

# Phenotypes and Endotypes of Uncontrolled Severe Asthma: New Treatments

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## CME Items

- 1) In corticosteroid-resistant asthma
  - a) FEV<sub>1</sub> improves by <15% after the inhalation of salbutamol
  - b) FEV<sub>1</sub> improves by <15% after 14 days of oral prednisone (40 mg)
  - c) Neutrophils are predominant in sputum
  - d) All of the above
2. Which of the following are true with regard to administration of methotrexate in patients with asthma?
  - a) It requires prolonged administration to be effective
  - b) It may cause liver disorders
  - c) There are no clinical parameters that can predict its usefulness
  - d) There are no studies that demonstrate its effectiveness
3. Daclizumab is
  - a) A monoclonal antibody to IL-2 receptors in T lymphocytes
  - b) A monoclonal antibody to IFN- $\gamma$  receptors in T lymphocytes
  - c) An IL-5 antagonist
  - d) An IL-13 receptor antagonist
4. In the phenotype of severe asthma with frequent exacerbations, risk factors other than previous history are classified as potentially modifiable and nonmodifiable. Which of the following factors are considered nonmodifiable?
  - a) Exposure to tobacco smoke
  - b) Gastroesophageal reflux
  - c) Viral infections
  - d) Exposure to allergens
5. In severe asthma with irreversible airflow obstruction, which of the following are not considered risk factors?
  - a) Development of bronchial symptoms in childhood
  - b) Male gender
  - c) Sensitization to *Aspergillus fumigatus*
  - d) Smoking
6. Persistent eosinophilic severe asthma is characterized by eosinophilia in bronchial biopsy specimens and induced sputum despite high doses of inhaled or systemic corticosteroids. Which of the following statements about this condition are false?
  - a) Between one-half and two-thirds of patients with severe asthma have persistent eosinophilia in the main airway
  - b) This type of asthma has a good response to treatment with anti IL-5
  - c) Patients with severe asthma (ENFUMOSA) have a lower percentage of atopy than those with milder asthma
  - d) Persistent eosinophilia is more prevalent in early-onset asthma regardless of the dose of corticosteroids used
7. As regards severe asthma endotypes, which one of the following statements is false?
  - a) An asthma endotype can encompass several phenotypes, and a specific phenotype may be present in several endotypes
  - b) Seven parameters have been proposed to define endotypes
  - c) Comorbidities constitute one of the defining criteria of endotypes
  - d) Asthma in cross-country skiers is one of the defined endotypes
8. Which of the following is correct with respect to the classification of the phenotypes of severe asthma in children?
  - a) It depends exclusively on the pattern of symptoms over the last 3 months
  - b) It is based on the patient's age
  - c) It is based on the cellularity of induced sputum or on a combination of airway physiology, symptoms, and the cellularity of inflammatory sputum
  - d) Answers b and c are correct
9. With respect to severe asthma in children
  - a) Viral or bacterial superinfection implies a change in phenotype
  - b) Pulmonary function is often greatly deteriorated
  - c) Males are more susceptible
  - d) Disease progression is better in atopic patients
10. With respect to the inflammatory response
  - a) The younger the patient, the greater the possibility of an eosinophilic pattern
  - b) The proximal airway is generally the most affected area
  - c) The eosinophilic pattern is determined by the presence of at least 1.5% of eosinophils in sputum
  - d) Asthma exacerbations in children have a mostly eosinophilic inflammatory pattern