

## 35. Proton-pump inhibitor prescriptions in patients with cardiovascular disease: can the medication reconciliation process and the physician-hospital pharmacist teamwork improve adherence to international and national guidelines?

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### BACKGROUND:

International guidelines recommend prophylactic proton-pump inhibitors (PPIs) for patients receiving aspirin or nonsteroidal anti-inflammatory drugs. Moreover, PPIs are reimbursed at the point of dispensing by the Italian Healthcare System, if some criteria are satisfied and reported by the physician in the prescription. Gabriele Monasterio Foundation Heart Hospital created a pharmacist counseling service with the objective of improving prescribing at discharge. We aimed to evaluate the impact on PPI prescriptions of introducing the clinical pharmacist counseling, within a broader program for medication safety.

### MATERIALS AND METHODS:

All adult inpatients discharged at home from July 2015 to June 2017 were evaluated for PPI prescription. They were divided into two groups: before intervention (Group1) and after the intervention started (Group2), based on the pharmacist real-time monitoring of electronic prescription and structured verbal consultation with the doctor in charge to revise the medication scheme. Data on PPI prescriptions were collected and analyzed by comparison between the two time periods.

### RESULTS AND DISCUSSION:

A total of 1.471 patients were included in the study. All patients were discharged at home during the selected period and their prescriptions were analyzed. Clinical and demographic characteristics of the population included in the study are shown in table 1.

An overall number of 1.293 patients (87.9%) had a prescription of aspirin and PPI at discharge. Overall, pantoprazole was used by 54.1% of patients (n=700), lansoprazole in 40.5% of cases (n=524), omeprazole in 3.6% of cases (n=46) and esomeprazole was used in only 1.8% of patients (n=23).

Clinical and demographic characteristics	Group 1 Before intervention	Group 2 After intervention
Patients observed (n)	650	821
Age (years ± DS)	66.4 ± 2.4	68.6 ± 1.4
Sex, female (n, %)	170 (26.2%)	222 (27.0%)
Drugs prescribed at discharge (n ± DS)	7.4 ± 0.5	7.5 ± 0.5
Patients with PPIs at discharge (n, %)	582 (89.5%)	711 (86.6%)
Clinical characteristics (n, %):		
- Heart valve surgery	198 (34.0%)	249 (35.0%)
- Acute coronary syndromes	194 (33.5%)	195 (27.4%)
- Stable ischemic heart disease	118 (20.3%)	169 (23.8%)
- Atrial fibrillation	16 (2.7%)	28 (3.9%)
- Other cardiac diseases	55 (9.5%)	70 (9.8%)

PPI prescriptions	Group 1	Group 2	p value
with reimbursement criteria reported as written note (n, %)	282 <sup>s</sup> (48.5%)	288 (40.5%)	na
with a note for GPs on re-evaluation for continuation (n, %)	- (0%)	359 (50.5%)	na
out from national reimbursement criteria (n, %)	300 (51.5%)	64 (9.0%)	p<0.001
High-dose (n, %)	449 (77.1%)	365 (51.3%)	p<0.001

[<sup>s</sup>italic characters stand for values not reported by the physician in the discharge letter, but retrospectively estimated; na= not applicable]

In Group1 we observed that no prescription had the reimbursement note requested for PPIs, even if many patients (48.5%, n=282) presented the criteria for having free PPI. In Group2 we observed that 40.5% (n=288) of PPI prescriptions had an appropriate reimbursement note and 50.5% (n=359) had a note for the family doctor to re-evaluate the continuation of PPIs treatment, as shown in table 2.

The hospital pharmacist intervention produced a remarkable reduction in PPIs that not meet the reimbursement criteria (n=300 Group1 vs n=64 Group2, p<0.001) and a reduction in high-dose PPI prescriptions (n=449 Group1 vs n=365 Group2, p<0.001).

### CONCLUSIONS:

The collaboration between physicians and clinical pharmacists decreased the number of incomplete or inappropriate prescriptions with an expected positive impact on the quality of prescriptions. The next step will be to analyze data on the use of PPIs in the 6 months prior to hospital admission and in the 6 months following the discharge for the observed population, and to evaluate the clinical outcome of enrolled patients in terms of gastric bleeding.

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