

“PRESCRIPTION TRENDS OF GASTRO-PROTECTIVE AGENTS IN TEACHING HOSPITAL”

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ABSTRACT

In most of the countries the prevailing disease is gastric related problems for which majority of the population prefer acid suppressant agents. The common indication for which physicians prescribed acid suppressant drugs are GERD followed by peptic ulcer disease followed by with NSAIDs, antibiotics and other drugs to relieve the side effects of drugs. **Objectives:** To access the pattern to co-prescription of gastro protective agents. **Methodology:** A Prospective-observational study was carried out for a periods of six months at BMCH& RC Chitradurga, Karnataka. Categorical data were analysed by frequency and percentage calculation method and quantitative data were analysed by means of descriptive statistic measures. **Results:** Total of 213 subjects proton pump inhibitors are highly prescribed in that pantoprazole 51.7%, drugs which are taken the majority of the prescription were PPI's 40.37 % and H2 receptor antagonist was

17.37%, Coming to co-prescription of gastro-protective a total of 167 NSAIDs, and 140 antimicrobials in our study. Paracetamol were 50.2%, cephalosporin's were 45.70%, Dexamethasone, vitamins B complex are highly prescribed. **Conclusion:** PPIs were mainly prescribed in our study compare to H2 receptor antagonists and other GPS agents. Co-prescription with NSAIDs especially paracetamol, antimicrobials especially cephalosporin followed by corticosteroids and some vitamins. Another finding in PPI's were pantoprazole is highly prescribed. When coming to the prescription of PPI's the rationality was lacking in the form of un-indicated, incomplete information, frequency etc.

KEYWORDS: PPIs, H2 receptor antagonist, NSAIDs, SPSS, GPS.

INTRODUCTION

The development and use of H2RA's, significantly enhanced the management of peptic ulcer disease when cimetidine was introduced in 1977. These agents cimetidine famotidine ranitidine competitively and reversibly binds the H2R on the parietal cell decreasing histamine stimulated basal and post prandial gastric acid secretion. PPIs were identified in 1979 and approved for the management of acid-peptic disease; they were subsequently introduced to the market in 1989. The gastro protective agents (GPA) such as proton pump inhibitors (PPI's) or high dose H2RA as well as misoprostol are used as co- prescription with NSAIDs, corticosteroids and few antibiotics. The use of non-steroidal anti-inflammatory drugs (NSAIDs) as a first-line therapy for pain and inflammation is well accepted and recommended by World Health Organization (WHO). Patients on NSAIDs are at increased risk of upper GI complications that range from dyspepsia to peptic ulcers and GI bleeding. Approximately 60% of NSAIDs users at high-risk of NSAIDs complications, fail to receive adequate gastro protection. Gastro protective strategies are effective in reducing the risk of GI complications. Last but not least overuse of PPI unnecessarily burdens national health care budgets. So care should be taken while prescribing gastroprotectives as co-prescriptions and any other drug therapy.

MATERIALS AND METHODS

A prospective observational study was study was approved by the Institutional Ethics Committee, of SJM College of pharmacy, Chitradurga, kanataka. The study was carried out Patients admitted in General Medicine, obstetrics and gynaecology and Paediatric in Basaveshwara Medical College & hospital.

- Subjects of all age groups.
- Patients of both genders.
- Both inpatients and outpatients
- Willing to sign informed consent form

Patients who are prescribed with gastro-protective agents presented inpatient department (IPD) of general medicine, obstetrics and gynaecology and paediatric departments of both genders are selected for the study. Informed consent form (Annexure-II) is issued and explained to the patient or patient representatives in the local language (kannada).

Demographic details of the enrolled patients are collected which are necessary for the study. Assess the prescription pattern of the patient medication chart.

Study Procedure

- The study was started after obtaining the institutional ethical committee (IEC).
- Patients who satisfy above study criteria was included into the study after taking the consent.
- Patient's demographic details, complaints, history, diagnosis and prescribed drugs will be collected from the medical records of the patient and will be documented in a suitably designed data collection form. The obtained data will be analyzed by using statistical method.

Statistical Analysis

The data was entered in Microsoft Excel-2010 version and the results are analysed using Statistical Package for Social Services (SPSS 19.0). Descriptive method was used for the analysis.

RESULTS

A total of 163 patients data were collected in teaching hospital. All patients were prescribed with gastro protective agents.

Details of prescription	Frequency
Total No of analysed prescription	163
Total No of drugs prescribed	547
Average No of drugs per prescription	3.35
Mean age of the study subject	46.06 yrs (SD=1.65)

Distribution of subjects according to gender

Out of 163 subjects 42.3% are females and 57.7% are males that is shown in table no:1& graphically represent in fig. no. 1.

Gender Wise Distribution Of Patients(N=163)				
Genders	Frequency	Percent	Valid Percent	Cumulative Percent
Female	69	42.3	42.3	42.3
Male	94	57.7	57.7	100.0
Total	163	100.0	100.0	

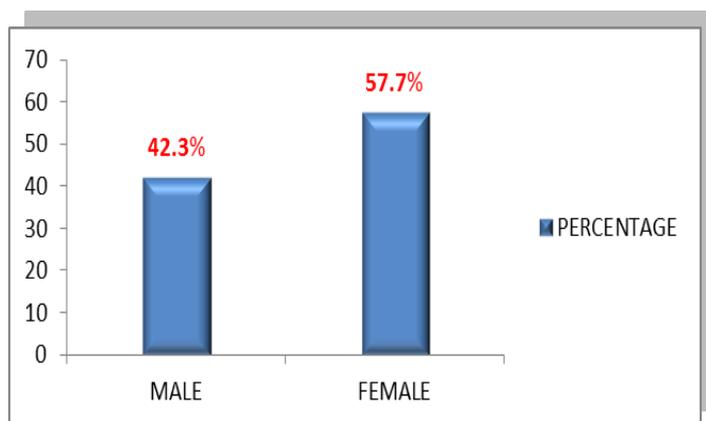


Fig. 1: Distribution according to gender.

Distribution of patients according to age groups

Out of 163 subjects below 30 years are 23.9%, between 31 to 40 are 16.6%, between 41 to 50 are 20.9%, between 51 to 60 are 17.8%, between 61 to 70 are 12.3%, between 71 to 80 are 6.1% and above 80 years are 2.5% are shown in table no.2 and graphically in fig no. 2.

Table No. 2.

Distribution Based On Age Groups(N=163)				
Age groups	Frequency	Percent	Valid Percent	Cumulative Percent
< 30 yrs	39	23.9	23.9	23.9
31-40 yrs	27	16.6	16.6	40.5
41-50 yrs	34	20.9	20.9	61.3
51-60 yrs	29	17.8	17.8	79.1
61-70 yrs	20	12.3	12.3	91.4
71-80 yrs	10	6.1	6.1	97.5
> 80 yrs	4	2.5	2.5	100.0
Total	163	100.0	100.0	

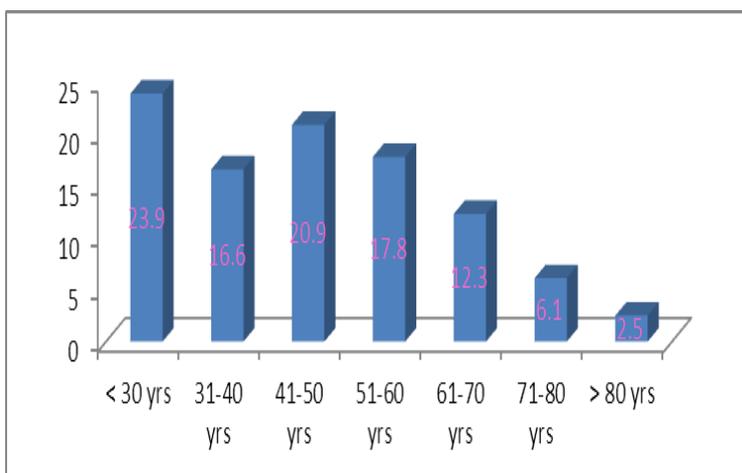


Fig No: 2 Distribution according to age groups.

Distribution of drugs according to class of gastro-protectives

A total of 213 anti gastric agents are prescribed in that PPIs were 40.37%, antacids were 2.81% H₂Receptor antagonists were 17.37%, muco protective agents were 1.40% are shown in table no.4 and graphically in fig. no. 4.

Table No. 3: Prescription Pattern Of Anti Gastric Agents.

Anti gastric class	Freq (n=213)	Percent
Proton pump inhibitors	86	40.37%
• Pantoprazole	58	
• Rabeprazole	23	
• Omeprazole		
Antacids	6	2.81%
Aluminium hydroxide+Magnesium hydroxide gel		
H₂Receptor antagonist	37	17.37%
• Ranitidine		
Mucoprotective agents	3	1.40%

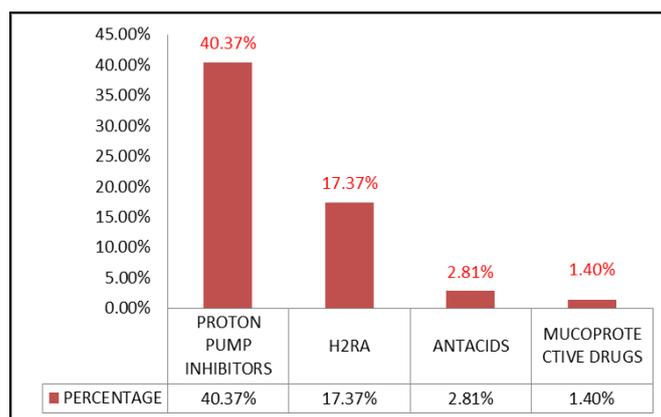


Fig. No. 3: Distribution of drugs according to anti gastric agents.

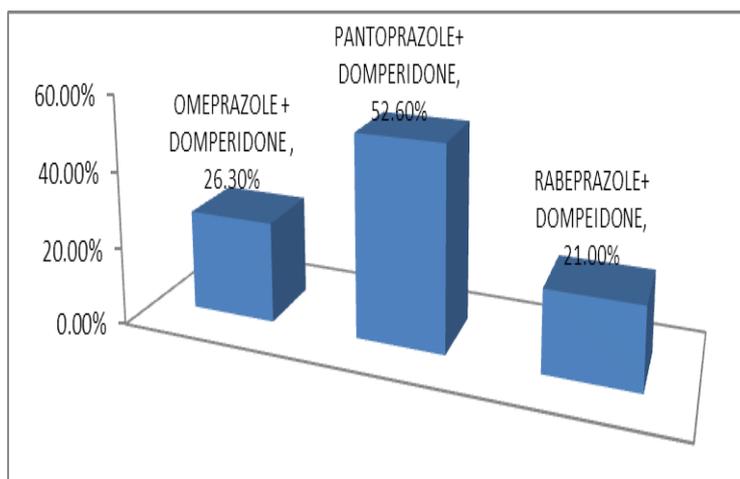
Distribution of drugs according to combination of ppi's & anti emetics

A total of 19 prescription were taken in that 5 prescriptions were omeprazole+domperidone, 10 prescriptions were pantoprazole+ domperidone, 4 were rabeprazole + domperidone are shown in table no.5 and graphically in fig. no. 5.

Table No. 4

Combination Of Proton Pump Inhibitor & Antiemetic (N=19).

Combinations	Freq	Percentage
Omeprazole +domperidone	5	26.3%
Pantoprazole +domperidone	10	52.6%
Rabeprazole+dompeidone	4	21.0%



4. Distribution of drugs according to combination.

5. Distribution of NSAIDS as co-prescription with gastro protective agents.

A total of 167 drugs are taken in that 9.5% were aceclofenac, 0.5% were aspirin, 17.96% were tramadol, 11.97% were diclofenac, 50.2% were paracetamol, 9.5% were trypsin in which that are prescribed along with gastro protectives as co-prescription are shown in table no.6 and graphically in fig. no. 6.

Table No. 5

Prescription Pattern Of Analgesic/Antipyretics (n=167).

Drugs	Freq	Percentage
Aceclofenac	16	9.5%
Asprin	1	0.5%
Tramadol	30	17.96%
Diclofenac	20	11.97%
Paracetamol	84	50.2%
Trypsin	16	9.5%

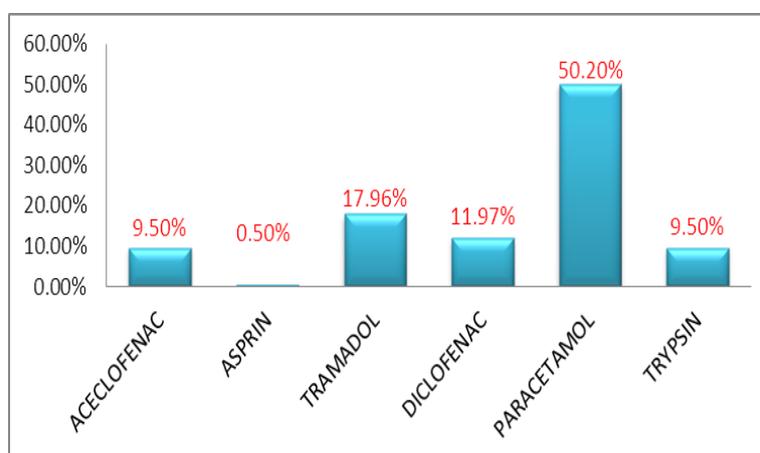


Fig. No. 5: Distribution of NSAIDS as co-prescription.

6. Distribution of antimicrobials as co-prescription with antigastric agents

A total of 140 antimicrobials were prescribed in that 9.2% were amikacin, 7.8% were cefotaxime, 8.5% were metronidazole, 45.7% were ceftriaxone, 5% were azithromycin, 2.8% were ofloxacin, 7.8% were doxycycline, 5% were piperacillin, 1.4% were gentamycin, 7.1% were tazobactam are shown in table no.7 and graphically represent in fig. no. 7.

Table No. 6: Prescribing Of Antimicrobials (n=140).

Antimicrobial	Freq	Percentage
Amikacin	13	9.2%
Cefotaxime	11	7.8%
Metronidazole	12	8.5%
Ceftriaxone	64	45.7%
Azithromycin	7	5%
Ofloxacin	4	2.8%
Doxycycline	11	7.8%
Piperacillin	7	5%
Gentamycin	2	1.4%
Tazobactam	10	7.1%

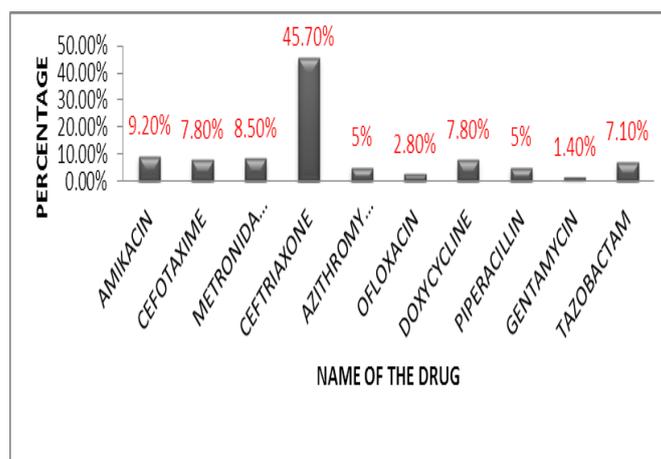


Fig No. 6: Distribution of antimicrobials as co-prescription with anti-gastric agents.

7. Distribution of corticosteroids as co-prescription with antigastric drugs

A total of 18 drugs were prescribed in that 66.6% were dexamethasone, 33.4% were prednisolone are prescribed along with gastro protective agents are shown in table no.9 and fig. no. 9.

Table No. 7

Prescribing Pattern Of Corticosteroids (N=18).

Drugs	Freq	Percentage
Dexamethasone	12	66.6%
Prednisolone	6	33.4%
Total	18	100%

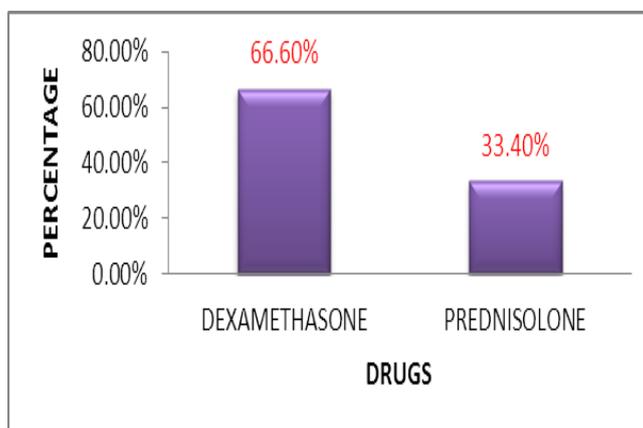


Fig. No. 7: Distribution of corticosteroids as co-prescription.

8. Distribution of vitamins as co-prescription with antigastric agents

A total of 9 prescriptions were taken in that 33.4% were non B complex vitamins, 55.5% were B complex and 11.1% were fat soluble vitamins are prescribed as co-prescription with antigastric agents are shown in table no.10 and graphically represent in fig. no. 10.

Table No. 8.

Prescribing Of Vitamins (n=9).

Vitamins	Freq	Percentage
Non b complex	3	33.4%
B complex	5	55.5%
Fat soluble	1	11.1%

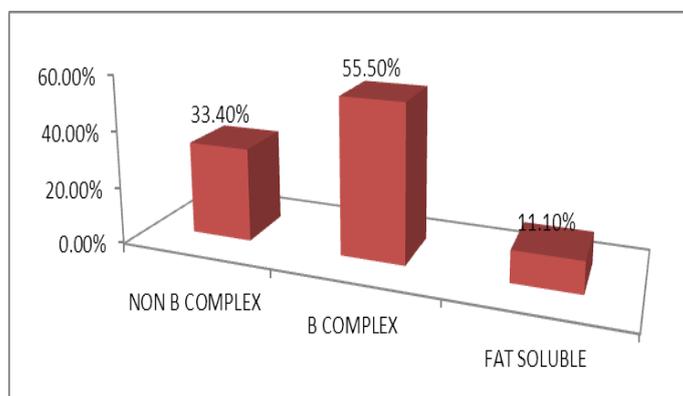


Fig. No. 8: Distribution of vitamins as co-prescription with Antigastric agents.

DISCUSSION

The principal target of the drug utilization studies/research is to promote rational prescribing of drugs. Prescription gives insights into nature of the health care delivery system in drug utilization research.

Out of 163 subjects 42.3% are females and 57.7% are males. **Machado A^[5] et al.**, conducted a similar study that shows proportion of males was more than female. In our study mostly ASD were prescribed in geriatric patients similar study conducted by **Krishna KJ^[7] et al.**, shows same results.

In our study a total of 213 subjects proton pump inhibitors are highly prescribed 40.37% in that pantoprazole is high similar study was conducted by **Pendhari SR^[5] et al.**, in that rabeprazole is highly prescribed. Another similar study conducted by **Krishna KJ^[7] et al.**, suggest that and reverse the results of which h2 receptor antagonist(54.57%) is highly prescribed than PPI's (21.25%). Coming to co-prescription of gastro protective agents in our study a total of 213 drugs are taken the majority of the prescription were ppi's 40.37% and H2 receptor antagonist was 17.37%, which was similar to other study **Kumara A et al**, to our surprise in his study the co-prescription of gastro protective agents was just reverse were the major prescription was h2 receptor antagonist (60.56%), and PPI's was (21.65%).

Gastro-protective agents were co-prescribed along with a total of 167 NSAIDS, and 140 antimicrobials. In our study paracetamol, cephalosporin's, are the agents highly prescribed which was accompanied with gastro protectives while in a similar study conducted by **Pendhari SR^[5] et al.**, shows that gastro protectives were most commonly prescribed along with and paracetamol, and fluoroquinolones.

Another similar study conducted by **Samad MDK^[11] et al.**, reveals that commonly prescribed NSAIDs along with co-prescription with gastroprotectives were paracetamol 37.0%, followed by Ibuprofen(13.8%),diclofenac sodium(12.7%).

CONCLUSION

The findings of our study regarding prescription pattern of GPS as follows: PPI's were mainly prescribed in our study compare to H2 receptor antagonists and other GPS agents.

Another major finding of our study was PPI's were mostly prescribed in medicine department based on disease, pathological status and as co-prescription. Other findings of our study for

co-prescription were as follows: Co-prescription with NSAIDs especially paracetamol, antimicrobials especially cephalosporin followed by corticosteroids and some vitamins. Another finding in PPI's were pantoprazole is highly prescribed. When coming to the prescription of PPI's the rationality was lacking in the form of un-indicated, incomplete information, frequency etc.

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