

# Proton pump inhibitors increase risk of heart attacks for patients on common cardiac drug

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Patients taking the common cardiac drug clopidogrel following a heart attack are at a significantly higher risk of a recurrence if they are also taking widely used acid-lowering medications called proton pump inhibitors, a new study published online in *CMAJ* has found.

The study, conducted over 6 years in thousands of heart attack patients aged 66 years and older, found a significantly increased risk of readmission for heart attacks if patients were taking one of several proton pump inhibitors, including omeprazole, lansoprazole, or rabeprazole. The investigators found no such association with the proton pump inhibitor pantoprazole or with other acid-lowering medications called H2 receptor antagonists.

Previous research indicates that proton pump inhibitors other than pantoprazole can block the liver's ability to convert clopidogrel to its active form, a critical step required for clopidogrel's anti-platelet effect.

These findings could have significant public health implications. Proton pump inhibitors (PPIs) are among the most commonly prescribed drugs in the world, with more than 12.4 million prescriptions in Canada alone in 2004. Clopidogrel is the second-highest selling drug in the world, with annual sales totalling \$7.3 billion.

Recent guidelines from the American Heart Association, the American College of Gastroenterology, and the American College of Cardiology recommend proton pump inhibitor therapy for many patients following a

heart attack to prevent bleeding from the stomach, including all patients aged 60 years or older receiving ASA. Because clopidogrel and ASA are often prescribed together following a heart attack, it is probable that millions of patients worldwide will take a proton pump inhibitor with clopidogrel.

"Depending on the exposure to these drugs following a heart attack, we estimate that 5% to 15% of early readmissions for myocardial infarction among patients taking clopidogrel could be the result of this drug interaction," writes Dr. David Juurlink, Head of the Division of Clinical Pharmacology and Toxicology at Sunnybrook Health Sciences Centre and lead author of the study, which was conducted at the Institute for Clinical Evaluative Sciences (ICES). "These findings highlight a widely unappreciated, extremely common and completely avoidable drug interaction in a population of patient at very high risk of reinfarction."

"Our findings suggest that indiscriminate treatment with a proton pump inhibitor could result in thousands of additional cases of recurrent myocardial infarction each year, all of which could be avoided simply by selectively prescribing pantoprazole in patients receiving clopidogrel who require treatment with a proton pump inhibitor," write the authors.

Paper: <http://www.cmaj.ca/cgi/rapidpdf/cmaj.082001>.

Source: Canadian Medical Association Journal

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