CONTINUING MEDICAL EDUCATION EXAMINATION

Response to Monoclonal Antibodies in Asthma: Definitions, Potential Reasons for Failure, and Therapeutic Options for Suboptimal Response

Instructions for obtaining 1.2 Continuing Medical Education Credits

Credits can be earned by reading the text and completing the CME examinations online throughout the year on the SEAIC web site at **www.seaic.org**

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CME Items

1. Which of the following options states the 4 main domains to be included in the definition of response to biologics?
   a. Severe exacerbations, OCS use, symptoms, and FEV_1
   b. Mild exacerbations, ACT, adherence, smoking habit
   c. Severe exacerbations, adherence, ACT, FVC
   d. Exacerbations, adherence, FVC, inhaled corticosteroids

2. How do we define a complete response?
   a. The patient does not present severe exacerbations
   b. OCS are not needed
   c. The patient achieves symptom control and normal pulmonary function
   d. All of the above

3. Which of the following is true of the FEOS score?
   a. It was developed to quantify response in severe asthma patients treated with mAbs.
   b. It assigns relative weights to 4 clinically relevant domains (OCS dose, severe exacerbations, symptoms, and pulmonary function)
   c. The range of responses runs from 0 (worsening) to 100 (best possible response).
   d. All of the above

4. Which is the most difficult task for clinicians who treat severe asthma with biologics?
   a. Classifying a patient as a complete responder
   b. Classifying a patient as a nonresponder
   c. Deciding between maintaining or switching a mAb in cases of partial response
   d. Annualizing the rate of exacerbations

5. Which of the following is a potential cause of suboptimal response to mAbs?
   a. Incorrect identification of a T2-high endotype, comorbidities, insufficient dose, infections, autoimmune phenomena, adverse effects
   b. Sustained bronchodilator response, need for OCS, high rate of exacerbations, reduced lung function
   c. Increased eNO, increased eosinophils in induced sputum, low lung function, comorbidities
   d. Increased eosinophils in blood, increased total IgE, adverse effects, insufficient dose

6. Which of the following statements is false with respect to the causes of suboptimal response to mAbs?
   a. Obesity and ACO are frequent comorbidities that could lead to suboptimal responses
   b. Transient eosinophilia is frequent in patients treated with dupilumab
   c. Cases of EGPA have been associated with mAbs
   d. Neutralizing antibodies are easily detected and monitored in clinical practice

7. Which of the following can best be applied to mucus plugging?
   a. It is quite uncommon in severe asthma
   b. It is always associated with the presence of bronchiectasis
   c. It is a potential cause of suboptimal response to mAbs
   d. When detected, it should not be treated with biologics

8. Which of the following statements is false with respect to the failure of mAbs to control asthma exacerbations?
   a. Not all asthma exacerbations are caused by an increase in uncontrolled bronchial inflammation due to failed mAb therapy
   b. Respiratory infections are an infrequent cause of asthma exacerbations
   c. Infectious exacerbations are characterized by sputum neutrophilia and elevated blood CRP
   d. FeNO measurement is the preferred method for discriminating between inflammation (≥50 ppb) and infection (≤20 ppb).

9. In which of the following situations can combination therapy with mAbs be considered?
   a. Severe, refractory, poorly controlled asthma that responds only partially to one of them
   b. Typical comorbidities, such as atopic dermatitis, nasal polyposis, and chronic urticaria
   c. When anti–IL-5/R treatment alone is insufficient to achieve asthma control or when symptomatic hypereosinophilia occurs during therapy with dupilumab (the combination of dupilumab and anti–IL-5/R might be an option)
   d. All of the above

10. Which of the following statements is true?
    a. The best-known alarmins are TSLP, IL-25, and IL-33
    b. These cytokines are released by the epithelial cells of the respiratory tract in response to stimulation with allergens, air pollutants, and viruses, inducing an increase in inflammatory activity at a high point in the inflammatory cascade
    c. Tezepelumab, a human anti-TSLP monoclonal antibody, has recently been approved by regulatory agencies for treating severe asthma
    d. All of the above