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Letters to the Editor
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The Challenges of PPIs in General Practice: Addressing Misuse and Research Gaps

Dear Editor:

Proton pump inhibitors (PPIs) are among the most frequently prescribed medications, widely used for the treatment of gastroesophageal reflux disease (GERD), peptic ulcer disease, dyspepsia, and the prevention of gastric damage by non-steroidal anti-inflammatory drugs (NSAIDS). They act by irreversibly inhibiting the H^+/K^+ ATPase enzyme (also known as the gastric proton pump) located on the parietal cells of the stomach thereby significantly reducing gastric acid secretion. Although PPIs are generally well tolerated but prolonged use may lead to adverse effects due to sustained acid suppression and interaction with hepatic cytochrome P450 enzymes [1, 2]. (PPIs) are among the most widely prescribed medications globally, owing to their strong acid-suppressing ability and generally favorable safety perception. However, concerns persist regarding their long-term use, particularly their potential association with gastric cancer. Although this link remains a topic of ongoing debate, emerging evidence suggests that extended PPI use may contribute to several gastrointestinal complications, including Clostridium difficile infections, the proliferation of drug-resistant bacteria, and an increased risk of gastric malignancies [3].

The prescribing of PPIs in general practice has been associated with increased concerns regarding patient safety and clinical rationality through excessive and inappropriate prescribing. Research indicates that the likelihood of PPI prescriptions containing a documented indication was only 36%, and long-term use was more common in patients who did not satisfy the criteria for continuing therapy, despite the absence of guideline criteria [4]. Nevertheless, patients have been found to experience neglected complications as a result of both the use and misuse of PPIs. Furthermore, patients have been compelled to self-medicate without medical supervision or indication due to the simple availability of these drugs over the counter and the lack of public awareness. This trend, which is expanding globally, poses a substantial threat to public health. Consequently, we strongly advocate that clinicians conduct a comprehensive assessment of the advantages and disadvantages of PPI therapy before commencing treatment [5]. Therefore, it is essential to implement rational prescribing practices to advance and improve public health education. Additionally, it has been determined that discrepancies among drug interaction databases further complicate the clinical decision-making process. Trifirò et al. reported a substantial discrepancy between sources regarding PPI interactions, which emphasizes the importance of unified, unambiguous prescription guidelines [6]. Some articles continue to underline that PPI continuation is often habitual, with minimal reevaluation, despite these distinctions [7]. Additionally, safety data from research indicates that the prolonged use of prokinetic inhibitors (PPIs) may be associated with an increase in adverse events, such as nutrient malabsorption, gastrointestinal infections, and bone demineralization [4]. These results exclusively offer a compelling rationale for the description of standard protocols in primary care. Systematic medication evaluations, targeted training programs for general practitioners (GPs), and alignment with validated indication criteria are all necessary components of future interventions to guarantee that the long-term use of PPIs is both justified and optimized for patient safety.

This letter aims to accentuate the concerns about clinical rationale and long-term side effects, such as gastrointestinal infections, nutrient malabsorption, bone demineralization, and possible stomach cancers, that are raised by the comprehensive and inappropriate use of proton pump inhibitors (PPIs). Its emphasis on the necessity for established standards and optimal prescribing practices is further supported by

discrepancy in medication interaction databases. Many prescriptions fall short of substantiate reasons, and ongoing use frequently remains misaligned from prime standards, further exacerbated by easy over-the-counter availability. Disparities in drug interaction databases from established criterion, stress upon the urgency over unified guidelines.

To address these issues, it is imperative to address the following research gaps: standardized drug interaction data, determining the full impact of self-medication, identifying long-term negative consequences in primary care, creating practical de-prescribing protocols, assessing the efficacy of interventions such as systematic medication reviews and targeted GP training, and understanding the specific causes of inappropriate prescribing. Future initiatives must focus on these regions to minimize the burden of repercussions from the improper and excessive use of PPIs and to optimize pharmacotherapy while ensuring patient safety.

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