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Proton Pump Inhibitors (PPIs): A Review of the Efficacy, Usage, and Current Literature Recommendations

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The stomach is the primary location of digestion, which is achieved through the secretion of gastric acid. In reviewing the research, there appears to be a strong correlation to long-term use of proton pump inhibitors (PPIs), which are currently being used to treat acid-related symptoms. Research is currently being conducted on a new class of reversible PPIs, although their effects are not yet investigated or fully understood. There may be drug interactions leading to decreased absorption of some drugs in patients who use PPIs. Van der Hoorn et al. (2015) determined that PPI use was associated with a substantially increased risk of requiring osteoporosis medication (OR 0.78; 95% CI 0.62–0.98) and that avoiding PPIs may contribute to the prevention of dementia. Lazarus et al. (2013) concluded that PPI use is an independent risk factor for kidney failure, myocardial infarction, and gastrointestinal bleeding, and that use of PPI is associated with an increased risk of dementia and that avoiding PPIs may contribute to the prevention of dementia. Lazarus et al. (2013) concluded that PPI use is an independent risk factor for kidney failure, myocardial infarction, and gastrointestinal bleeding, and that use of PPI is associated with an increased risk of dementia and that avoiding PPIs may contribute to the prevention of dementia.

Research Questions

- In patients with GERD, duodenal and pyloric ulcers, or Helicobacter pylori infections, is treatment with PPIs more efficacious than treatment with histamine H2 receptor antagonists?
- In patients with GERD, duodenal and pyloric ulcers, or Helicobacter pylori infections, is treatment with PPIs more efficacious than surgical treatment?
- Does long-term treatment with PPIs increase a patient’s risk for kidney failure, dementia, myocardial infarction, or osteoporosis?

Literature Review

Mechanism of Action of Proton Pump Inhibitors

Gastric acid secretion is regulated by the proton pump in the parietal cell. The proton pump is a complex multidrug transporter that is responsible for the acid secretion of the stomach. It is a transmembrane protein that is composed of two subunits, the alpha and beta subunits. The alpha subunit is responsible for the transport of protons across the cell membrane, and the beta subunit is responsible for the transport of potassium ions across the cell membrane. The proton pump is activated by the parietal cell stimuli, which lead to the activation of the proton pump and the secretion of gastric acid. The proton pump is activated by the parietal cell stimuli, which lead to the activation of the proton pump and the secretion of gastric acid.

Proton pump inhibitors (PPIs) are a class of medications that inhibit the proton pump at the final step of acid secretion. PPIs irreversibly bind to the active proton pumps at the final step of acid secretion and are activated by the proton pump substrates.

Possibility of Complications of Proton Pump Inhibitor Use

There may be drug interactions leading to decreased absorption of some drugs by PPIs. H2-receptor agonists are less effective in patients requiring long-term treatment. H2RAs are not suitable for patients who require rapid relief of symptoms. They may also induce a more rapid change in the pH of the stomach and duodenum.

Statement of the Problem

Proton pump inhibitors are very commonly prescribed medications throughout the world. H2-receptor antagonists are less effective in patients requiring long-term treatment. H2RAs are not suitable for patients who require rapid relief of symptoms. They may also induce a more rapid change in the pH of the stomach and duodenum. In yet another study, Lazarus et al. (2016) concluded that PPI use is an independent risk factor for kidney failure, myocardial infarction, and gastrointestinal bleeding, and that use of PPI is associated with an increased risk of dementia and that avoiding PPIs may contribute to the prevention of dementia.

References

- Gomm et al. (2013) showed that PPI use was associated with an increased risk of osteoporosis in patients (OR 2.24; 95% CI 1.59–3.13) and fractures (adjusted sub-hazard ratio 2.79; 95% CI 1.65–4.66).
- Van der Hoorn et al. (2015) also determined that PPI use (OR 0.78; 95% CI 0.62–0.98) and that avoiding PPIs may contribute to the prevention of dementia.
- Boren, L., Bredberg, P., & Nilsson, K. (2017). Proton pump inhibitors in the treatment of peptic disease by either reducing the aggressive factors, which are frequently utilized for the treatment of acid-related symptoms. (Kahrilas et al., 2008) and current literature on PPIs.
- Kahrilas et al. (2008) noted that use of PPI is associated with an increased risk of dementia and that avoiding PPIs may contribute to the prevention of dementia.
- Van der Hoorn et al. (2015) also determined that PPI use (OR 0.78; 95% CI 0.62–0.98) and that avoiding PPIs may contribute to the prevention of dementia.
- Lazarus et al. (2015) concluded that PPI use is an independent risk factor for kidney failure, myocardial infarction, and gastrointestinal bleeding, and that use of PPI is associated with an increased risk of dementia and that avoiding PPIs may contribute to the prevention of dementia.
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