

Follow-Up Clinico-Endoscopic Study among Young Patients with Peptic Ulcer Perforation: A Prospective Analysis

AFTAB RABBANI¹, MOHAMMAD SAUD NUMAN², SAQIB ALLAH DAD³, MUHAMMAD AZAM⁴, BUSHRA ADEEL⁵, AYESHA MASOOD⁶

¹MBBS MRCP, Associate Professor, Department of Medicine, Sharif Medical College, Lahore

²Fellow Gastroenterology, King Fahd Armed Forces Hospital Jeddah

³MBBS, Taishan Medical University Taian City, Shandong Province P R China

⁴Assistant Professor of Medicine, M. Islam Medical and Dental College Gujranwala

⁵Assistant Professor, Department of Pathology, Rashid Latif Medical College Lahore

⁶Assistant Professor, Department of Pathology, UCMD, University of Lahore

Correspondence author: Aftab Rabbani, Email: aftabbrabbani52@gmail.com, Cell: +92 0300 8062236

ABSTRACT

Background: One of the most common difficulties in the operation fatality is perforation peritonitis. The goal of this study was to identify risk factors for peptic ulcer disease (PUD) in young patients.

Materials and method: In this study, 70 patients were evaluated and clinical examinations and endoscopies were performed at 8 weeks and 6 months.

Place and Duration: A population-based cohort study was conducted at the Gastroenterology department of Sharif Medical College, Lahore for one-year duration from January 2021 to December 2021.

Result: Six patients died, and 4 patients were not followed up on, out of a total of 80 patients. There were 62 men and 8 women among the remaining 70 patients. The majority of the patients were between the ages of 35 and 40. After eight weeks, 34 (50%) had no infections on endoscopy, with 34 patients (48.6%) on treatment and 1 (1.4%) not on any therapies. The residual 35 patients (50%) had active ulcers and other positive endoscopic outcomes. Six months after surgery, 56 patients (80%) had no ulcers on endoscopy, with 34 on treatment and 12 without treatment. The rest 14 had some positive endoscopic findings. The study also revealed other factors linked with peptic ulcer perforation and impacting healing in the postoperative phase. Preoperative PUD symptoms, alcohol consumption, comorbidities, chronic drug consumption (NSAIDs/steroids), smoking, postoperative treatment given and H. pylori infection were all variables.

Conclusion: All patients with peptic ulcer perforation should receive H2 blockers or proton pump inhibitors as a post - operative therapies, as well as an anti-Helicobacter pylori regimen. Postoperative follow-up should include routine endoscopic examinations of these patients to detect ulcer healing.

Keywords: peptic ulcer disease, endoscopies, chronic drug consumption.

INTRODUCTION

In western countries, the occurrence & frequency of duodenal ulcers have reduced in the last 4 decades. Peptic ulcer disease (PUD) is a condition, that takes place in patients, both young and old, from all across the world¹. Among Pakistan acute abdominal surgical emergencies, peptic ulcer perforation is the 2nd utmost communal after acute appendicitis, according to the frequency of occurrence². When it comes to clinical manifestations and care, the situation with perforated peptic ulcer is changing. Physicians are rethinking the management protocol because of the enhanced link with NSAIDs, related enhanced morbidity, and follow-on increase death in the elderly³⁻⁴. Years ago, the main debate was whether emergency concise surgery was the most successful treatment; present era, less expensive surgeries and test results are becoming more popular. The use of laparoscopic perforation sealing techniques may increase as a result of a "deliberate approach" in which not all patients necessitate ultimate surgery⁵⁻⁶. Anti-secretory and anti-helicobacter medications are crucial in the post - operative treatment of patients who have had procedures other than concise surgery⁷⁻⁸.

The following were the goals and objectives of this research:

- The purpose of this research was to look into the different risk factors for peptic ulcer disease & damage in young patients.
- The importance of endoscopy on follow-up.
- The importance of eradicating Pylori in stopping ulcer recurrence.

MATERIALS AND METHOD

A population-based cohort study was conducted at the Gastroenterology department of Sharif Medical College, Lahore for one-year duration from January 2021 to December 2021.

The researchers looked at helicobacter pylori perforation in young patients (17–40 years old) in this survey, individuals who visited a tertiary care hospital Medicine and surgery outpatient department (OPD)/casualty department were involved. A number of 80 young patients with perforated peptic ulcers were evaluated.

The assessment of peptic ulcer perforation was made using the patient diagnosis, careful medical examination, operative and radiologic outcomes. During post - operative follow-up endoscopy, each patient was analyzed, with a focus on identifying and documenting various ulcer healing indicators.

Inclusion Criteria: Patients having peptic ulcer disease & perforation aged 17–40 years old.

Exclusion Criteria

The respective patients were not included in the research:

- Non-peptic ulcer causes of dyspepsia;
- Multiple endocrinal adenopathy with perforation
- Proven malignant perforation;
- Anastomotic perforation of ulcer

Outcome Factors: The subjects who were symptomatic and on endoscopy; have an active ulcer were the main outcomes documented.

METHODOLOGY

The attending team surveys all the patients with perforated peptic ulcers. The following was the overall strategy:

- Initial assessment to determine the urgency of the patient's resuscitation;
- Comprehensive physical evaluation;
- Radiologic assessment (X-ray Erect) (Fig. 1).

Patients with perforation of peptic ulcer were done with an emergency explorative laparotomy. Intra - operative, the location, number, and local findings (induration and fibrosis) were recorded (Fig. 2), & following thorough peritoneal lavage, the perforation was repaired with an omental patch (Graham's technique) and simple sutures.

All patients were examined for multiple study aspects and continued on antiulcer therapy/H. pylori elimination in the postoperative period. All of these patients were medically and endoscopically examined at 8-week and 6-month intervals, and the results were recorded. All patients were given diet plan and medicines directions when they were discharged from the hospital. Patients were regularly counseled about quitting smoking,

abstaining from alcohol, avoiding NSAIDs, and changing their eating ways. At the Specialty Health Centre, patients were tended to follow in the surgery OPD and then in the Gastroenterology OPD. Endoscopic examination with a gastrointestinal fiberscope was performed in follow-up cases in the endoscopic unit.



Fig 1: An upright X-ray of the abdomen reveals gas under the diaphragm.

The location, form, & occurrence of edema, hyperemia, & gastric peristalsis form of the pylorus were all examined. Except in patients with stenosis, the 2nd and 3rd parts of the duodenum were regularly examined. The organs were examined again in a retrograde manner while removing the instrument. Intravenous bus Copan 3cc was given to relax the organ in cases of stenosis, pylorus spasm, hypersecretion, and hyperperistalsis of the stomach.

Depend on the seriousness of their symptoms, patients were categorized into 3 groups:

Satisfying well, severe symptoms and mild dyspepsia.

A linkage between medical and endoscopic results was conducted in regards to major factors influencing ulcer healing.

RESULTS

Six patients died, and 4 patients were not followed up on, out of a total of 80 patients. There were 62 men and 8 women among the remaining 70 patients. The majority of the patients were between the ages of 35 and 40.

Table 1: Demographics of study population

Age group in years	Number of female patients	Number of male patients	Total number of patients
12-15	0	2	2
16-20	0	9	9
21-25	2	6	8
26-30	0	14	14
31-35	0	16	16
36-40	0	21	21
Total	2	68	70



Fig. 2: Gastric perforation

Table 1 shows the demographics of the patients. The study's youngest patient was a 17-year-old boy, and the oldest was a 40-year-old man. The age group of 36-40 years old had the highest rate of perforation (21 patients).

As a result, the study revealed a male preponderance.

Seven patients had gastric perforation, & the remaining had pylori-duodenal ulcer perforation, according to intraoperative findings. The spreading of PUD perforation sites is shown in Table 2.

Table 2: Distribution of site of perforation

Site		Number of patients	Number of male patients	Number of female patients
Pyloro- duodenal	Prepyloric	26 (37.1%)	26	0
	Duodenal (D1)	34 (45.7%)	32	2
Gastric		10 (14.3%)	10	0
Total		65	68	2

Antiulcer and H. pylori eradication treatments were given to the patients at eight weeks & six months. A detailed medical examination was performed at the follow-up appointment, followed by an endoscopy. Patients were classified as Satisfying well, severe symptoms and mild dyspepsia at 6 months follow-up based on their symptomatology. (Table 3).

Table 3: Summary of clinical findings at 8 weeks and 6 months postoperatively

Clinical category	8 weeks postoperatively			6 months postoperatively		
	Taking t/t	No t/t	Total	Taking t/t	No t/t	Total
Satisfactory well	30	8	38	37	2	39
Mild dyspepsia	18	10	28	16	13	39
Severe symptoms	-	4	4	2	2	4
Total	48	22	70	55	17	70

Endoscopy was performed on the patients at eight weeks & six months after surgery, & the outcomes are presented in Table 4.

Table 4: Summary of endoscopic findings at 8 weeks and 6 months postoperatively

	8 weeks postoperatively			6 months postoperatively		
	Taking t/t	No t/t	Total	Taking t/t	No t/t	Total
Active duodenal ulcer	4	5	9	6	2	8
Active pyloric ulcer	4	2	7	5	0	5
Deformed bulb with scar	2	2	4	0	2	2
Distorted bulb	1	0	1	0	1	1
Stenosis	0	1	1	2	0	2
Gastritis/duodenitis	3	2	5	2	0	2
Healing ulcer	4	4	8	1	1	2
Retained suture	5	1	6	0	0	0
Scope not negotiable	1	2	3	0	2	2
Normal	34	1	35	34	12	46
Total	50	20	70	50	20	70

After eight weeks, 34 (50%) had no infections on endoscopy, with 34 patients (48.6%) on treatment and 1 (1.4%) not on any therapies. The residual 35 patients (50%) had active ulcers and other positive endoscopic outcomes

Six months after surgery, 56 patients (80%) had no ulcers on endoscopy, with 34 on treatment and 12 without treatment. The rest 14 had some positive endoscopic findings. The study also

revealed other factors linked with peptic ulcer perforation and impacting healing in the postoperative phase. Preoperative PUD symptoms, alcohol consumption, comorbidities, chronic drug consumption (NSAIDs/steroids), smoking, postoperative treatment given and H. pylori infection were all variables. (Table 5).

Table 5: Various factors affecting peptic ulcer healing postoperatively (6 months postoperatively)

Factors analyzed	Active ulcer	Endoscopic normal/healed ulcer	total
H/o PUD	34	20	54
Associated comorbidity	20	14	34
Alcohol intake	5	2	7
Smoking	31	22	53
Chronic drug intake	8	3	11
H. pylori infection	42	20	62
Postoperative treatment	15	10	25

At the end of a 6-month follow-up period, a connection was found among medical and endoscopic outcomes in subjects who were on post-operative H. pylori eradication and antiulcer treatment. 4 groups of patients were created:

- G 1: endoscopic active ulcer with signs
- G 2: endoscopic active ulcer with no signs
- G 3: no ulcer & no signs; and
- G 4: nonnuclear indigestion.

DISCUSSION

Peptic perforation is a disease that impacts patients of all ages globally. The prevalence and incidence of PUD have declined in Western countries during the past 4 decades, but not in emerging states⁹⁻¹⁰. The omental patch is a simple and effective method of closing a ruptured peptic ulcer¹¹⁻¹². Lengthy follow-up of these patients suggests that up to 70% develop new ulcer complications and symptoms, with 21-42% requiring a decisive acid-reducing operation¹³⁻¹⁴. The medical and endoscopic assessment of this study is focused on the mortality that arises as a result of a perforated peptic ulcer. The age category of 36–40 years had the largest proportion of perforated peptic ulcer patients in the present study. In this investigation, just one 25-year-old female patient was seen¹⁵⁻¹⁶. This investigation found a male majority. The number of women patients, however, was inadequate to form a fair link. Because it is frequently hard to identify the specific place of the perforation, it is typically referred to in studies as juxta pyloric or pyloro-duodenal. In their research, Mathur et al discovered a rise in the prevalence of pyloro-duodenal perforation¹⁷⁻¹⁸.

For many years, people with a prolonged peptic ulcer history have been known to be more susceptible to develop an ulcer after perforation. Depending on how long the dyspepsia lasts, peptic ulcers are classified as acute or chronic¹⁹⁻²⁰. Chronic ulcers are those that last longer than three months. Patil reported that sixty percent of patients had PUD history. 43 percent of patients in a Dongo et al study had PUD history. Ghosh et al discovered that 53% of patients had a history of peptic ulcer disease²¹⁻²². In this study, 48.5 percent of the patients had a history of peptic ulcer. The concomitant illness of the subject worsens the peptic perforation incident. In research by Bozkurt et al. 26.4 percent of patients had co-morbidities, which led in 24.2 percent of patients suffering postoperative problems²³.

There is strong indication to propose that both alcohol and smoking are connected to perforation risk. Asefa and Geyesus discovered that 82.8 percent of the persons they surveyed had smoked in the past. Concerning the link among alcohol intake and PU perforation, Kamsir et al came to a definite result. In their respective research²⁴, Svanes et al and Doll et al found that smoking is not only intricate in the pathophysiology of PUD and peptic perforation, but likewise smokers have ulcers more often than non-smokers. When evaluating active ulceration six months post-operatively in the non-alcoholic & non-smoker groups to the

smoker and alcoholic groups (p value = 0.005 and 0.003, respectively), a statistically significant effect was achieved. Chronic medication use, particularly NSAIDs, has been associated to perforation. The role of ulcerogenic medicines, such as NSAIDs and steroids, has been explored in a number of research. According to Ghosh et al²²⁻²³, 28.4 percent of patients were using NSAIDs, and 4 percent were taking steroids and NSAIDs combined. Additional trainings reported that 53 percent and 12.7 percent of their study populations, however, utilized NSAIDs. 11 (15.7 percent) of the patients in this trial developed drug-induced perforation, with two of them acquiring an active ulcer after six months. H. pylori infection has played a vital part in the pathophysiology of peptic ulcer disease throughout the last 20 years. In research by Ng et al 61.8 percent of the participants had H. pylori infection, & 48.93 percent of them had an active ulcer on endoscopy after 6 months²⁴. H. pylori infection was discovered in 72.5 percent of the trial participants, according to Ghosh et al.

CONCLUSION

Peptic ulcer illness with perforation peritonitis is most prevalent in middle-aged men between the ages of thirty-five and forty. The repair of a damage with an omental patch is a very rapid & uncomplicated treatment, however depending on symptomatology and lifestyle, these people may require more final surgery for PUD. For all such patients, post-operative treatment with H2 blockers or proton pump inhibitors, as well as an anti-H. pylori regimen, must be provided. Regular endoscopic evaluation of such patients must also be part of the post-operative follow-up to check for ulcer curing. Though drinking and smoking are distinct risk variables in the pathophysiology of PUD, they also affect surgical ulcer repair in these patients, therefore guidance on DE addiction should be offered at the time of discharge. By the emergence of new & less invasive procedures, such as laparoscopic or endoscopic perforation closing, the managing of peptic ulcer perforation is changing. A comprehensive approach to the treatment of perforated PU is crucial for the patient's early recovery.

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