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Prescribing of Proton Pump Inhibitors in a Major Teaching Hospital

O. J. Jeremiah[1], R. Greene[2], P. Ging[1] and J. Brown[1]

1. Pharmacy Department, Mater Misericordiae University Hospital, Eccles St, Phibsborough Dublin 7, Ireland.
2. School of Pharmacy, Royal College of Surgeons in Ireland, Stephen's Green, Dublin 2, Ireland.

Dear Editor,

Proton pump inhibitors (PPIs) are among the most frequently used medications worldwide [1]. Given their utility, safety profile, tolerability & efficacy, PPIs have become a cornerstone in the treatment of certain acid-related upper gastrointestinal disorders. Inappropriate prescribing and prolonged use beyond recommended guidelines are leading to adverse effects and increased healthcare costs. Known PPI-associated adverse effects include hypomagnesaemia, hypernatremia, Vitamin B_{12} deficiency, Iron deficiency anemia, increased risk of infections (gastrointestinal and respiratory), bone fractures in older patients, kidney disease (acute and chronic), among others [2].

Following hospital audit committee approval, a point prevalence clinical audit was conducted, over an 8-week period, to evaluate proton pump inhibitor (PPI) prescribing within the Mater Misericordiae University Hospital (MMUH). The aim was to identify potentially inappropriate prescribing, based on MMUH PPI prescribing and national / international guidelines [3], and provide recommendations to curb this.

Data was collected, from two surgical wards and two medical wards, a total of 97 patients. Each patient's drug chart and clinical notes were reviewed to determine PPI use, dosing regimens, initiation pre-/post-admission, gastro-irritant drug use, drug interactions and potentially related co-morbidities.

Of the 97 patients reviewed, 68 (70%) were prescribed PPIs, with 52 (76%) initiated preadmission. Pantoprazole was the most frequently [40(59%)] prescribed PPI; followed by esomeprazole and lansoprazole, each prescribed in equal proportions [14 (20.6%)]. Of the PPI prescriptions, 48 (70.6%) either lacked a clear indication [24 (35.3%)] or were at doses exceeding guidelines for the specified indications [24 (35.3%)]; PPI indications identified included duodenal/gastric ulcer [7 (10.3%)], gastro-oesophageal reflux disease [3 (4.4%)], Barrett's oesophagus/oesophageal ulcer [4 (5.9%)] and gastro protection (prophylaxis) in patients on gastro-irritant drugs & having an additional risk factor [30 (44.1%)]. 32 (47%) had a proton-pump inhibitor-associated adverse event (PAAE). Hypomagnesaemia [13 (19%)] was

the most frequent PAAE. Other potential PAAE (n) were acute kidney Injury (7), hyponatraemia (6), pneumonia (6), among others.

The prevalence of inappropriate PPI prescribing observed in the audit was similar to that of a previous study [4], suggesting that it remains an ongoing issue. As such, interventions to effectively address the problem are required. The high proportion of PPI prescriptions that were initiated pre-admission suggests that a significant number of patients may be undergoing long-term treatment. This highlights the importance of periodic re-evaluation of PPI therapy to ensure appropriate use and minimise potential risks. A substantial proportion of patients who received PPIs at doses higher than recommended were prescribed PPIs for gastro-protection (prophylaxis). This emphasises the necessity for guideline-concordant prescribing to avoid unnecessary exposure to higher medication doses. Evidence of concurrent PAAEs highlights the importance of careful monitoring and consideration of alternative management strategies, especially in patients at risk.

In conclusion, there remains a yet unmet need to tackle inappropriate PPI prescribing. Following the audit, a staff-wide communication of the findings and safe PPI prescribing recommendations were distributed to stakeholders. An information poster was also circulated hospital-wide with pharmacist-led follow-up and interventions. Ensuring appropriate PPI use can mitigate risks and reduce healthcare burden.

Declaration of Conflicts of Interest:
None declared.

Corresponding Author:
Olaitan J. Jeremiah,
Department of Pharmacy,
Mater Misericordiae University Hospital,
Eccles Street, Phibsborough,
Dublin 7.
E-Mail: olaitanjeremiah@mater.ie.

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