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## EC GASTROENTEROLOGY AND DIGESTIVE SYSTEM Editorial

## **PPI Use: A Tougher Pill to Swallow**

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Proton Pump Inhibitors (PPI) have become a common place in the medicine cabinets of millions of Americans and people worldwide. They continue to be among the top revenue producing medications for the pharmaceutical industry since their introduction in the late 1980's. With direct consumer advertisement using nifty names easy to recall, or color association of pills, they have empowered the public in informing them that a pill exists which will alleviate their symptoms of reflux and heartburn-of course after consulting with their doctor. The patients have become so empowered they are now can even purchase over the counter PPI's for which they can treat their medical ailments. The world is exactly as depicted in some commercials as having a calming breeze blowing by or a walk along the beach filled with laughter and giddiness once symptoms have resolved. However, lately much attention has been given to PPI class medications since this once panacea has been associated with untoward health effects.

Recently, much attention has been given to PPI's from domestic and international researchers which have been able to demonstrate a association, not causation, between dementia, increased cardiovascular risk, renal injury, electrolyte abnormalities, increased infections, gut dysbiosis to name a few, and use of PPI's. Albeit these studies range from case reports to case controls to meta-analysis their data holds a valid argument about the results. On the other hand, on closer inspection of the data many can rebut the studies are fraught with confounding variables; most notably advanced age and pre-existing comorbid conditions. A target audience composed of mainly people without formal training in pharmacology and medicine is often unaware of this while watching a thirty second commercial while watching television after dinner. Often, the sedentary lifestyle is often an underlying reason for developing symptoms along with other behaviors such as consumption of foods containing high fat content, caffeine in addition to elevated Body Mass Index, wearing tight fitting articles of clothing, and nicotine consumption. Judging from my personal clinical interactions, some patients become frantic after reading results from a internet search of the PPI they have been using for decades and aren't sure as to why they are still on it have read they can develop Alzheimer's Disease, Kidney Injury, hypomagnesaemia, bone fractures. Others exhibit the opposite of the spectrum and become upset after being told the medication they have been taking for years without a clearly documented indication will be discontinued citing that "that's the only thing that helps and if I don't take it I will get the heartburn back!" These cases are admittedly in the minority but are also often associated with certain lifestyle and behavioral choices (i.e. sedentary lifestyle, high fat diet, smoking, obesity) which are present.

This has also caught the attention of system administrators who are responsible for figuring out how to reduce unnecessary length of stay in hospitals caused by iatrogenic reasons such as *Clostridium difficile* associated diarrhea and pneumonia; of which are not reimbursed for the treatment or additional stay. Recent studies conducted among large university based hospital systems and local community hospitals identified relationships between PPI use and increase in infection rates. More accountability has been placed on the treating physician on validating the medical reason why they wish to use a PPI rather than an alternative.

While we will still be using PPI's for now we also must make a use of the Pharmaceutical industries title for prescriber's as "though leaders" and educate our colleagues, patients, and public that PPI's remain a prudent treatment option which is not free of potential adverse affects under the appropriate clinical circumstances. The medical community should make greater efforts to reduce unnecessary polypharmacy and to engage their patients through discussion and education on the appropriate treatment options. It is up to the patient/ consumer to involve their medical professional in shared decision making when considering beginning or continuing a medication.

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