ORIGINAL RESEARCH PAPER

Volume-7 | Issue-6 | June-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PRESCRIBING PATTERN OF ACID SUPPRESSANT AGENTS IN A TERTIARY CARE TEACHING HOSPITAL AT DEHRADUN, UTTARAKHAND.

Pharmacology

Dr. Shalu Bawa Assistant Professor Pharmacology, SGRRIM&HS, Patel Nagar, Dehradun

Dr. Mirza A. Beg Professor Pharmacology, SGRRIM&HS, Patel Nagar, Dehradun

Dr. Mohammad Anjoom* Assistant Professor Pharmacology, GMC Super Speciality Hospital & Research Center, Mirzapurpole, Saharan pur, U.P. *Corresponding Author

Dr. Shakti B. Dutta Professor Pharmacology, Lane-1, Shashtri Nagar, Haridwar road, Dehradun.

ABSTRACT

Background: Acid suppressant agents are one of the most widely prescribed drugs worldwide. Their use has been extended beyond the prevention and treatment of peptic ulcers; to other diseases and also in the prevention of side effects caused by drugs like NSAIDs, antibiotics and steroids
Aim: The present study was conducted with the aim of evaluating the prescription pattern of acid suppressants in a tertiary care teaching hospital at Dehradun, Uttarakhand.
Materials & methods: This study was conducted for the duration of one year from January 2016 to December 2016 in SGRRIM & HS, Dehradun in the department of Pharmacology. 565 prescriptions containing acid suppressant agents were collected from the hospital wards and OPDs (outpatient departments). Prescriptions were analysed on WHO drug use indicators for rational prescribing, i.e. drug formulations, number of drugs per prescription, drugs prescribed by generic names, drugs prescribed from national list of essential medicines (NLEM).
Results: 565 prescriptions were analyzed, in which 388(68.67%) were males and 177(31.33%) were females. Most 263(46.54%) of the prescriptions were in 31-45 year age group. A total of 608 acid suppressant agents were prescribed which included 363(59.7%) pantoprazole, 101(16.61%) ranitidine, 46(7.57%) aluminium hydroxide+ magnesium hydroxide gel, 35(5.76%) omeprazole, 24(3.95%) rabeprazole, 22(3.62%) sucralfate, 14(2.3%) lansoprazole and 3(0.63%) famotidine respectively. 309(50.8%) acid suppressants were prescribed in infectious diseases followed by 154(25.33%) in acid peptic diseases, 112(18.43%) in musculoskeletal disorders and 33(5.44%) in surgical cases. All (100%) acid suppressants were prescribed by brand names. 1.07 acid suppressants were prescribed per prescription. 384(63.2%) acid suppressants were prescribed orally and 224(36.8%) were prescribed by parenteral route. 548(90.13%) acid suppressants were prescribed from NLEM 2015.
Conclusion: The study was aimed to detect the prescribing patterns of ASDs in current clinical practice. Most of the ASDs were prescribed for infectious diseases instead of acid peptic disorders. PPIs were the most commonly prescribed ASDs.

KEYWORDS

Acid Suppressant Agents, Prescribing Pattern, Peptic Ulcer.

Introduction:

Acid Suppressant drugs (ASDs) are those drugs which neutralize gastric acid and are used to treat peptic ulcer pain and heal the ulcer (1). Drugs used to inhibit gastric acidity include proton pump inhibitors (PPIs), histamine H2 receptor antagonists (H2 blockers), and other antacid medications including bicarbonate containing preparations and preparations containing aluminum and magnesium along with agents with specific effects on prostaglandin synthesis(2). Gastric acid suppressants have transformed the management of dyspepsia, peptic ulceration and gastro-esophageal reflux disease. PPIs are now among the most commonly prescribed medications worldwide (3). A large number of patients are taking these drugs with no appropriate guideline-based indications from studies have indicated that 1.26% of the UK general practice patients are on long term acid suppression therapy and 0.45% are on long term PPI's(4). The use of acid suppressant agents has been extended beyond prevention and treatment of peptic ulcers; to other disease and symptoms such as non-ulcer dyspepsia, heartburn, prevention of side effects caused by drugs. The overuse of acid suppressants is common and this is evident across all specialties, particularly in those that commonly prescribe antiplatelet agents, nonsteroidal anti-inflammatory drugs (NSAIDs), steroids and anticoagulation medications (5).

Keeping this in mind, the present study was conducted to study the prescribing pattern of acid suppressant agents in a tertiary care teaching hospital at Dehradun, Uttarakhand.

Material and Methods:

This study was conducted by the Department of Pharmacology at SGRRIM&HS for the duration of one year from 1st January 2016 to 31st December 2016, after the approval of Institutional Ethics Committee. A total of 565 prescriptions were collected from the hospital wards and OPDs (outpatient departments).Prescriptions were analysed on various WHO drug use indicators for rational prescribing such as drug formulations, number of drugs per prescription, number of drugs prescribed by generic names and number of drugs prescribed from NLEM 2015.

Results:

Out of a total of 565 prescriptions, there were 388(68.67%) male and 177(31.33%) female patients (Figure 1). Majority of prescriptions 263(46.5%) were in 31-45 year age group followed by 105(18.7%) in 45-60 year age group, 95(16.8%) in 16-30 years, 87(15.4%) in >60 years and 15(2.6%) in 0-15 years (Figure 2). A total of 608 ASDs were prescribed which included 363(59.7%) pantoprazole, 101(16.6%) ranitidine, 46(7.6%) aluminium hydroxide+ magnesium hydroxide (AlOH3 + Mg(OH)2 gel, 35(5.8%) omeprazole, 24(3.9%) rabeprazole, 22(3.6%) sucralfate, 14(2.3%) lansoprazole and 3(0.5%) famotidine respectively (Figure 3). 309(50.8%) acid suppressants were prescribed in infectious diseases followed by 154(25.33%) in acid peptic diseases, 112(18.43%) in musculoskeletal disorders and 33(5.44%) in surgical cases (Table 1).

All (100%) ASDs were prescribed by their respective brand names. 1.07 acid suppressants were prescribed per prescription. 384(63.2%) ASDs were prescribed orally and 224(36.8%) were prescribed by parenteral route. 548(90.13%) acid suppressants were prescribed from NLEM 2015 (Table 2).

Discussion:

A total of 565 prescriptions containing ASDs were analyzed for a period of 1 year. More male patients received ASDs as compared to females. This was comparable with other studies which shows that commonly male population are more prone to conditions, for which acid suppressant drugs are prescribed(6, 7). Most of the ASDs were prescribed in 31-45 year age group. This was similar to previous studies (6, 8). Majority of the ASDs were prescribed for infectious diseases in our study instead of acid peptic diseases. Previous studies have also shown that acid suppressant drugs are excessively used to counteract the side effects produced by medicines like NSAIDs and Antibiotics (5, 6).

The most commonly prescribed acid suppressant class in our study was proton pump inhibitors. This has been seen in previous studies (5, 9). Proton pump inhibitors (PPIs) are one of the most commonly prescribed classes of medications in the primary care setting as they are

very efficacious and have minimal side effects but they are associated with increasing the cost of prescriptions as they are often prescribed for minor symptoms and without clear indications(9). Previous studies have demonstrated overuse of PPIs in hospitalized patients and in primary care (10-12). Pantoprazole was the most commonly prescribed drug in our study which was similar to previous study (5). Ranitidine was the second most commonly prescribed drug in our study. All the acid suppressant drugs were prescribed by their respective brand names. This was consistent with previous study which shows that brand names are more commonly prescribed as compared to generic drugs(5). Most of the drugs in our study were prescribed by oral route. This was in accordance with previous studies (5, 6). This may be because more prescriptions were collected from OPDs instead of wards. Majority of the acid suppressant drugs were prescribed from NLEM. The rationale for selecting a limited number of essential medicines is that it leads to better supply, more rational use, and lower costs (13). Drawing an essential medicines list (EML) is expected to result in better quality of medical care, better management of medicines and cost-effective use of health care resources (14). This is especially important for a resource limited country like India. The list of essential medicines is intended to have a positive impact on the availability and rational use of medicines.

Gastric acid suppressants are important drugs with a crucial role in the management of a number of GI diseases, and care is needed to ensure that patients taking these agents for good indications do not have their prescriptions stopped. However, they are frequently being prescribed for non-specific and inappropriate reasons, and that a large number of patients are taking these agents for much longer than necessary (12).

Study limitations: The costs and adverse drug reactions of various acid suppressant drugs were not noted in the present study. The results of our study cannot be generalized as it was carried out in a single hospital setting. Hence, a multi-centric study should be carried out with large numbers of patients in general populations.

Conclusion:

The study was aimed to detect the prescribing pattern of ASDs in current clinical practice. Most of the ASDs were prescribed for infectious diseases instead of acid peptic disorders. PPIs were the most commonly prescribed ASDs. Increased clinician awareness on appropriate prescription of acid suppressant drugs can lead to better patient outcome.

Figure 1: Male: Female ratio

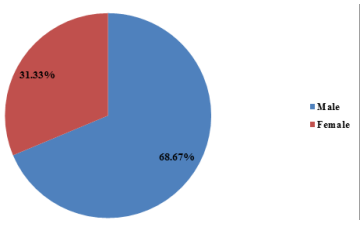

Figure 2: Age wise distribution

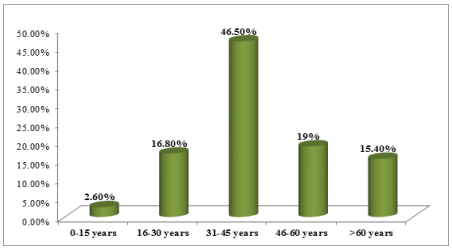

Figure 3: Acid suppressants drugs (ASDs) prescribed

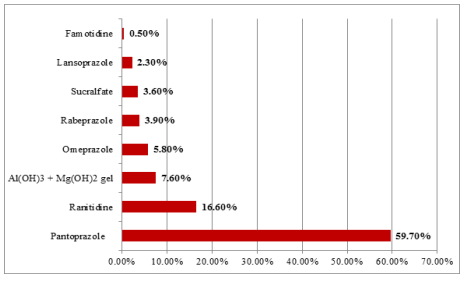

Table 1: Diseases for which ASDs prescribed

Disease	Number (%)
Infectious diseases	309 (50.8 %)
Acid peptic disease	154 (25.33%)
Musculoskeletal	112 (18.43%)
Surgical	33 (5.44%)

Table 2: WHO drug use indicators

ASDs prescribed	Number (%)
Brand names	100%
Drug / prescription	1.07
Oral : parenteral	384(63.2%) : 224(36.8%)
Drugs prescribed from NLEM 2015	548(90.13%)

References:

1. Hoogerwerf WA, Pasricha PJ. Pharmacotherapy of gastric acidity, peptic ulcers, and gastro-esophageal reflux disease. In: Brunton LL, Lazo JS, Parker KL, editors. Goodman and Gilman's The Pharmacological basis of Therapeutics. 11th ed., New York, McGraw-Hill; chapter 36;2006:p.967-81.
2. Vestergaard P, Rejunmark L, Mosekilde L. Proton pump inhibitors, histamine H2 receptor antagonists, and other antacid medications and the risk of fracture. Calcif Tissue Int 2006;79:76-83.
3. Logan IC, Sumukadas D, Witham MD. Gastric acid suppressants—too much of a good thing? Age and Ageing, 2010;39(4):410-11.
4. Ahn JS, Park SM, Eom CS, Kim S, Myung SK. Use of proton pump inhibitor and risk of colorectal cancer: a meta-analysis of observational studies. Korean J Fam Med 2012;33:272-79.
5. Dhande PP, Patel HR. Utilization of Anti-peptic ulcer drugs in outpatient clinics of a tertiary hospital Indian Journal of Basic and Applied Medical Research; March 2016: Vol.-5, Issue- 2, P. 175-186.
6. Jha KK, Divya P, Swetha V, Reddy V, Binu KM, Doddayya H. Prescribing pattern of acid suppressant drugs in current clinical practice. Journal of Scientific and Innovative Research 2016;5(2):32-5.
7. Hurenkamp GJB, Grundmeyer HGLM, Bindels PJE, Tytgat GNJ, Van der hulst RWM. How do primary care physicians use long-term acid suppressant drugs? The Journal of Family Practice 2002;51(3):241-45.
8. Alejandra A, Daniel CA, Felipe CC, Felipe EL, Andres G et al. Prescribing patterns and economic costs of proton pump inhibitors in Colombia. Colombia Medica 2013;44(1):8-13.
9. Singh VK, Kathiresan P, Singh PK. Prescribing pattern of acid suppressants in modern clinical practice - An analysis. Der Pharmacia Sinica 2011;2(3):67-73.
10. Naunton M, Peterson GM, Blease MD. Overuse of proton pump inhibitors. J Clin Pharm Ther 2000; 25:333-40.
11. Bashford JN, Norwood J, Chapman SR. Why are patients prescribed proton pump inhibitors? Retrospective analysis of link between morbidity and prescribing in the General Practice Research Database. BMJ 1998;317:452-6.
12. Forgacs I, Loganayagam A. Overprescribing proton pump inhibitors. BMJ 2008;336(7634):2-3.
13. Management Sciences for Health. International Drug Price Indicator Guide. Cambridge: Management Sciences for Health; 2014.
14. Report of the Core-Committee for Revision of National List of Essential Medicines November 2015. cdsco.nic.in.
15. Erdeljic V et al. Use of gastro-protective agents in recommended doses in hospitalized patients receiving NSAIDs: a drug utilization study. Pharm World Sci. 2006;28(5):318-25.