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Study on preferences of proton pump inhibitors in Gastroentrology specifically Gastritis and Pancreatitis

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Abstract

Background: The study conducted was retrospective, observational one in patients suffering from gastritis and pancreatitis. The purpose of the study was to observe the preferences of PPI in gastritis and pancreatitis conditions, to observe the rational use of PPI'S & to find the efficacy of PPI'S in these conditions in the Department of surgery at Rajah Muthiah Medical College & Hospital (RMMCH).

Methods: The study was conducted from the records of the patients as secondary data from (MRD) tertiary care teaching hospital. A total of 150 patients were included in this study over 12 month's period (2015-2016). Out of 50 patients are found to be with gastritis and pancreatitis. The required data for these conditions are obtained from the records available.

Results and conclusion: The total no of patients observed is 150,out of which the percentage of magnitude of the people with gastritis and pancreatitis are 33.33%.A total of 50 patients belonging to various age groups were included in study, out of which 02 patients belongs to (16-25)age group, 03 patients (26-35) age group, 17 patients (36-45), 23 patients (46-55), 04 patients (56-65), 01 patients (66-75) age group and out them the percentage of males is 64%(32) and females is 36%(18). Out of the study conducted, we observed that the most preferred PPI is PANTOPRAZOLE, they efficacy rate increased when used along with H_2 blockers (RANITIDINE). Thus according to previous studies esmoprazole is having high efficacy. Though there exist differences in potency of these drugs in milligram basis this cannot be considered clinically significant.

Keywords: PPI, H_2 blockers, gastritis, pancreatitis

Introduction

Proton pump inhibitors (PPI) generally reduce secretion of gastric acid. PPI's act on the H+/K+ pump along the basolateral membrane of the parietal cell. They accumulate and activate in an acid environment at the secretary canalicular surface of the parietal cell and bind irreversibly to H+/K+ adenosine triphosphatase, inhibiting acid production of the bound parietal cell in approximately 70% of active pumps.(1,2)The class PPI includes Omeprazole, the first drug(1989),

lansoprazole (1995), rabeprazole (1999), pantoprazole (2000), and esomeprazole (2001)(3). Proton pump inhibitors are mainly indicated for the treatment of gastroesophageal reflux disease (GERD) and gastritis. Often, PPI are used only after therapy with histamine-2 (H2) receptor antagonists, commonly called H2 blockers, has been unsuccessful for symptoms of reflux. Proton pump inhibitors also are used to treat peptic ulcers (duodenal and gastric) and drug- induced ulcers (4). PPI are considered as safe and effective in use. The Protonation forms irreversible disulfide bonds with cysteine residues in the proton pump ,two of which are most important, CYS813 and CYS822.(4) The need to achieve acid exposure in the parietal cell but not the stomach is why PPIs should be taken 20 minutes before eating breakfast.(5)

Aim of the study

The purpose of the study was to observe the preferences of PPI in gastritis and pancreatitis in the Department of surgery at Rajah Muthiah Medical College & Hospital, Annamalai Nagar-608 002, Tamilnadu, India, a 1400 bedded multi-specialty tertiary care teaching hospital.

Materials and methods

This was a retrospective Study carried out over a 6 month period from JANUARY 2016 – JUNE 2016 at Rajah Muthiah Medical College & Hospital, Annamalai Nagar -608002, Tamilnadu, India. All the Case sheets were collected from Medical Record Department (MRD). A total of 50 pre and post surgical patients were included in this study and the patients were selected based on the inclusion & exclusion criteria.

Inclusion Criteria:

- Patients admitted in surgery wards for various surgeries between the age group of 15-70 years.
- Patients with relapse and current diagnosis with gastritis and pancreatitis.

Exclusion Criteria:

- Patients above 70 years
- OPD cases

Results and discussion

1. Age wise distribution

A total of 50 patients belonging to various age groups were included in study, out of which 02 patients belongs to (16-25)age group, 03 patients (26-35) age group, 17 patients (36-45), 23 patients (46-55), 04 patients (56-65), 01 patients (66-75) age group.

AGE	NO OF PATIENTS
16-25	02
26-35	03
36-45	17
46-55	23
56-65	04
66-75	01

2. Sex wise distribution

GENDER	PATIENTS	PERCENTAGE
MALES	32	64%
FEMALES	18	36%

Out of 50 patients the percentage of males is 64 %(32) and females is 36 %(18).

3. Complications

Pancreatitis*:*

Acute pancreatitis:

This condition is usually caused by alcohol or gallstone migrating through the common bile duct. Less commonly caused by trauma, infections like mumps, ascraiasis and drugs like diuretic, azathioprine etc., (6).

Chronic pancreatitis:
This condition generally caused by alcohol consumption or possibly malnutrition in tropics (6).

Gastritis:
This condition is mostly caused by alcohol consumption, nsaids over use.

Management:
The management by ppi was never a mono therapy, usually given along with h_2 histamine blockers. These to be taken half an hour before food as they inhibit only actively secreting proton pumps. As per retrospective study conducted at rmmch, the therapy analyzed to be dual therapy (synergic effect) of

Injection pantoprazole 40mg iv bd
(or)
Tablet pantoprazole 40 mg bd
+
Injection ranitidine 50 mg iv bd
(or)
Tablet ranitidine 50 mg bd

As per study conducted at rmmch, it was analyzed that the most preferred ppi is pantoprazole.
Generally observed that iv ppi's are most frequently used to prevent the recurrent ulcer bleeding in high risk patients, these preparations are therapeutically equivalent to oral preparations.(7)

Healing Rate: (HR)
According to the studies conducted, for lansoprazole, pantoprazole, omeprazole the results were reported at 4 & 8 weeks and the rabeprazole study did at 3&6 weeks therefore the overall healing rate was obtained at 3,4,6 & 8 weeks. Hr verified between the studies, but were consistently lowered with placebo treatment for majority of the patients receiving placebo treatment the ulcer did not heal, during the course of the trail the maximum recorded as healed was just over a 3rd of the patients(39%) in any of the trails, whereas higher healing rate was observed after treatment with RANITIDINE, by the end of the trails the ulcers remains at least for half the patients(52%)in contrast by the end of the trail the ulcers were healed in 2/3rd of the patients receiving PPI'S. (8)

Conclusion
According to the previous studies conducted (8), the efficacy difference exists between the PPI'S they observed that compared to omeprazole the efficacy of the other PPI'S are improved accordingly (esmoprazole with high efficacy). Though there exist differences in potency of these drugs in milligram basis this cannot be considered clinically significant. Thus we conclude that the clinician must prescribe the PPI according to the severity and nature of the disease in subject or patient.

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