Medical Xpress

Use of acid-suppressive medications associated with increased risk of hospital-acquired pneumonia

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An estimated 40 percent to 70 percent of hospitalized patients receive some form of acid-suppressive medication, whether their condition merits it or not.

Hospitalized patients who receive acid-suppressive medications such as a proton-pump inhibitor have a 30 percent increased odds of developing pneumonia while in the hospital, according to a study in the May 27 issue of *JAMA*.

With the introduction of proton-pump inhibitors, used primarily in the treatment of ulcers and gastroesophageal reflux disease, the use of acid-suppressive medications has increased significantly over the last several years, with estimates that between 40 percent and 70 percent of

hospitalized patients receive some form of them. But this high use in the inpatient setting has been of concern for several reasons, including use for indications that are not supported by research and data suggesting an increased risk for community-acquired pneumonia with use in outpatient settings, according to background information in the article.

Shoshana J. Herzig, M.D., of Beth Israel Deaconess Medical Center, Boston, and colleagues examined the association between acid-suppressive medication use and hospital-acquired pneumonia. The study included data on patients who were admitted to a large, urban, academic medical center from January 2004 through December 2007, including patients who were at least 18 years of age, hospitalized for 3 or more days, and not admitted to the intensive care unit. Acid-suppressive medication use was defined as any order for a proton-pump inhibitor or histamine2 receptor antagonist. The study included data on 63,878 hospital admissions.

Overall, acid-suppressive medication was ordered in 32,922 admissions (52 percent). Of the group who received these medications, 27,236 (83 percent) received proton-pump inhibitors and 7,548 (23 percent) received histamine2 receptor antagonists, with some exposed to both. The majority of these medications were ordered within 48 hours of admission (89 percent).

Hospital-acquired pneumonia occurred in 2,219 admissions (3.5 percent). The unadjusted incidence of hospital-acquired pneumonia was higher in the group exposed to acid-suppressive medication relative to the unexposed group (4.9 percent vs. 2.0 percent). After further analysis and adjusting for potential factors that could influence the outcomes, receiving acid-suppressive medications was associated with a 30 percent increased odds of hospital-acquired pneumonia. The association was significant for proton-pump inhibitors but not for histamine2 receptor antagonists.

The researchers write that acid-suppressive medications have been thought to increase the risk of pneumonia via modification of upper gastrointestinal bacteria, and, as a result, respiratory bacteria.

"These results occur in the context of an increasing body of literature suggesting an association between acid-suppressive medication and pneumonia. Further scrutiny is warranted regarding inpatient prescribing practices of these medications," the authors conclude.

More information: JAMA. 2009;301[20]:2120-2128.

Source: JAMA and Archives Journals (news : web)