Chest X-ray only showed hyperinflation and thoracic computed tomography (CT), paraseptal emphysema.

Question 1:

What is the most likely diagnosis?

Question 2:

Which (one or more) of the following options would you include in the long-term management plan of this patient?

a. Prescribe long-acting beta agonist (LABA)
b. Prescribe a combination of inhaled corticosteroid and LABA (ICS/LABA)
c. Prescribe long-acting muscarinic antagonist (LAMA)
d. Recommendation for smoking cessation
e. Long-term oxygen therapy
f. Refer for pulmonary rehabilitation.

Table 1. Patient's spirometry.

Spirometry
FEV_1 37% predicted
FVC 53% predicted
FEV_1/FVC 54%
Post-BD increase of FEV_1=14% and 380 mL from baseline

Comment

Asthma-chronic obstructive pulmonary disease (COPD) overlap syndrome (ACOS) remains a diagnosis of exclusion, as the diagnostic criteria adopted by the Global Initiative for Asthma (GINA) and Global Initiative for Chronic Obstructive Lung Disease (GOLD) are limited. ACOS is characterized by persistent airflow limitation with several features usually associated with asthma and several features usually associated with COPD.

The non-pharmacological management should include smoking cessation, oxygen supplementation, pulmonary rehabilitation, vaccines and management of comorbidities since all of this is well argued clinically. Limited data are available regarding how ACOS patients respond to the available medications. Patients with ACOS, present a greater degree of bronchial eosinophilic inflammation. That is why they have a very good response to inhaled corticosteroids. Consequently, patients with ACOS should be prescribed the inhaled corticosteroids together with long-acting $beta_2$ agonists irrespective of the severity of the airflow obstruction, as considered earlier. In severe cases, a LAMA can be added as well.

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Corresponding author:

A. Corlateanu, Department of Respiratory Medicine, "Nicolae Testemitanu" State University of Medicine and Pharmacy, 165 Stefan cel Mare street, MD-2004 Chisinau, Republic of Moldova, tel.: +373 22 205 132
e-mail: alexandru_corlateanu@yahoo.com

Answers:

Question 1: Asthma-COPD overlap syndrome (ACOS)

Question 2: b, d, f