Impact of pharmacist intervention in minimizing inappropriate use of Proton Pump Inhibitors in the elderly

Laqui, Aileen, PharmD Candidate1; Nomura, Stanley, PharmD2; Ip, Tina, PharmD Candidate1; Schwartz, Miriam, M.D.1

1Western University of Health Sciences  2Veterans Home of California, West Los Angeles

Problem: What is all the fuss about PPI use?

Factors leading to PPI overuse

- Very effective for reducing stomach acid
- Relatively benign when used as recommended
- Usual maximum course of therapy is 4 to 8 weeks
- Marketing and OTC status has made it readily available
- Commonly used for almost any type of gastric acid ailment
- Actual GERD prevalence in the U.S. ranges from 18% - 27.8%
- Often continued after hospitalization regardless of need

Despite FDA alerts/concerns of PPI long-term use

- Increased risk of fractures – hip, wrist, spine (problematic in the elderly due to an already increased risk for falls)
- Increased risk of Clostridium difficile-associated diarrhea (problematic in the elderly due to an already diminished immune system)
- Increased risk of hypomagnesemia → cramps, arrhythmias (problematic in the elderly due to an already diminished immune system)
- On 4/30/14, Public Citizen filed a lawsuit against the FDA demanding that the long-term side effects of PPIs be upgraded to a black box warning – the issue will not go away

And CMS requires evaluation of appropriate PPI use

- CMS included PPIs in F-tag 329, Unnecessary Drugs
- CMS expects PPI prescribing to meet one of the FDA approved indications and dosing options
- CMS expects justifying documentation if used for more than 12 weeks
- F-tag 329 citations are among the most prevalent assessed
- CMS also warned about adverse reactions and risks with long-term use of PPIs

Stomach acid is a necessary bodily function!

- High acidity poses as a barrier to infections
- Lack of acid is associated with gastric polyps
- The effects of PPI therapy on the gastric mucosa, hypersecretion, parietal cell proliferation, EC1 cell hyperplasia, progression of H. pylori gastritis and the development of atrophy may predispose to the formation of gastric polyps
- Acidic environment of stomach is needed for proper digestion
- Paradoxically, sufficient stomach acid helps prevent GERD
- Proper digestion of food allows for proper stomach emptying leading to a decrease risk of gastritis and GERD

Objectives: How do we unlock the problem?

- Identify unnecessary use of PPI and discontinue PPI treatment if possible
- Determine whether an approach such as tapering off PPI therapy is more successful than discontinuing abruptly in those who have been on long-term PPI therapy (> 1 year)

How do we unlock the problem?

Three main reasons for PPI misuse

1) The key is pharmacist drug regimen reviews
- Prioritization and limited time are often the reason that PPI misuse is overlooked. Through the drug regimen review, the pharmacist can bring attention to this, but that alone is not enough
- Adverse effects of long-term PPI use are insidious

2) The key is pharmacist education on PPI potential harm
- Adverse effects from PPI misuse are those that the elderly may associate with old age so the connection is not obvious. Getting the message out on the long-term side effects to patients is lacking so education is imperative—something a pharmacist is trained to do.
- Patients feel the PPI is needed or the burning will return

3) The key is pharmacist monitoring of PPI taper progress
- Patients do not want to taper off PPIs. A pharmacist can play key role in monitoring the progress of a controlled, gradual tapering off of PPIs. In cases where abrupt discontinuation failed, tapering was proven to be 80% effective in our study.

Alternative treatments in place of PPIs

1. H2RAs (Histamine, Receptor Antagonist)
   - PPIs irreversibly inhibit proton pumps to stop the production of acid, which contributes to its long-term adverse effects. H2RAs only block gastric acid secretion and do not affect pepsin secretion making this class of drug a safer choice.
   - Antacids
     - Antacids provide quick, temporary relief from "burning" by directly neutralizing the acid in the stomach.
   - Other supplementary aids
     - Lack of sufficient amount of digestive enzymes can be the cause of improper digestion. When food stays undigested, stomach emptying is delayed & more acid is produced, increasing chance of burning & GERD.

Benefits

1) Minimizing of potential negative health effects from PPIs
2) Cost savings from discontinuance of unnecessary medications and avoidance of associated health problems
3) Greater compliance with CMS F-tag 329
4) Likely improved digestive process for the resident
5) Enhanced utilization of resources, namely the pharmacist

Acknowledgements/References

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