

Drug Information Center / KAUH

Does Patient on chronic use of NSAID have to take PPI as ulcer prophylaxis?

Non-steroidal anti-inflammatory drugs (NSAIDs) are valuable agents in the treatment of arthritis and other musculoskeletal disorders, and as analgesics in a wide variety of clinical scenarios.

NSAIDs work on a chemical level. They block the effects of special enzymes -- specifically Cox-1 and Cox-2 enzymes. These enzymes play a key role in making prostaglandins. By blocking the Cox enzymes, NSAIDs stop your body from making as many prostaglandins. This means less swelling and less pain.[1]

NSAIDs can cause damage to the gastroduodenal mucosa via several mechanisms, including the topical irritant effect of these drugs on the epithelium, impairment of the barrier properties of the mucosa, suppression of gastric prostaglandin synthesis, reduction of gastric mucosal blood flow and interference with the repair of superficial injury. The presence of acid in the lumen of the stomach also contributes to the pathogenesis of NSAID-induced ulcers and bleeding, by impairing the restitution process, interfering with homeostasis and inactivating several growth factors that are important in mucosal defense and repair. [2]

Proton pump inhibitors (PPIs) are medicines that work by reducing the amount of stomach acid made by glands in the lining of your stomach. [3]

A study done by Frank L. Lanza done on February 2009 about the risk Factors for NSAID-Related Complications ; concluded the following:

- i. Risk factors for NSAID-related GI complications include a previous GI event, especially if complicated, age, and concomitant use of anticoagulants, corticosteroids, other NSAIDs including low-dose aspirin, high-dose NSAID therapy, and chronic debilitating disorders, especially cardiovascular disease.
- ii. Low-dose aspirin (LDA) is associated with a definite risk for GI complications.
- iii. H. pylori infection increases the risk of NSAID-related GI complications.
- iv. There is a potential advantage of testing for H. pylori infection and eradicating the infection if positive in patients requiring long-term NSAID therapy. Whether co-therapy with a gastroprotective agent is needed after eradication of H. pylori depends on individual patients' underlying gastrointestinal risk.

Until Now , the analysis of data on the role of *H. pylori* infection as a risk factor for GI bleeding in NSAID users was complicated by a failure, in many studies, to account for the variable influence of multiple, coexistent risk factors. Not surprisingly, therefore, several studies yielded conflicting results. To date, there are data to show that *H. pylori* increases, has no effect on, and decreases the risk of ulcer in NSAID users. [4]

Another study done by Jia-Qing Huang, MD, Subbaramiah Sridhar, FRCPC, Prof Richard H Hunt, FRCP in January 2002 concluded that ; both *H pylori* infection and NSAID use independently and significantly increase the risk of peptic ulcer and ulcer bleeding. There is synergism for the development of peptic ulcer and ulcer bleeding between *Hpylori* infection and NSAID use. Peptic-ulcer disease is rare in *H pylori* negative non-NSAID takers.[5]

One study done by Yuki Sakamoto, Tadashi Shimoyama, Satoru Nakagawa in 2014 Jun concluded that The use of PPI treatment is advisable in order to prevent the discontinuation of LDA or NSAIDs due to the development of gastrointestinal disorders in elderly patients with atrophic gastritis.[6]

In-Conclusion: there are no studies strongly supports the use of PPI in NSAID users without risk factors, but it may be advisable in cases known to have risk factors to develop ulcer.

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