



TO EVALUATE THE PREVALENCE OF ANTISECRETORY MEDICATION USE AMONG HOSPITALIZED PATIENTS IN SURGERY WARD

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ABSTRACT

Antisecretory medicines are often administered to patients in hospitals. However, there is currently limited knowledge on the comprehensive utilization of these treatments in the hospital environment.

Aim: *To assess the suitability of Antisecretory treatment in a major educational medical facility in western India, and the consequences of hospital prescriptions in primary care.*

Methods: *The administration of antisecretory drugs was observed for a duration of one month in adult patients who were sequentially admitted to K.J Somaiya Medical College and Hospital. This was done by examining their medical records.*

Results: *Out of the 800 patients that were admitted to the hospital, 46.8% of them were prescribed Antisecretory treatment. Ranitidine had the highest usage rate at 44.4%, followed by pantoprazole at 31.8% and omeprazole at 23.0%. Stress ulcer prophylaxis and prevention of non-steroidal anti-inflammatory drug-induced ulcer were the reasons for usage in 60.4% of cases. In all, 68% of prescriptions were deemed inappropriate based on consensus evaluation. Among patients who received unneeded preventive medication during their hospital stay, 56.4% were released while still on therapy, and 46% continued to receive the treatment three months later.*

Conclusions: *There is excessive utilization of Antisecretory medications in patients who are admitted to the hospital. The majority of incorrect hospital prescriptions are to the administration of ulcer prevention in patients who have a low risk of developing ulcers. This over utilization may also encourage improper medication usage in the field of general medicine.*

KEYWORDS: *Antisecretory medication, H2-receptor antagonists (H2RAs), proton pump inhibitors, Hospital*

INTRODUCTION

H2-receptor antagonists (H2RAs) and proton pump inhibitors are widely prescribed drugs used to reduce gastric acid secretion¹. They are commonly used in hospitals and general practice, accounting for approximately 10% of total pharmaceutical expenses in India in 2010. While the medical literature clearly outlines the appropriate use of H2RA or proton pump inhibitors for treating acid-related diseases and preventing damage to the stomach lining, there is a common tendency to assume that these drugs are beneficial for all patients². This misconception has resulted in the excessive use of these medications in general medical practice. Until now, there has been limited publication of the total utilization or improper utilization of these medications among patients in hospitals, as well as the consequences of hospital prescriptions in primary care³.

We conducted a 1-month survey to assess the utilization of Antisecretory drugs in the medical and surgical departments of a prominent teaching hospital in western India. Additionally, we evaluated the suitability of their prescription and its influence on prescribing practices in the community outpatient environment.



PATIENTS AND METHODS

K. J. Somaiya Medical College, Hospital and Research Centre, Mumbai consists of a General Hospital with 500 beds and a Super-Specialty Hospital with 56 beds. During the month of October 2010, all adult patients who were admitted to the medical and surgical departments of the hospital were evaluated for the utilization of Antisecretory drugs. On a biweekly basis, a gastroenterologist examined patients in all medical and surgical wards. Assisted by an internal staff member, they gathered information on all hospitalized patients, focusing on their initial diagnoses and the medications they were prescribed, including Antisecretory drugs. The data collected included dosage, timing of prescription, and reasons for use. The pharmacological name of the prescription antisecretory medication (either H2RA or proton pump inhibitor) was documented. The term 'use' was defined as the administration of a medication for at least one day, independent of the dosing regimen or indication. Detailed documentation was made about the patient's pre-existing use of antisecretory treatment before admission, as well as any initiation of these drugs throughout their hospital stay. The discharge documents of all patients receiving antisecretory medications were examined to ascertain if the prescription was maintained upon discharge. Patients who were readmitted throughout the study period were not included in the recount.

From the clinical charts, information was obtained on the results of gastroscopy, if performed, and the previous diagnoses of upper gastrointestinal diseases, especially for patients whose antisecretory medications were prescribed before admission.

Two consultant gastroenterologists collaborated to evaluate the indications for Antisecretory medication and the suitability of each prescription. The accepted indications for this treatment are strongly supported by medical literature. They include: treating active ulcer disease, maintaining therapy for ulcer patients who are resistant to treatment or do not have *Helicobacter pylori* infection, treating peptic esophagitis or erosive gastritis/duodenitis, maintaining treatment for documented gastroesophageal reflux disease, treating upper gastrointestinal bleeding, preventing stress ulcers in high-risk patients⁴, and preventing gastroduodenal damage caused by non-steroidal anti-inflammatory drugs (NSAIDs) or aminosalicic acid in high-risk patients (defined as patients over 60 years old, those with a history of previous bleeding episodes or peptic ulcers, those taking steroids or anticoagulants, those with severe chronic diseases, and those at high surgical risk in case of complications). Some more uses were deemed acceptable, but not conclusively proven: alleviation of dyspepsia resulting from NSAID usage; and brief therapy of severe non-ulcer dyspepsia.

Patients who were prescribed H2RA or proton pump inhibitor medications upon discharge were monitored at home to see whether general practitioners discontinued improper treatment or not. Specifically, those who began Antisecretory medication while in the hospital were questioned by telephone by a gastroenterologist on a monthly basis for a maximum of 3 months after being discharged. The purpose of these interviews was to confirm if they were still adhering to all the recommended therapies included in their discharge instructions.

Statistical Analysis

The chi-squared test was used to analyze the prevalence of improper usage of H2RA and proton pump inhibitors among different patient groups⁵

RESULTS

Out of the 800 patients that were admitted to the hospital one after another throughout the research period, 374 of them, which is equivalent to 46.8%, were given Antisecretory medicine. Ranitidine was the most often utilized medication, accounting for 44.4% of usage, followed by pantoprazole at 31.8% and omeprazole at 23.0%. Out of the patients who were prescribed H2RA or proton pump inhibitor, 126 (33.7%) were already taking the medication before being admitted to the hospital, while 248 (66.3%) began the treatment for reducing stomach acid secretion during their hospital stay.

In all, 68% of the prescriptions (254 out of 374) were deemed inappropriate based on consensus evaluation, whereas 120 (32%) were considered acceptable. The primary approved reasons for Antisecretory treatment included: healing of confirmed peptic disease in 27 patients; long-term treatment of peptic ulcer in 10 patients; relief of severe dyspepsia or symptoms of gastroesophageal reflux disease in 23 patients; management of upper gastrointestinal bleeding in 13 patients; and prevention of peptic damage or prophylaxis of stress ulcers in high-risk patients in 47 cases (39.1%).

The superfluous indications for Antisecretory medication are documented in Table 1. The concern about the development of stress ulcer syndrome or the simultaneous use of potentially harmful substances prompted treatment in the majority of these instances.



Reason for prescription	No. of patients
Ulcer prophylaxis in low-risk patients	177
Intake of chemotherapeutic agents	12
Heart disease	12
Acute renal failure	6
Chronic gastritis	4
Anaemia	4
Acute pancreatitis	3
Other	14
No clear reason found	22

Table 1. Prescription of Antisecretory medications without an appropriate indication

Out of the total number of patients, 74 individuals (58.7%) who were previously prescribed Antisecretory medicines before admission to the hospital shown a lack of willingness to use them, whereas 180 patients (72.6%) started therapy during their hospital stay.

The research also aimed to ascertain the percentage of patients who were incorrectly prescribed H2RAs and proton pump inhibitors during their hospital stay and subsequently continued to receive this treatment at home. Out of the 177 patients who were given unneeded ulcer prophylaxis during their hospital stay, 102 (56.4%) were prescribed the same treatment upon release. The patients were monitored for 3 months through monthly telephone interviews to track their consumption of Antisecretory drugs at home. Out of the total, 47 patients (46%) were still taking these drugs after 3 months of discharge, 25 patients (24.5%) were lost to follow-up due to reasons such as death, hospitalization, or relocation, and 30 patients (29.5%) had stopped the therapy based on advice from their general practitioner.

DISCUSSION

Currently, there is limited data about the utilization of acid suppressive drugs in patients who are admitted to the hospital. Research has been concentrated on community out-patient settings, where a significant prevalence of unwarranted utilization has been documented³.

Our findings indicate that the over prescribing of antisecretory drugs is equally prevalent among hospital patients as it is in general medical practice. This largely indicated the utilization of ranitidine and proton pump inhibitors to prevent damage to the stomach mucosa caused by the consumption of potentially harmful medicines or as a prophylactic measure against stress ulcers⁶. Regrettably, the most majority of these individuals (69.6%) did not exhibit an actual heightened susceptibility to pharmacological side-effects or upper gastrointestinal bleeding, as per the criteria outlined in the current recommendations. Three to five The results align with the findings of a survey conducted in Italy in 1997, which reported that 51% of prescriptions for Antisecretory medications in hospitalized populations were inappropriate. However, the prevalence of use in our study was higher than in that survey (27% vs. 46%).

Interestingly, H2RAs and proton pump inhibitors that were provided during hospitalization had a higher likelihood of being unneeded compared to those that were initiated at home. This can be partly due to the formulary limits and stringent regulations that have lately been implemented in India to manage costs, as well as the more liberal prescribing practices of hospital physicians. Ulcer prophylaxis is now commonly practiced in many units, even for patients who are at low risk. This is particularly done when certain clinical conditions (such as heart diseases or acute renal failure) or co-treatments (such as the use of corticosteroids) are present, even though there is no evidence to support these factors as actual risk factors⁷. This practice appears to be deeply rooted, since 56% of these needless preventive therapies were verified upon discharge. The majority of these unsuitable treatments were continued by general practitioners, as evidenced by the fact that 46% of assessable patients were still using the drugs three months after being released. The data indicate that there is a significant number of prescriptions for antisecretory medicines in general practice that lack motivation⁸. This is particularly true for patients who are using NSAIDs.

**Table 2. Rates of Antisecretory use in different departments of K.J.Somaiya Hospital and Research and the appropriateness of prescription**

Department (total patients)	Not treated n (%)	Treated		
		Total n	Appropriately treated n (%)	Inappropriately treated n (%)
Internal medicine (568)	320 (56%)	248	81 (33%)	167 (67%)
General, thoracic & specialist surgery (153)	78 (51%)	75	25 (33%)	50 (67%)
Cardiology & intensive care unit (78)	27 (35%)	51	14 (27%)	37 (73%)
Total (799)	425 (53%)	374	120 (32%)	254 (68%)

Since this study was carried out at a single hospital, it is possible to argue that the results may be influenced by the prescribing practices of a limited number of doctors. Which ensures a wide range of prescription attitudes influenced by diverse cultural backgrounds. Furthermore, the trial included a period of 1 month during which all home doctors rotated, thereby minimizing the likelihood of repeated practice approaches. In addition, the two additional prospective studies conducted on this subject, albeit having distinct designs and durations (a survey conducted in many centers over a single day and a survey conducted in a single center over a period of three months, both provide comparable findings about excessive prescription rates).

Our study concludes that Antisecretory medications are commonly overutilized in hospitalized patients. Most of the incorrect prescriptions are for ulcer prevention in low-risk patients, many of whom are often released with medicine, leading to excessive drug intake in the community outpatient environment. It is recommended to establish guidelines for the proper hospital prescription of H2RAs and proton pump inhibitors in medical and surgical departments⁹. This will help optimize their usage and have a positive impact on prescribing in general practice.

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DECLARATIONS

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Conflicts of Interest/Competing Interests: No competing interests for this work.

Ethics Approval: Ethical clearance was obtained from the Ethics Committee For Research On Human Subjects (Ethics Committee\IRB at K. J. Somaiya Medical College, Hospital and Research Centre, Mumbai on 03 September 2010.

Consent to Participate: Written informed consent was obtained from all participants.

Consent for Publication: Not applicable.

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