INVESTIGATION ON DRUG UTILIZATION PATTERN AND COMPARATIVE ANALYSIS OF GASTROINTESTINAL DRUGS

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ABSTRACT

The aim of present study was to investigate the drug utilization pattern and the comparative analysis of gastrointestinal drugs in the Gastroenterology department of various hospitals in Thrissur district. The study was a prospective, cross sectional observation study, carried out in Gastroenterology department of various hospitals in Thrissur district for a period of three months from march-2023 to may-2023. The main objective of this study was to determine the drug utilization pattern using WHO core prescribing indicator.75 prescriptions were included in our study. The data like demographic details of patients, indications, disease prevalence, comorbidities, and prescribing pattern were collected and the collected data was assessed to determine the prescribing trends. The study included 75 patients suffering from various gastrointestinal diseases from which 54.6% were males and 45.4% were females. The gastrointestinal disease was highest in patients of age group 31-50 years. The most common gastrointestinal disease treated was GERD (21.3%) and most common associated comorbidity was Depression .The use of Proton pump inhibitors, Anti-inflammatory, Immunosuppresents, Somatostatin analogue was very common. Omeprazole(86.6%), Pantoprazole (81.3%) , Rabeprazole(74%) are the top three prescribed gastrointestinal drugs. Drugs from the NLEM were 41.1%. The price distribution for most commonly used gastrointestinal drug along with their brand was also documented .The present study help the health practitioners to optimize the appropriate use of gastrointestinal drugs.

KEYWORDS: Gastrointestinal disease, Drug Utilization, Rationality, GERD, Ulcerative Colitis

INTRODUCTION

Drug utilization research (DUR) is defined as an authorized, structured, ongoing review of prescribing, dispensing and use of medication. DUR encompasses a drug review against predetermined criteria that results in changes to drug therapy when these criteria are not met. It involves a comprehensive review of patients prescription and medication data before, during and after dispensing to ensure appropriate medication decision-making and positive patient outcomes. As a quality assurance measure, DUR programs provide corrective action, prescriber feedback and further evaluations. Drug utilization research holds a crucial place in clinical practice as it forms the basis for making amendments in the drug dispensing policies at local and

national levels. The ultimate goal of such research is to facilitate rational drug use. Also, since it helps in developing strategies to utilize health resources in the most efficient manner, it is particularly needed in a developing economy like India where 72% of all health care burdens is borne by the patients. DUR is classified in three categories: Prospective- evaluation of a patient's drug therapy before medication is dispensed. Concurrent -ongoing monitoring of drug therapy during the course of treatment. Retrospective - review of drug therapy after the patient has received the medication. The drug utilization research program play a key role in helping manage health care systems , understand, interpret and improve the prescribing, administration and use of medications

METHODOLOGY

STUDY PROTOCOL

INCLUSION CRITERIA

- All patients of either sex with gastrointestinal diseases with or without comorbidity.
- Patients willing to participate and give voluntary informed consent.

EXCLUSION CRITERIA

- Age <10 year and >85 years.
- Patients not willing to participate and give informed consent.
- Patients with non-gastrointestinal diseases.

CONCLUSION

The study provides valuable insights into the gender distribution, age distribution, prevalence of gastrointestinal diseases, associated comorbidities, prescription patterns, drug utilization, price distribution, dosage forms, and prescription of non-gastrointestinal drugs among patients with gastrointestinal diseases. These findings contribute to our understanding of the characteristics and treatment patterns in this patient population. The overall prescription patterns encountered in our study is optimal.Among the gastrointestinal patients, the highest percentage belonged to the age group of 31-50 years, while the lowest percentage belonged to the age group of 80-85 years. This suggests that the study had a diverse age range, with a higher representation of middle-aged patients. The present study reveals that the most common gastrointestinal disease observed was GERD, followed by ulcerative colitis. Depression and anxiety were the most commonly associated comorbidities. One of the major short coming we found in our study is that the generic prescription was found to be less compared with the brand or trade names of drugs. Similarly, the majority of drugs prescribed for gastrointestinal diseases were not listed in the National List of Essential Medicines (NLEM), indicating a lower preference for NLEM drugs. Proton pump inhibitors were the most commonly prescribed class of gastrointestinal drugs, followed by antacids. Omeprazole, pantoprazole and rabeprazole were the top three frequently prescribed gastrointestinal drugs. Tablets were the most commonly prescribed dosage form

for gastrointestinal drugs, followed by capsules. Apart from gastrointestinal drugs, the study also indicated the frequent prescription of non-gastrointestinal drugs in patients with gastrointestinal diseases. The study emphasizes the importance of practitioners and pharmacists staying updated on banned drugs, deleted drugs, irrational Fixed-Dose Combinations (FDCs), and recent changes in the National List of Essential Medicines (NLEM). This updated knowledge plays a crucial role in shaping prescribing patterns and optimizing drug utilization. The study findings indicate that the prescribing pattern and trends among gastroenterologists were focused on specific diseases within the gastrointestinal field. However, it is crucial to raise awareness among gastroenterologists regarding the importance of adopting generic drugs, as this would ensure cost-effectiveness and rational utilization of medications. Implementing effective procedures and regular examinations would further enhance compliance with prescribing patterns, leading to improved health outcomes.

REFERENCES

1. Anne F Peery, Evan S Dellon, Burden of gastrointestinal disease in the United States: 2012 update. Gastroenterology. 2012 Nov;143(5):1179-1187.e3.

2. Jones R, Lydeard S. Irritable bowel syndrome in the general population. BMJ. 1992 Jan 11;304(6819):87-90. PMID: 1737146; PMCID: PMC1880997.

3. Linda G Tolstoy. Drug-induced Gastrointestinal Disorders. Pharmacy Times. June 26, 2002.

4. Jonnathan P Segal, Jean Frederic Le Blanc, Ailsa L Hart. Ulcerative colitis: an update. Clin Med (London). 2021 Mar;21(2):135-139. doi: 10.7861/clinmed.2021-0080.

5. Weledji, Elroy P. Acute upper gastrointestinal bleeding: A review. Department of Surgery, Faculty of Health Sciences, University of Buea, S.W. Region, Cameroon.[Internet]. 2020 [cited 2020 May 1].

6. Danisa M. Clarrette, Christine Hachem, Gastroesophageal Reflux Disease (GERD). Saint Louis University School of Medicine, St. Louis, MO. PMCID: PMC6140167PMID: 30228725.

7. Neil Parry, Harry van Goor, Andrew, Ernest Moore et al. 2019 WSES guidelines for the management of severe acute pancreatitis. World J Emerg Surg. 2019;14(1):27.

8. Lisa Lungaro, Anna Costazini. Denis Gentili, Impact of Female Gender in Inflammatory Bowel Diseases: A Narrative Review. J Pers Med. 2023;13(2):165.

9. Young Sun Kim, Nayoung Kim, Guang Ha Kim. Sex and gender differences in gastroesophageal reflux disease. Neuro gastroenterology. 2016 Oct;22(4):575-588. PMID: 27703114; PMCID: PMC5056567.

10. Arjun B, Annamalai A, Rangaswamy B, Sunil S. A clinico-endoscopic study of upper GI disorders in rural population of Pondicherry.Indian J Gastroenterol. 2015 Nov;34

11. Neil Shah, William Gossman. Omeprazole. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-Accessed February 7, 2023.

12. John Hamlin, Alexander C Ford. Long-term efficacy and safety of azathioprine in ulcerative colitis.J Crohn's Colitis. 2015 Feb;9(2):191-7.

13. Niti Mittal, NusartShafiq, S. Malhotra drug utilization study in a tertiary care center: Recommendations for improving hospital drug dispensing policies. Indian J Pharm Sci.2014 July-Aug; 76(4):308-314

14. Guyton AC, Hall JE. Textbook of Medical Physiology. 13th ed. Elsevier; 2016

15. Charlotte F Carroll, Jeffery K Allen, Suzanne F Cook, Robert S Sandler, Michael D Kappelman, Nicholas J Shaheen: Burden of gastrointestinal disease in the United States Gastroenterology 143 (5), 1179-1187. e3, 2012

16. Verma A, Kumar S, Kumar M, Pandey S. Drug utilization study of gastro-intestinal agents in a tertiary care teaching hospital in India. J ClinDiagn Res. 2013;7(11): 2491-2495.doi: 10.7860/JCDR/2013/5988.3628.

17. Gupta R, Garg R, Kumawat BL, et al. Prescription pattern of gastrointestinal drugs in the outpatient department of a tertiary care hospital in India. Int J Basic Clin Pharmacology. 2016;5(4): 1385-1390.doi: 10.18203/2319-2003.ijbcp20162801.