Original Article

Drug utilization study for GIT disorders as a teaching methodology for rational prescribing for second professional MBBS students in tertiary care teaching hospital

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Abstract

Background: Drug utilization study is a teaching tool for teaching clinical pharmacology for MBBS students has been practised by various pharmacologist. (1)
Our objective was to introduce teaching pharmacology at bed side, which will impart changes in knowledge, attitude and practices among 2nd Prof MBBS students of a tertiary care teaching hospital.
Method: Total number of 205 patients suffering from GIT disorders were followed and their prescriptions were entered into a pre-structured proforma. This was done at SGRRIM&HS Medical College, Dehradun by IInd Prof MBBS students in the department of Pharmacology.
Prescriptions were analysed on various WHO drug use indicators like drug formulations, drugs per prescription, fixed drug combinations (FDC) Drugs prescribed from NLEM and prescribed by Generic names.
Results: Total number of 205 prescriptions were collected from IPD of Hospital by IInd Prof MBBS students. These prescription details were collected only those who were suffering from various GIT ailments. 38% were male, 62% were females. Maximum number of patients were suffering from viral hepatitis, 62 followed by Diarrhoea and cholecystitis and related disorders 21 each. Total 1105 number of drugs were utilised among 205 patients. Out of which Antibiotics were 343 followed by Antacids, Hepato-protective agents etc. Out of these medications oral route was the most commonly used for medication 54% followed by injectable 492 etc. Various antibiotics like piperacillin + Tazobactum, Metronidazole, Cefuroxime, Ofloxacin, Amikacin were commonly prescribed drug. It has been observed that 679 drugs were from NEML.
Conclusion: Majority of the drugs were prescribed from NEML. Majority were prescribed by their brand names. Polypharmacy was observed in this study.

Keywords: WHO drug use indicators, GIT drug use, Rational Prescribing, National essential Medicine list, Polypharmacy, brand names.

Introduction:

Medical Education needs continuous improvements so as to improve medical practice among the clinicians (1). Various pharmacologists from all parts of India have always tried to impart clinical pharmacology knowledge among the undergraduate MBBS/PG MD/MS students from time to time in this regard (2) (3).

Gastrointestinal System Disorder varies on a wide spectrum and most common symptoms presented as nausea, vomiting and gastritis. Most of the time, people ignore any signs and symptoms related to GIT. Our objective was to introspect the various GIT pathology as well as the medication used in relation to various WHO Drug use indicators using NLEM (ref).

This is an attempt to analyse the prescriptions having GIT ailment and medication used. For any complaint it is a common phenomenon of consuming anti-peptic ulcer medicines. This has to be corrected. In this study our attempt to find out the rationality of Drug use indicators as per WHO NLEM. Irrational medication prescribing imparts a great load on individuals as well as on society in terms of morbidity, mortality, ADRs and drug resistance.

Clinical Pharmacology understanding by teaching and training to 2nd year MBBS student is the need of the hour. This subject makes the bridge between non-clinical subjects to entrance into the clinic. So, clinical pharmacology is the need of the hour.

Methods:

This is an observational cross-sectional study conducted in a tertiary care teaching hospital at SGRRIM&HS Dehradun. A total of 205 prescriptions were collected from medicine IPD of the patients having GIT symptoms by the undergraduate students as a routine method for teaching clinical pharmacology. Then they were analysed for drug usage pattern using WHO drug use indicators like:

1. Average number of drugs per prescription
2. Average number of antacid/antipeptic drugs
3. Percentage of injectable on oral preparation
4. Percentage of antibiotics
5. Number of FDCs
6. Drugs prescribed from NLEM

Inclusion criteria: Prescriptions included:

1. Prescribed for patients suffering from any GIT symptoms
2. From Medicine IPD
3. Prescribed for all ages,
4. Prescribed for both genders

Exclusion: None

Results:

A total of 205 prescriptions were analysed for drug usage pattern from Med IPD in this observational study. The number of male and female patients were 128 (62%) and 77 (38%) respectively.

Disease	Male	Female
Ac./Gall Stone - Pancreatitis	0	4
Cholecystitis/Cholelitithiasis/Mass Lesion GB	2	19
Cirrhosis / ALD / Jaundice	17	1
Liver Abscess	4	1
Viral Hepatitis	40	22
Gastritis	7	2
GERD	6	0
Acid Peptic Ds	13	2
Amoebiasis	15	1
Diarrhoea	13	8
Ac. Gastroenteritis	0	13
Ac. Appendicitis	8	0
Misc.	3	4
Total	128	77

The mean age of patients being treated for GI disorders was found to be 35.96 years.

Age-wise distribution: Age-wise distribution of patients of both genders is shown in Table-1.

Table 1: Age-wise distribution of patients

Age Group	Male	Female	Total
0-15	20	4	24
16-30	39	12	51
31-45	55	17	72
46-60	7	31	38
>60	7	13	20
Total	**128**	**77**	**205**

Out of a total 205 patients - 85% patients were suffering from hepatic ailments like cirrhosis, viral hepatitis, liver abscess; 58 were suffering from infective conditions; 30 were suffering from psychosomatic complaints, like GERD, Gastritis, APD; 25 were suffering from biliary ailments; and 07 patients suffering from other miscellaneous conditions, like non-specific nausea & vomiting.

Disease	Total
Ac./Gall Stone - Pancreatitis	**4**
Cholecystitis/Cholelitithiasis/Mass Lesion GB	**21**
Cirrhosis / ALD / Jaundice	**18**
Liver Abscess	**5**
Viral Hepatitis	**62**
Gastritis	**9**
GERD	**6**
Acid Peptic Ds	**15**
Amoebiasis	**16**
Diarrhoea	**21**
Ac. Gastroenteritis	**13**
Ac. Appendicitis	**8**
Misc.	**7**
Total	**205**

A total number of 1105 drugs were prescribed which included various antimicrobial drugs 343 (30%), followed by antacids on acid lower agents 199 (17%), hepatoprotective agents 116 (10%), Antiemetics 105 (9%), Analgesics 90 (8%), Multivitamins 90 (8%), Laxatives 36 (3%), Antispasmodics 14 (1%). But 168 (14%) of drugs belong to miscellaneous group.

Out of total 1105 drugs, Orally 606 (54.84%) were administered which is the major route, followed by Injectable 492 (44.52%), Topical 04 (0.36%) and Inhalational 03 (0.27%).

Total no. of 343 antibiotics were used in 205 no. of patients which indicates 1.6/prescription.

Disease	Antibiotics
Ac./Gall Stone - Pancreatitis	5
Cholecystitis/Cholelitithiasis/Mass Lesion GB	44
Cirrhosis / ALD / Jaundice	22
Liver Abscess	12
Viral Hepatitis	92
Gastritis	22

GERD	18
Acid Peptic Ds	28
Amoebiasis	21
Diarrhoea	37
Ac. Gastroenteritis	10
Ac. Appendicitis	19
Misc.	13
Total	**343**

Total no. of 1105 drugs used which indicates 5.39 or 5.4 drugs / prescription.

Out of 1106 drugs, 679 (61.39%) are prescribed from NLEM, 1097 (99.27%) drugs are prescribed by their brand names, and 5.39 drugs / prescription were prescribed.

Discussion:

In the present study, an attempt has been made to analyse the GIT disorder symptoms and drug usage pattern of patients admitted to the M/IPD by the 5th semester students guided by postgraduate students and supervised by the faculties of Pharmacology department.

In this study, majority of patients belong to 31-45 years age group with mean age of 35.96 years. A similar pattern was found in previous studies.

Males are predominantly affected here with a no. of 128 (62%) than that of female counterpart 77 (38%) which shows males are more prone.

Out of 205 patients, viral hepatitis is the most common presentation, 62 in no. but when we counted Liver ailments, it was 85 (7.69%), followed by infective bacterial/protozoal condition of GIT i.e. no. 58 (5.24%), followed by psychosomatic ailments like GERD, APD, Gastritis i.e. 30 (2.71%), biliary system affected cases were 25 (2.26%), like colicky miscellaneous 07 (0.63%).

Antibiotics and antiprotozoal drugs were commonly prescribed drug; which include various FDCs like Amoxicillin + Clavulanate, Piperacillin + Tazobactam, metronidazole, and ofloxacin & ornidazole. Prescribing piperacillin + tazobactam combinations were preferred in acute appendicitis, Acute pancreatitis, Liver abscess, Cirrhosis, Viral hepatitis though it is contraindicated in hepatitis in case of compromised condition of hepatic system. (Ref.)

Ornidazole, metronidazole were the most commonly used drug in various GI conditions like acute gastroenteritis, Diarrhoea, Amoebiasis, Acid peptic disease (H. pylori infection), Liver abscess (Hepatic amoebiasis), Acute Pancreatitis. Use of antiprotozoal drugs are the mainstay of treatment in case of abdominal/Peritoneal infections (Ref.). Also, anaerobic infections are mostly associated with intraabdominal infections (Ref.). So, combination of anti-anearobics used to cover broad spectrum coverage.

Although various adverse effects are also associated with these medications which in turn presents as GI symptoms like nausea, vomiting (Ref.) as well, other antibiotics used may be associated with superinfection again another form of GI symptoms loose motion or diarrhoea which requires Prebiotics (Ref.).

Another most preferred drug used in GIT disorders are antacids which is responsible for limiting the secretion of acid from the stomach on GIT (Ref.). The use of acid lowering agents may be associated with achlorhydria in long term may be associated with Cancer stomach (Ref.). So this is a real point of discussion as well as concern which has to be used cautiously.

i) Here we require the steps for dose, duration, dosage form and rationality of a drug use

ii) More no. of drugs used per prescription raises alarm for dru drug / drug food interaction as well as adverse drug reactions (Ref.)

In this study 5.39 drugs were prescribed per prescription, which shows a quite high result as per the other studies (Ref.).

- There is a shift of prescribing drugs from NLEM that is 679 (61.45%) out of 1105 no. of drugs; also, there is tendency of prescribing drugs in Brand name (99.27%)
- Multivitamins and Pre-probiotics used 90 (8%) has the rationality in using in patients with hepatic ailments and antibiotics used causing superinfection. It can be comparable with previous studies (Ref.)

- Also, when it is compared the dosage form oral 54.84% as that of injectable that is 492 (44.52%) and no. of oral/prescription (2.95) to no. of injectables per prescriptions comes to be 2.4.

These two groups of dosage forms are compared in other previous studies also. Another point has to be considered that is safety and efficacy of drugs.

When drug utilization studies are carried out most important is direct cost of the drug which imposes a great role on patient on its attendant that is not analysed here.

Male patients are more in number as compared to female patients, more patients are from age group of 31-45 years.

Most commonly antimicrobials were prescribed followed by anti-peptic acid agents. Number of drugs per patient per prescription was high and less number of prescribed from WHO NEML.

Conclusion:

Hepatic ailments were most common and antimicrobials are commonly used medications in our study. This study has opened our eye in relation to trends in prescribing, most commonly prescribe group role of Polypharmacy in Dehradun in a Tertiary care teaching hospital.

There was an attempt to study the relative burden of disease, gender distribution, prescribing pattern in patients with gastrointestinal disorder.

MBBS students were involved and learnt what is prescription, how to write rationally, regarding Polypharmacy & what are common errors while prescribing.

Postgraduate learnt how to guide MBBS students to learn clinical Pharmacology, this was an approach to train our Postgraduates to teach MBBS Students in the clinic.

As a Responsible Pharmacology teacher, our role is not only as a basic medical teacher, but to be well convensed with other clinical knowledge & train MBBS & MD students regarding the role of the department with clinical departments & "This is the need of the hour."

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