

CONTINUING MEDICAL EDUCATION EXAMINATION

Anticholinergics for Treatment of Asthma

Instructions for obtaining 1.4 Continuing Medical Education Credits

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CME Items

- Which of the following is not a LAMA?
 - Glycopyrronium
 - Tiotropium
 - Aclidinium
 - Ipratropium
- Antagonism of which type of muscarinic receptor is most important for the bronchodilator effect of anticholinergics?
 - M₁
 - M₂
 - M₃
 - M₄
- Which of the following LAMA have been approved for the treatment of chronic obstructive pulmonary disease in Spain?
 - Tiotropium
 - Glycopyrronium
 - Aclidinium
 - All of the above
- Which of the following long-acting muscarinic antagonists was recently approved in the European Union for the treatment of some patients with persistent asthma?
 - Aclidinium
 - Tiotropium
 - Glycopyrronium
 - Ipratropium
- In patients with moderate severe asthma who are not adequately controlled by ICS or ICS/salmeterol, the addition of tiotropium resulted in
 - An increase in lung function
 - A reduction in severe asthma exacerbations
 - No significant increase in severe adverse events
 - All of the above
- Which of the following statements is correct?
 - Patients with severe asthma showed an additional improvement in quality of life when tiotropium was administered
 - Patients with severe asthma showed an additional improvement in lung function when tiotropium was administered in addition to combination therapy (ICS/LABA)
 - In patients with severe asthma on maintenance treatment with ICS, the addition of tiotropium was superior to salmeterol
 - Tiotropium is not indicated in patients with severe asthma
- In the treatment of acute asthma with anticholinergics, which of the following is correct?
 - Short-acting anticholinergics are effective as bronchodilators, usually when they are combined with inhaled β_2 -agonists
 - Inhaled ipratropium bromide added to β_2 -agonists is indicated as standard treatment in children with moderate to severe exacerbations of asthma in the emergency setting
 - Anticholinergics are not indicated as standard treatment in hospitalized children for acute asthma
 - All of the above
- Which of the following sentences regarding cost-effectiveness of asthma treatment is false?
 - Hospitalization and medications have been found to be the most important drivers of direct costs, while work/school absenteeism accounts for the greatest percentage of indirect costs
 - Patients with difficult-to-treat or suboptimally controlled asthma consume a large part of asthma health care resources
 - The addition of tiotropium to the maintenance treatment of asthmatic patients not controlled with high-dose ICS/LABA leads to a gain in quality-adjusted life years
 - Addition of tiotropium to the regular treatment of asthmatic patients not controlled with high-dose ICS/LABA is not considered cost-effective
- Which of the following have not been associated with a better response to anticholinergics?
 - Patients with chronic asthma and concurrent fixed airway obstruction
 - Older patients with a longer duration of asthma
 - Patients with frequent use of β_2 -agonists after allergen exposure
 - Patients with intrinsic asthma
- Which of the following sentences on the safety profile of anticholinergic drugs is correct?
 - The most commonly reported adverse event was dry mouth
 - Tiotropium (Respimat) was associated with a significantly increased risk of mortality in mild to moderate asthma
 - In the TIOSPIR study (patients with chronic obstructive pulmonary disease), tiotropium (Respimat) was associated with higher mortality and a higher incidence of arrhythmias than HandiHaler among patients with previous heart disease
 - Considering the overall incidence of adverse events in a meta-analysis of patients with asthma, anticholinergics were associated with significantly more adverse events than placebo