EVALUATION OF OCCURRENCE OF H. PYLORI INFECTION AND EFFICACY OF ERADICATION THERAPY IN PEPTIC ULCER DISEASE

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ABSTRACT

BACKGROUND

Acid Peptic disease is one of the most common condition seen in routine practice. Symptoms may vary from vague abdominal pain and burning sensation to massive upper GI bleeding to Ulcer perforation. The endoscopic appearance of an ulcer provides important prognostic information. Endoscopic treatment in patients with high-risk stigmata results in improved outcomes. H. Pylori eradication therapy also improves quality of life.

MATERIALS AND METHODS

This is a retrospective observational study of 250 patients who underwent upper GI endoscopy for various reasons in GMCH, Miraj from April 2016 to Feb. 2017. Out of 250 cases, 101 patients who had peptic ulcers were studied. Detailed History, Patients' symptoms and signs and recurrence rate were analysed. All post-endoscopy data and post-endoscopy management plans were analysed.

RESULTS

In this study, out of 250 (182 males, 68 females) patients who underwent upper GI scopy, it was observed that out of 250 cases, 101 patients (72 males and 29 females) had peptic ulcers. Out of 101 cases, 73 (72.27%) patients (52 males and 21 females) were positive and 28 (27.72%) were negative (20 males and 8 females) for H. pylori infection on rapid urease test. There was no significant association of H. pylori infection in relation to gender ($P = 0.984$). Eradication therapy given for 14 days to all 73 positive patients. After completion of eradication therapy, repeat endoscopy was done after 4 weeks and found that out of 73 positive cases, 65 (89.041%) patients who were kept on maintenance dose of PPI for 3 weeks were cured. Those 8 patients who were not cured were allowed to continue eradication therapy for 14 more days and then on PPI for 3 weeks. After completion of this treatment, they were found negative for H. pylori infection on repeat endoscopy.

CONCLUSION

Acid peptic disease is one of the most common condition encountered in routine practice. There was no statistical significance for occurrence of H. pylori infection in relation to gender ($p = 0.984$). Majority of cases can be managed with medical treatment. There is no recurrence if peptic ulcer disease is managed with eradication therapy along with elimination of all causative factors. Surgical treatment is needed for those who present with complications like intractable pain, massive upper GI bleeding, ulcer perforation, etc. For those who were positive for H. Pylori, eradication therapy (Omeprazole/Pantoprazole, Amoxicillin/Clarithromycin, Metronidazole/Ornidazole) with or without Bismuth subcitrate is the best treatment.

KEYWORDS

H. Pylori, Peptic Ulcer Disease, Forrest Classification, Rapid Urease Test.

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BACKGROUND

Peptic ulcer is defined as a circumscribed ulceration of the gastrointestinal mucosa occurring in areas exposed to acid and pepsin and most often caused by Helicobacter pylori infection. (Uphold & Graham, 2003). Common sites for peptic ulcers are the first part of the duodenum and lesser curvature

of the stomach, but they can occur in sites which contain ectopic gastric mucosa, e.g. Meckel's diverticulum, stoma sites following gastric surgeries. Most common cause for peptic ulcer is H. pylori infection, so eradication of H. pylori is very essential. Duodenal ulcers are more common than gastric ulcers which can be differentiated clinically.

H. pylori is associated with various diseases – many benign, premalignant and malignant lesions of digestive system including chronic gastritis, peptic ulcers, atrophic gastritis, intestinal metaplasia, gastric adenoma, gastric hyperplastic polyp, adenocarcinoma, lymphoma, etc.¹ H. Pylori infection is acquired early in life in the Indian population. The H. pylori infection has a high morbidity rate, but a low mortality rate and is curable with antimicrobial therapy.² Successful treatment and eradication of H. pylori cures the ulcer disease. As the initial infection with this bacterium mainly occurs during childhood, re-infection in

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adults is very rare.³ The lower *H. pylori* prevalence among female gastric ulcer patients may be due to the higher prevalence of NSAID use.⁴ *H. pylori* infection can be detected by invasive or non-invasive method. Non-invasive test includes serology and carbon-labelled urea breath test. The invasive test includes the rapid urease test, histological examination and culture.¹

In this study, we used Rapid urease test which is more convenient and result comes quickly. Rapid urease test is one of the invasive test, based on use of endoscopic biopsy specimen. The principle is that abundant urease enzyme produced by *H. pylori* hydrolyses urea to ammonia. The consequent rise in the pH of the medium is detected by phenol red indicator.⁵ Biopsy rapid urease testing is the most simple and rapid method for identifying *H. pylori* infection in endoscopic practice and also there are very less chances of false positive reaction.⁶ Some studies suggest quadruple therapy for resistant bacteria that includes bismuth subcitrate in addition to antacid and other antimicrobials.⁷

The Forrest classification is most widely used to classify the endoscopic appearance of bleeding peptic ulcers. It is used to predict the risk of re-bleeding and mortality and is known to have a stronger association with gastric ulcers compared with duodenal ulcers. The Forrest classification classifies ulcers with a spurting haemorrhage (Forrest Ia), oozing haemorrhage (Forrest Ib), a visible vessel (Forrest IIa), an adherent clot (Forrest IIb), haematin on the ulcer base (Forrest IIc), and a clean ulcer base (Forrest III).⁸

Symptoms are pain, "gnawing", "aching" or "burning". Duodenal ulcers occur 1-3 hours after a meal and may awaken patient from sleep. Pain is relieved by food, antacids, or vomiting. In gastric ulcers, food may exacerbate the pain while vomiting relieves it. Nausea, vomiting, belching, dyspepsia, bloating, chest discomfort, anorexia, haematemesis, &/or melaena may also occur. Nausea, vomiting and weight loss are more common with gastric ulcers.

Symptoms of acid peptic disease are primarily due to imbalance between protective and damaging factors of gastric mucosa, *Helicobacter pylori*, Smoking/Alcohol, Spicy food Duodenogastric bile reflux, Gastric stasis, abnormal acid secretion, pepsin secretion (e.g. Gastrinoma), NSAIDs, Steroids, Lower socioeconomic group.

Picture 1. Rapid Urease Test Kit

Picture 2 & 3. Forrester Class IIc Ulcer

Picture 4. Forrester Class III Ulcer

MATERIALS AND METHODS

This is a retrospective observational study of 250 patients who underwent upper GI endoscopy for various reasons in GMCH, Miraj from April 2016 to Feb. 2017. Out of 250 cases, 101 patients who had peptic ulcers were studied. Detailed History, Patients' symptoms and signs and recurrence rate were analysed. All Post-endoscopy data and post-endoscopy management plans were analysed. Chi square test and percentages were used to analyse data.

Minitab Software used to Analyse Data- Patient Selection Criteria

Inclusion Criteria

1. All Patients who underwent Upper GI scopy for acid peptic disease were included.
2. Patients between 18 to 65 years were included.

Exclusion Criteria

1. Patients with bleeding disorder.
2. Patients who were receiving anticoagulant therapy.
3. Patients who were diagnosed with Ca. stomach.

RESULTS

In this study, out of 250 (182 male, 68 female) patients who underwent upper GI scopy, it was observed that out of 250 cases, 101 patients (72 males and 29 females) had peptic ulcers. Out of 101 cases, 73 (72.27%) patients (52 males and 21 females) was positive and 28 (27.72%) were negative (20 male and 8 female) for *H. pylori* infection on rapid urease

test. In this study we observe that incidence rate of *H. pylori* infection rate in general population between age of 18 to 65 was 40.4%. There was no significant association of *H. pylori* infection in relation to gender ($P = 0.984$).

Eradication therapy given for 14 days to all 73 positive patients. After completion of eradication therapy, repeat endoscopy was done after 4 weeks and found that out of 73 positive cases, 65 (89.041 %) patients who were kept on maintenance dose of PPI for 3 weeks were cured. Those 8 patients who were not cured were allowed to continue eradication therapy for 14 more days and then on PPI for 3 weeks. After completion of this treatment, they were found negative for *H. pylori* infection on repeat endoscopy. So in this study, we observe that there was high response rate for eradication therapy with good compliance. It was also noted that after completion of eradication therapy followed by maintenance therapy, there was no recurrence in any patient (0% recurrence rate).

H. pylori infection	Male	Female	Total
Positive	52	21	73
Negative	20	8	28
Total	72	29	101

Table 1. Total Cases (101) Containing Peptic Ulcers

Eradication	73	%
Cured	65	89.04%
Not cured	8	10.95%

Table 2. Eradication Therapy for *H. pylori* Infection

Those 8 patients who were not cured were allowed to continue eradication therapy for 14 more days and then on PPI for 3 weeks. After completion of this treatment, they were found negative for *H. pylori* infection on repeat endoscopy.

Forrest Classification	Ia	Ib	Ila	Ilb	Ilc	III	Total
No. of Cases	3	4	2	10	30	52	101

Table 3. Forrest Classification of Cases: According to Forrest Classification Patients were Categorised as Follows

DISCUSSION

In this study, those patients who were having signs and symptoms of peptic ulcer and who underwent upper GI endoscopy were selected. Symptoms may range from vague abdominal pain, epigastric pain and burning sensation, dyspepsia, even history of haematemesis. First plan of treatment is medical line of management. For those who were positive for *H. pylori*, initial eradication therapy followed by antacids (PPI) is the best line of treatment. According to Forrest classification, we had Forrest Ia- 3, Ib-4 cases, Ila-2, Ilb-10, Ilc-30, III-52 cases, all are managed conservatively. For eradication, we used Omeprazole 20 mg BID + Amoxicillin 500 mg BID and Metronidazole 400 mg BID.

In this study, it was observed that out of 101; 73 (72.27%) patients were positive. Eradication therapy was given for 14 days to all 73 positive patients. After completion of eradication therapy, repeat endoscopy was done after 4 weeks and found that out of 73 positive cases, 65 (89.04%) patients were cured. Those 8 patients which were not cured were allowed to continue eradication therapy for 14 more

days and then on PPI for 3 weeks. After completion of this treatment, they were found negative for *H. pylori* infection on repeat endoscopy. Twenty three cases which were not associated with *H. pylori* infection were managed with PPI for 3 weeks. In these, some patients who were not cured with PPI were started for eradication therapy who were then cured after completion of therapy.

There was no recurrence noted in all patients following consecutive upper GI scopy after 3 months of primary treatment (0% recurrence rate).

CONCLUSION

Acid peptic disease is one of the most common condition encountered in routine practice. Majority of cases can be managed with medical treatment. Surgical treatment is needed for those who present with complications like intractable pain, massive upper GI bleeding, ulcer perforation, etc. For those who were positive for *H. Pylori*, eradication therapy (Omeprazole/Pantoprazole, Amoxicillin/Clarithromycin, Metronidazole/Ornidazole) with or without Bismuth subcitrate is the best treatment. Even those who were negative initially showed good response for eradication therapy. Early diagnosis using endoscopic management of peptic ulcer will definitely improve quality of life and help to prevent complications of ulcer like bleeding, perforation, intractable pain. Hence, early diagnosis and management using eradication therapy helps in reducing morbidity and mortality as compared to those who present late with complications.

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