

P.8 A ONE HEALTH PERSPECTIVE ON THE CLINICAL, BEHAVIOURAL, AND ENVIRONMENTAL RISKS OF CHRONIC PROTON PUMP INHIBITOR USE IN THE ELDERLY[†]

Maria Deolinda Auxtero¹

1. Egas Moniz Center for Interdisciplinary Research (CiEM), Egas Moniz School of Health & Science, Caparica, Almada, Portugal

Emails: Maria Deolinda Auxtero (mauxtero@egasmoniz.edu.pt)

[†] Presented at the 7th International Congress of CiEM Empowering One Health to Reduce Social Vulnerabilities, Almada, 2-4 July 2025

The One Health concept, which recognizes the interdependence of human, animal, and environmental health, underscores the importance of protecting vulnerable populations such as older adults, who are particularly susceptible to environmental stressors, chronic illness, and the cumulative effects of polypharmacy. This study investigates the long-term use of proton pump inhibitors (PPIs) in community-dwelling older adults, focusing on clinical safety, lifestyle choices, and environmental implications. Data were collected from two consecutive cohorts assessed during 2023–2024 and 2024–2025, comprising 246 individuals aged 65 years and older. Among these, 80 participants (32.5%) were identified as chronic PPI users. Esomeprazole (20–40 mg) emerged as the most frequently prescribed agent, followed by pantoprazole (20–40 mg) and omeprazole (20 mg), with average treatment durations exceeding six months in most cases. The average age of PPI users exceeded 75 years. Polypharmacy was prevalent, with PPI users taking an average of 7.5 concurrent medications. A pharmacological review identified 293 moderate drug interactions (affecting 70% of PPI users) and 48 serious interactions (31.3%). Additionally, 28.8% of patients on PPIs were also prescribed corticosteroids, non-steroidal anti-inflammatory or other drugs associated with gastric toxicity, potentially justifying PPI co-prescription but also underscoring the need for regular benefit-risk assessments. In elderly patients, age-related pharmacokinetic changes increase the likelihood of adverse outcomes from prolonged PPI use, including nutrient malabsorption, increased infection risk, and potentially even cognitive decline. Emerging evidence suggests an association between chronic PPI use and heightened risk of dementia, reinforcing the call for cautious, individualized prescribing and ongoing therapy review. Importantly, PPIs are photosensitizing drugs that may contribute to UV-induced skin damage. Yet, in our analysis, 90% of users reported rarely or never using sunscreen, revealing a gap in preventive education. Lifestyle analysis showed additional behavioural risk factors: 6.25% of users were current smokers, 58.8% consumed coffee regularly, and 53.8% consumed alcohol—all of which can exacerbate gastrointestinal symptoms or interfere with drug metabolism, potentially prolonging or complicating treatment. Despite 83.8% of PPI users having a designated family doctor, the data suggest limited therapeutic reassessment and little emphasis on behavioural counselling, representing missed opportunities for deprescribing and lifestyle optimization. From an ecological perspective, PPIs are increasingly detected as emerging contaminants in wastewater and surface water. Their persistence in the environment raises concerns about their potential role in promoting antimicrobial resistance and disrupting aquatic ecosystems. Given the widespread and chronic nature of PPI use in aging populations, the ecological footprint of these pharmaceuticals cannot be overlooked. These findings highlight the need for a comprehensive, One Health-aligned approach to PPI prescribing in older adults. Interventions should include regular medication reviews, enhanced photoprotection education, and behavioural counselling to address modifiable lifestyle risks. Healthcare systems can lessen vulnerabilities and encourage patient-centred, sustainable care that is consistent with One Health principles by incorporating clinical, behavioural, and environmental factors into geriatric pharmacotherapy.

Keywords: ONE HEALTH; PROTON PUMP INHIBITORS; ELDERLY; POLYPHARMACY; ENVIRONMENTAL CONTAMINANTS