

Clinical Question: A patient was traveling in the United States and had an asthma attack, taking her to emergency where she was given Spiriva. Have you heard of using Spiriva for asthma?

Anticholinergics are not generally used as standard therapy for asthma. However, according to the RxFiles they may be used as “add-on” therapy to SABA, especially in emergencies.¹ And although there is limited clinical literature to support the recommendation, the 2007 American Guidelines for the Diagnosis and Management of Asthma by the National Heart, Lung and Blood Institute lists anticholinergics as quick-relief medications for asthma based on clinical experience and knowledge (panel consensus). The American guidelines specifically mention ipratropium bromide (Atrovent) as providing additive benefit to SABA in moderate to severe asthma exacerbations.²

The use of anticholinergics in the emergency department for severe asthma exacerbations has been recommended in Canada and the United States with more confidence.^{2,3} The Summary of Recommendations from the Canadian Asthma Consensus specifically mention ipratropium bromide as being effective in the emergency department when combined with fast-acting β_2 -agonists for treatment of severe acute asthma in children and adults. The American guidelines recommend SABA to relieve airflow obstruction combined with inhaled ipratropium bromide in severe exacerbations, based on high level evidence (i.e. end points of well-designed RCTs providing consistent findings). They recommend using ipratropium bromide in the emergency department for patients having severe exacerbations, but it is not recommended during hospitalization.

Studies

Most of the literature supporting the use of anticholinergics is based on studies using ipratropium bromide. This is likely due to ipratropium’s quick onset of action, which is within 15 minutes. Tiotropium on the other hand has a relatively delayed onset of action compared with ipratropium bromide, and data is still lacking to support the use of tiotropium for management of acute asthma exacerbations.⁴ Atrovent (ipratropium bromide) has an official indication in the CPS for acute asthmatic attacks when used in conjunction with a SABA and administered by compressed air or nebulizer⁵ whereas Spiriva (tiotropium) is not indicated for asthma in Canada.⁶ With that said, there are a few clinical trials recruiting to determine the efficacy of using tiotropium bromide in asthma patients. Most of this research is focusing on using tiotropium as add-on controller therapy in addition to usual asthma care. A list of clinical trials can be found on the following website: <http://clinicaltrials.gov/ct2/results?term=asthma+and+tiotropium>.

Bottom Line

Good evidence exists to support use of ipratropium bromide in conjunction with SABA in the emergency department for severe asthma exacerbations. However, there is limited evidence to support using tiotropium bromide in the same capacity. Clinical studies are on-going to determine effectiveness of anticholinergics, including tiotropium and ipratropium as add-on controller therapy in addition to usual asthma care.

¹ Regier L and Downey S. The RxFiles. Asthma & COPD Pharmacotherapy. The RxFiles – 6th Edition. February 2007.

² National Heart, Lung and Blood Institute. Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma. Available at: <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>. Accessed on: 24-Feb-2009.

³ Becker A, Lemiere C, Berube D et al. Summary of recommendations from the Canadian Asthma Consensus Guidelines, 2003. CMAJ 2005; 173 (6 suppl): S1–S56. Available at: http://www.cmaj.ca/cgi/reprint/173/6_suppl/S3. Accessed on: 17-Mar-2009.

⁴ Aaron, S. Anticholinergic agents in the management of acute exacerbations of asthma. Available at: <http://www.uptodate.com/patients/content/topic.do?topicKey=~uXX84h3R1Wk3y>. Accessed on 20-Mar-2009.

⁵ Canadian Pharmacists Association. Compendium of Pharmaceuticals and Specialties (2008). Atrovent Inhalation Solution – ipratropium bromide p.245.

⁶ Canadian Pharmacists Association. Compendium of Pharmaceuticals and Specialties (2008). Spiriva – tiotropium bromide monohydrate p.2122.