



## RESEARCH ARTICLE

### RETROSPECTIVE OBSERVATIONAL COMPARATIVE STUDY ON DRUG UTILIZATION OF PROTON PUMP INHIBITORS VS H<sub>2</sub> RECEPTOR BLOCKERS

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#### ABSTRACT

**Aim of study:** The objective of the study was to assess the retrospective observational comparative study on drug utilization of proton pump inhibitors Vs H<sub>2</sub> receptor blockers.

**Methodology:** 150 patients are included in this study. All the patients were undergoing Proton Pump Inhibitors and H-2 receptor blockers therapy and/or co – morbidities were included in the study. The study was conducted in the General Medicine Unit (IPD), Intensive Care Unit, Surgery, Orthopedic and all other departments in a multispecialty tertiary care hospital. The patient's demographic status like name, age, gender, occupation, address, IP number and date of admission of patients. Etc., were collected. The patient's lifestyle profile was collected by individual patients by direct interaction with the patients or with their care takers for any lifestyle modifications. The patient's Proton Pump Inhibitors and H-2 receptor blockers medication prescribed by the physician, along with the dosage was recorded. The appropriateness of Proton Pump Inhibitors and H-2 receptor blockers drugs like Dose, Dosage form, Duration of treatment, Route and frequency of administration with standard guidelines was also recorded.

**Results:** Results of patient population included in the study are out of 150 males 98(65%) and females 52 (35%) are using Anti-Ulcer drugs. Based on hospitalization condition in total study population for fever and pain condition Pantoprazole (9%) given in 14 prescriptions and Ranitidine (11%) given in 16 prescriptions. In total study population based on dose and dose frequency Pantoprazole (PPI) 40mg O.D is prescribed in 17% of prescriptions and Ranitidine (H2RA) 150mg B.D is prescribed in 14% prescriptions. Based on use of Anti-Ulcer drugs in NSAID prophylaxis in total study population Pantoprazole (PPI) is prescribed in 17% prescriptions and Ranitidine (H2RA) is prescribed in 13% prescriptions.

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#### INTRODUCTION

- To observe the Drug utilization evaluation of in Proton Pump Inhibitors and H<sub>2</sub> receptor blockers in IPD (In-Patient Department) patients.
- To compare the Drug utilization evaluation of Proton Pump Inhibitors and H<sub>2</sub> receptor blockers given in the hospital.
- To observe the change of the Drug utilization evaluation of Proton Pump Inhibitors and H<sub>2</sub> receptor blockers therapy in patients with various co-morbidities included in the study.

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#### DISCUSSION

- The present study is done on 150 cases who are prescribed with the PPI and H2RA, of all 98 were male and 52 were female patient. Indicating 30% higher prevalence of male population in the study. Which is on par with Milan et al. (2001) observation of proton pump inhibitors and histamine receptor antagonist drugs in different GIT condition and NASID ulcers which composed of 140 cases study, of which 105 male patients, 35 female patients taking PPI and H2RA drugs prescribed in different GI problems and NASID ulcers.
- The age distribution of the patients who were mostly prescribed with PPI and H2RA was found to be 31-40, 41-50, 51-60 years accounting 30% equally this demonstrates that the GIT problems or the indications for the use of PPI and H2RA starts in the middle age and prevails throughout the life (table 5.2).

- The marital status of the patients who were mostly prescribed with PPI and H2RA were found to be married 95 % this gives an impression that mostly the people who are found in our study were aged 30 years and above so mostly the people will be married in that age group it influenced the study (table 5.3). This marital status influenced the adherence in the patients. Married patients are found to be more adherent to the medication than the unmarried.
- The educational status of the patients who were mostly prescribed with PPI and H2RA were found to be illiterates 33% (table 5.4) this gives an impression that mostly the people who are illiterates will be worrying about any change in normal physiological problems so they will be rushing to hospital for even minor pathological problems which may be considered as best to way to control the pathological conditions in preliminary stages itself and the literates may not worry as of the illiterates leading to serious effects due to any disease or disorder.
- The occupational status of the patients who were mostly prescribed with PPI and H2RA were found to be daily wage laborers 31 % (table 5.5) this gives an impression that mostly the people who are found in our study illiterates so their occupation is based on educational status. This finding is supported by Ai L. OH, Andrew G et al., study.
- Food habits also effects the regular bowel movements and increase secretion of HCL in stomach region. This information obtained from Akbar, D.H et al., 2006 which describes that the spicy foods non vegetarians, fast food consumers will be at greater risk of developing the GI problems, in the present study among 150 patients, 14 patients were found to be vegetarians and 136 patients are non-vegetarians (Table 5.6). So the patients are in agreement with Akbar, D.H et al., 2006 study.

## RESULTS

Data collection process for this project was started in January 2016 and continued till May 2016. A Retrospective observational study of the prescribing pattern of Proton Pump Inhibitors and H-2 receptor blockers agents in IPD

### Gender Distribution of the patients included in the study

#### Based on sex

S.No.	Type of patient	No. of patients	No. of patients
1	Males	98	65%
2	Females	52	35%
	Total	150	100%

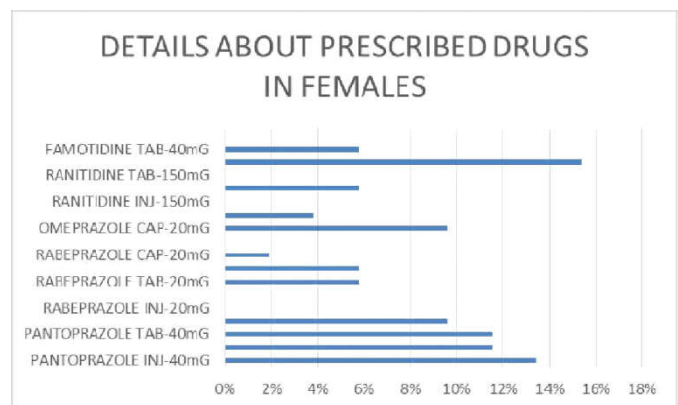
Educational status	No of patients		
	Males	Females	TOTAL
Primary	23%	21%	23%
Secondary	16%	10%	14%
Graduates	32%	27%	30%
Illiterates	29%	42%	33%
Total	100%	100%	100%

Educational Status of the patients included in the study

### Details about prescribed PPI&H2RA (Males)

- Tab.Rabeprazole 20 mg B.D were mostly prescribed in 17 prescriptions accounting 17 %.
- In H2RA Tab.Ranitidine 150 mg B.D were mostly prescribed in 13 prescriptions accounting 13%

Drug dose and frequency	Male
Pantoprazole inj-40mg	OD 10 BD 8
Pantoprazole tab-40mg	OD 8 BD 14
Rabeprazole inj-20mg	OD 1 BD 0
Rabeprazole tab-20mg	OD 7 BD 17
Rabeprazole cap-20mg	OD 1 BD 0
Omeprazole cap-20mg	OD 3 BD 5
Ranitidine inj-150mg	OD 0 BD 3
Ranitidine tab-150mg	OD 1 BD 13
Famotidine tab-40mg	OD 7 BD 0



### Details about prescribed PPI&H2RA (total)

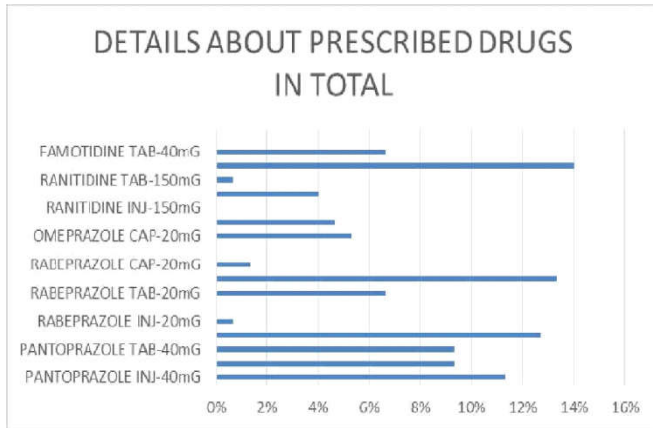
- Based on Drug dose and frequency it is clearly seen that patients mostly prescribed with PPI & H2RA medications were
- Inj.Pantoprazole 40 mg O.D were mostly prescribed in 17 prescriptions accounting 17 %.
- In H2RA Tab.Ranitidine 150 mg B.D were mostly prescribed in 21 prescriptions accounting 14%

Drug dose and frequency	Total
Pantoprazole inj-40mg	OD 17 BD 14
Pantoprazole tab-40mg	OD 14 BD 19
Rabeprazole inj-20mg	OD 1 BD 0
Rabeprazole tab-20mg	OD 10 BD 20
Rabeprazole cap-20mg	OD 2 BD 0
Omeprazole cap-20mg	OD 8 BD 7
Ranitidine inj-150mg	OD 0 BD 6
Ranitidine tab-150mg	OD 1 BD 21
Famotidine tab-40mg	OD 10 BD 0

Drug dose and frequency	Total
PANTOPRAZOLE INJ-40MG	OD 11% BD 9%
PANTOPRAZOLE TAB-40MG	OD 9% BD 13%
RABEPRAZOLE INJ-20MG	OD 1% BD 0%
	OD 7% BD 0%

RABEPRAZOLE TAB-20MG	BD	13%
	OD	1%
RABEPRAZOLE CAP-20MG	BD	0%
	OD	5%
OMEPRAZOLE CAP-20MG	BD	5%
	OD	0%
RANITIDINE INJ-150MG	BD	4%
	OD	1%
RANITIDINE TAB-150MG	BD	14%
	OD	7%
FAMOTIDINE TAB-40MG	BD	0%

**Details about prescribed PPI&H2RA (Total)**



**Conclusion**

- Gender had always influence over the disease status here in our study males are found to be more vulnerable to GIT problems and other pathological conditions than females leading to higher percent of hospitalizations.
- Mostly the age group of middle aged people are firstly influenced by the pathological conditions and that will continue to occur throughout of their life
- Marital status, educational and occupational status will fairly effect the level hospitalizations in our area Andhra Pradesh the southern region of India it is observed that married, illiterate and daily wage laborers had been mostly seen for hospitalizations at the early onset of symptoms indicating that unmarried, literate and business area people are only rushing to hospitals when the pathological conditions are advanced beyond their control from self-medications
- Food habits like spicy, non-vegetarian, fast food consuming people, smokers and alcoholics were at more risk in developing the GIT problems and other pathological conditions leading to hospitalizations
- In PPIs Pantoprazole 40 mg and in H2RAs Ranitidine 150 mg were the highest prescribed as a prophylaxis to NSAID induced GI damage.

Justification for the drug use in males	Ppi			H2ra	
	Pantoprazole	Rabeprazole	Omeprazole	Ranitidine	Famotidine
Gerd	0	1	0	0	0
Ulcers	0	0	3	0	0
Eradication of of h.pylori along with	2	0	0	0	0
Prophylaxis for nsaid induced ulcers/gi problem	16	10	2	10	4
Gi tract inflammation (gastritis/oesophagitis)	4	3	0	2	0
Prophylaxis for stress ulcers in patients with	9	6	0	1	0
Not specified	9	6	3	4	3
Total	40	26	8	17	7

	Ppi			H2ra	
	Pantoprazole	Rabeprazole	Omeprazole	Ranitidine	Famotidine
Gerd	0%	1%	0%	0%	0%
Ulcers	0%	0%	3%	0%	0%
Eradication of of h.pylori along with	2%	0%	0%	0%	0%
Prophylaxis for nsaid induced ulcers/gi	16%	10%	2%	10%	4%
Gi tract inflammation (gastritis/oesophagitis)	4%	3%	0%	2%	0%
Prophylaxis for stress ulcers in patients with	9%	6%	0%	1%	0%
Not specified	9%	6%	3%	4%	3%
Total	41%	27%	8%	17%	7%

**Justification for the PPI&H2RA use in males**

Based on Drug dose and frequency mostly prescribed with PPI & H2RA medications were

- In PPI Pantoprazole were mostly prescribed for prophylaxis for NSAID induced ulcers or GIT problems in 16 prescriptions accounting 16 %.
- In H2RA Ranitidine were mostly prescribed for prophylaxis for NSAID induced ulcers or GIT problems in 10 prescriptions accounting 10%.

- The appropriateness of Proton Pump Inhibitors and H-2 receptor blockers drugs like Dose, Dosage form, Duration of treatment in GERD, Ulcers, and Prophylaxis for NSAID induced ulcers patient is observed.

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