

Demonstrating that ICES drug safety research has changed physician prescribing behaviour

ISSUE

The blood thinner clopidogrel is widely used for the treatment of ischemic heart disease and stroke. Proton pump inhibitors (PPIs) are often co-prescribed to offset the risks from gastric bleeding associated with the use of blood thinners. In the late 2000s, concerns were raised of an increased risk of recurrent heart attacks in patients co-prescribed a PPI and clopidogrel.

STUDY



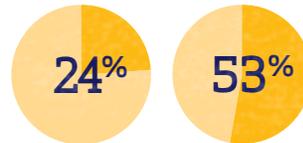
2009: A highly-publicized ICES population-wide study showed that patients who took clopidogrel following a heart attack were at significant **risk of a recurrent heart attack** if they were also taking certain PPIs. Unlike other studies, the ICES paper determined that one PPI, pantoprazole, was not tied to this higher risk.

2015: Assessed the impact of the 2009 publication on physician prescribing behaviour, in particular, on **whether there was a shift in how many patients were prescribed pantoprazole (rather than another PPI) while taking clopidogrel.**



FINDINGS

Before the 2009 study, pantoprazole represented only **24%** of all PPI prescriptions dispensed to patients receiving clopidogrel. Only nine months after the study, the proportion of pantoprazole use had rapidly expanded to **53%**.



The 2015 study demonstrated that other 2009 studies and an FDA warning about clopidogrel and PPI risk did not differentiate between PPI formulations, so this **shift could only be attributed to the extensive media attention surrounding the ICES study.**

IMPACT



Confirmed the power of ICES' large linked **data holdings to investigate system-wide temporal trends.**



Provided more clarity about the differentiated **risks of PPI formulations** for patients receiving clopidogrel.



Demonstrated that news campaigns can **influence physician prescribing behaviour.**

Juurlink DN, Gomes T, Ko DT, Szmítko PE, Austin PC, Tu JV, Henry DA, Kopp A, Mamdani MM. A population-based study of the drug interaction between proton pump inhibitors and clopidogrel. *CMAJ*. 2009; 180(7):713-8. ([Abstract](#))
Juurlink DN, Gomes T, Paterson JM, Hellings C, Mamdani MM. Trends in the coprescription of proton pump inhibitors with clopidogrel: an ecological analysis. *CMAJ Open*. 2015; 3(4):E428-31. ([Abstract](#))