Asthma medication linked with arrhythmias in children, young adults

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Use of inhaled anticholinergics (IACs) has been associated with an increased risk of potentially dangerous heart arrhythmias among young asthma patients, according to a study conducted by researchers at the University of Illinois at Chicago. The medications are commonly used to help control asthma flare-ups, and recent studies have shown that they may be an effective treatment option for routine asthma management.

The study will be presented at the ATS 2012 International Conference in San Francisco.

"In our study, we found that the use of IACs was associated with an increased risk of arrhythmias in young individuals with asthma," said study author Todd Lee, PharmD, PhD. "Obviously, this finding raises concern because of the recent interest in use of anticholinergics in asthma."

Anticholinergics help prevent spasms that cause asthma flare-ups, and may also help prevent the buildup of thick mucus that can accompany exacerbations. The National Asthma Education and Prevention Program (NAEPP) recognizes anticholinergics as a "quick relief" medication for patients with asthma, and there has been interest in using IACs for maintenance therapy in asthma following recent favorable clinical trial findings.

"Previous studies of patients with chronic obstructive pulmonary disease (COPD) have suggested a link between these medications and increased

cardiovascular risks, but that association has not been tested in a population with asthma," said Dr. Lee. "Our objective was to evaluate the association between IACs and arrhythmias in young persons with asthma."

To conduct their study, the researchers reviewed data collected between July 1997 and April 2010 by the IMS LifeLink™ Health Plan Claims Database, to identify 283,429 asthma patientsfrom five to 24 years of age. From these patients, the researchers looked for individuals who were new users of asthma controller medications, including inhaled corticosteroids, long-acting beta-agonists or leukotriene modifiers, or IACs, and who had continuous enrollment in the IMS system for at least six months prior to having the control medication dispensed. Individuals with a history of arrhythmias or congenital heart disease were excluded.

Based on the selection criteria, 7,656 cases were identified and matched to 76,304 controls.For each case, up to 10 controls were matched based on age, gender, geographic region and the date when the controller medication was initially dispensed.

In addition, the researchers identified four "types" of IAC exposure: active, immediate past, past and never, and dosage was measured for patients who had been exposed to IACs. When determining any association between IAC use and arrhythmias, the researchers also controlled for asthma severity, concomitant use of other asthma medications and medications with anticholinergic effects, and other existing illnesses.

At the conclusion of their study, the researchers found that active use of IACs was associated with a 1.56-fold increase in arrhythmia risk compared with non-active users and non-users of IACs.

The risk of arrhythmias varied based on the type of anticholinergic, as

well as the dose. Active users of the anticholinergic ipratropiumhad a higher risk of arrhythmias, while the risk estimates for active users of tiotropium and active users of a combination of ipratropium andshort-acting beta agonists(SABAs), another type of asthma medication, were not statistically significant.

In addition, active users of IACs on high doses had a 69 percent increase in risk compared to non-users, while the risk for active users on low doses was not statistically significant.

"While we did find an increase in the risk of events associated with the use of anticholinergics, the overall number of events we found was relatively small," Dr. Lee said. "Therefore, the absolute risk of an event for an individual patient is relatively low.

"In addition, most of the patients in our analysis that were using IACs were using ipratropium and not tiotropium, which has been the focus of the recent studies," he added. "It will be important to determine if the risk we observed with ipratropium is seen in patients using tiotropium when there is more use of tiotropium in the asthma population."

Finally, Dr. Lee said the results of this study may aid both clinicians and patients in deciding which asthma medication to use.

"Because of the potential risks with other asthma controller medications, it is important that patients and providers are aware of all of the potential risks and benefits for each of the classes of medications so they can make more informed treatment decisions," he said.

More information: "Increased Risk Of Arrhythmias Associated With Inhaled Anticholinergics In Children, Adolescents, And Young Adults With Asthma" (Session C102, Tuesday, May 22, Room 2014, Moscone Center; Abstract 28035)

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