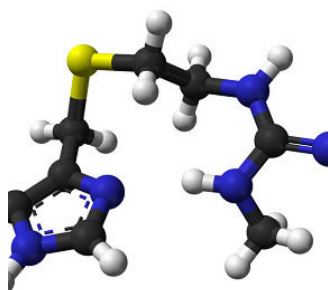


## Receptor blockers superior to proton pump inhibitors in preventing GI bleeding



Proton pump inhibitors (PPIs) and histamine type-2 receptor blockers (H2Bs) are the main stress ulcer prophylactic agents prescribed by critical care providers. According to results of a new study, H2Bs were robustly and consistently associated with significantly lower risk of clinically important gastrointestinal bleeding (CIGIB) compared to PPIs in critically ill adults.

"Unlike findings from clinical trials, PPIs were associated with higher risk of CIGIB compared to H2Bs in clinical practice. The robust association of H2Bs with fewer episodes of CIGIB in a second large clinical practice cohort supports the conclusions of cost-effectiveness studies that favour the use of a H2B over a PPI for stress ulcer prophylaxis of at-risk critically ill adults," write authors of the study to appear in the journal CHEST.

Craig M. Lilly, MD, Professor of Medicine, Anaesthesiology, and Surgery, University of Massachusetts Medical School, and co-authors performed a multicentre study in a geographically dispersed population of adults cared for in United States non-federal intensive care units (ICUs) that had near universal adherence to guidelines for stress ulcer (SU) prophylaxis (98%). Participants had at least one SU risk factor and received a PPI or H2B for three or more days. The study design included adjustment for acuity that is specific for critically ill adults, analytical methods that balance measured factors that differed among the groups, and techniques that account for unknown factors that cluster with the prophylaxis prescribing habits of individual ICUs.

Among 70,093 patients at risk, 49,576 (70.7%) received prophylaxis for at least three days and 424 patients (0.6%) met the definition for a CIGIB. The hazard for CIGIB was two times greater for PPI compared to H2B users (adjusted hazard ratio (HR): 1.82, 95% CI: 1.19-2.78), (HR: 2.37, 95% CI: 1.61-3.5). In addition, sensitivity analyses failed to detect any plausible scenario in which PPIs were superior to H2B for prevention of a CIGIB.

"The findings of association of greater effectiveness of H2B than PPI prophylaxis are highly internally consistent and robust," the authors say. "We were not able to attribute the difference to differences of acuity by adjustment or PSM [propensity score matching] analysis. In this study, two days of exposure yielded similar results to three day exposure (HR: 2.10, 95% CI: 1.65-2.67). This result was similar to MacLaren's study that found PPIs use for two days to be associated with higher odds of GIB compared to H2Bs (OR: 2.24, 95%CI: 1.81-2.76)."

The study has strengths and important limitations. The authors say the use of statistical approaches that assessed for confounding by imbalance of known factors as well as unknown factors related to the tendency of an ICU to preferentially prescribe a PPI provided consistent estimates of the comparative effectiveness of the alternative methods of prophylaxis for CIGIB. "However, these analyses do not prove that such a factor was not present," the authors explain. The key limitation to the study is that the exposure to the prophylactic agent (PPI versus H2B) was not randomly assigned.

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