

Proton Pump Inhibitors Diminish Effectiveness of Clopidogrel after Coronary Stenting in Patients with Diabetes

Based on an abstract by researchers at Medco Health Solutions, Inc. and the Indiana University School of Medicine; presented on June 6, 2009 at the American Diabetes Association’s 69th Scientific Sessions.

Background

Clopidogrel, also known by the brand name Plavix®, is one of the most commonly prescribed antiplatelet medications used to treat heart disease. Patients on clopidogrel are often prescribed proton pump inhibitors (PPIs) to prevent stomach and intestinal bleeding complications related to clopidogrel. PPIs have been shown to interfere with an enzyme needed to activate clopidogrel in the body and therefore reduce the drug’s effectiveness. For patients with diabetes, this interaction may be particularly important since they are already at high risk for adverse cardiovascular events (CV) and may be less responsive to clopidogrel. This study assesses the impact of PPIs on the effectiveness of clopidogrel to prevent recurrent CV events after coronary stenting in patients with diabetes.

Data and Methods

This retrospective study used medical and pharmacy records from the National Medco Integrated Database System which includes 19 million insured patients. We analyzed 4,005 diabetic patients who had undergone percutaneous coronary intervention (PCI) with stenting and divided the sample into two cohorts, one that was taking clopidogrel alone (N=2,238) and the other group that was using a PPI in conjunction with clopidogrel (N=1,767). We then measured the rate of hospitalizations among each group due to myocardial infarction or unstable angina, stroke/transient ischemic attack, PCI/coronary artery bypass graft, or CV-related death over a 12-month period. Patients on PPIs were older, more often female, and had greater baseline comorbidity. Event risk was determined by Kaplan-Meier analysis and hazard ratios from multivariate Cox models.

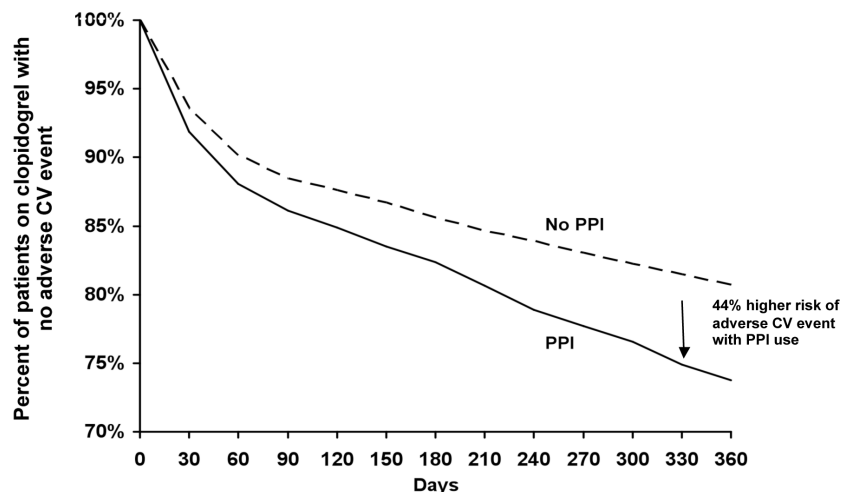
Results

The use of a PPI in conjunction with clopidogrel resulted in a higher incidence of major adverse cardiac events within a year of coronary stenting among diabetic patients. Patients using a PPI in conjunction with clopidogrel had a 44% higher relative risk of a CV event than those taking clopidogrel alone. Of those on both medications, 26.7% experienced a CV event within a year, while only 19.7% of patients on clopidogrel alone had a CV event during the study period. When individual CV event risks were evaluated, the risk was highest for myocardial infarction/unstable angina, with patients on both PPIs and clopidogrel having a 66% higher likelihood of experiencing this adverse event than patients not on a PPI.

Discussion

This study is the latest in a series showing the adverse effects of using PPIs with clopidogrel. Our findings suggest that a clinically significant drug interaction between PPIs and clopidogrel results in a higher incidence of major adverse CV events within one year of stenting for patients with diabetes. Taking PPIs and clopidogrel may be particularly deleterious for diabetes patients given their high rate of cardiovascular disease and the fact that they are less responsive to clopidogrel treatment even when PPIs are not being used. To avoid further diminishing the effectiveness of clopidogrel with the presence of a PPI, and in keeping with the latest recommendations from the Society for Cardiovascular Angiography and Interventions (SCAI), clinicians treating these patients should consider using an H2 blocker or antacids instead of prescribing a PPI to patients, including those with diabetes, who are on clopidogrel.

CV Event Risk With and Without PPI Use



For more information, visit medcoresearch.com.