

**Original research article:**

## **A study on peptic perforation at S.P.Medical College and PBM & associated group of hospitals, Bikaner-Rajasthan**

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### **Abstract**

**Introduction:** Peptic ulcer perforation is the commonest perforation of the gastrointestinal tract affecting 2-10% population showing a shift from older to the younger population. With this statistics a study for incidence of peptic ulcer perforation in young adults 20-45 years was carried out.

**Methods:** Prospective study of 100 patients admitted on emergency basis and diagnosed as peptic ulcer perforation either gastric or duodenal perforation intraoperatively in patients 20-45 years were studied from Jan 2011 to Dec.2012.

**Observation &Results:** Of 100 patients, 40 (40%) patients were between 20 and 25, 20 patient between 26-30 years of age and 20 were between 31-40 years age and 20 patients were between 41-45 years. 82 (82%) were males and 18 (18%) were females. Twenty-three (23%) patients had history suggestive of acute peptic disease/ulcer and had taken some treatment in the form of antacid, H-2 blocker or proton pump inhibitor ,while 77 (77%) patients had no history. Pain was the consistent symptom while tachycardia, tenderness, and guarding were the signs present in all 70 (70%) patients. Gas under diaphragm (pneumoperitoneum) was found in 88 (88%). Ultrasonography abdomen S/O pyoperitoneum was found in all patients(100%). 57 (57%) patients had an anterior duodenal perforation, 12 (12%) patients had a gastric perforation and 1 patient had a combined gastric and duodenal perforation. 1 (1%) patient expired in the post-operative period, 69 (69%) patients come for regular follow and 14 (14%) patients were lost to follow-up. Only 4 (4%) patients had mild to moderate symptoms of peptic ulcer disease which were controlled by anti-ulcer drugs.

**Conclusion:** Peptic ulcer perforation is a disease more common in the young population with a male preponderance. Empirical *H. pylori* eradication therapy should be given post-operatively to every patient for prompt ulcer healing, to prevent ulcer recurrence and to decrease the incidence of re-perforation.

**Keywords:** Incidence, Peptic Ulcer Perforation, H.Pylori

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### **Introduction**

Peptic ulcer is a defect in the mucosa of the gastrointestinal tract (GIT). In order to be called an ulcer, the defect must involve the full thickness of the mucosa reaching muscularis mucosa. Though

predominantly occurring in the stomach and duodenum, they are reported to occur elsewhere in the GIT, too. This is one of the commonest structural disorders of GIT. One of the theories was first proposed by Gunzberg(1852), who attributed peptic

ulcers to excessive acidity of gastric juices as a result of some disturbances in vagal control. Lester Dragstedt, in 1935, suggested that gastric stasis with secondary hypergastrinemia was responsible for lesions in the gastric ulcer. The pathogenesis of acid peptic disease has been a major source of interest to a host of investigators in a wide range of fields. Physiologists studying basic gastric processes have partly relied on the material gathered from pathologic models to delineate the normal mechanism and pattern of secretion of motility; likewise endocrinologists studying abnormal patterns of both gastric production and the hormonal control of gastric secretion of peptic ulcer have made important contributions. Both surgeons and gastroenterologists, through very fundamental efforts to understand the basic etiology & pathogenesis of acid peptic disease, have made major breakthroughs in the development of successful operative and medical therapies. However acid peptic disease remains a major source of morbidity and mortality that every surgeon can expect to encounter on many occasions.

#### **Material and Method**

*Inclusion criteria* : Cases admitted on an emergency basis and diagnosed as peptic ulcer perforation either as a gastric ulcer or duodenal ulcer perforation in patients 20-45 years were included *Diagnostic criteria*

Presence of free gas under diaphragm and gastric ulcer perforation or duodenal ulcer perforation confirmed only on exploration were included in this study.

*Exclusion criteria* Patient having traumatic perforation involving jejunal or ileal perforation, appendicular or large bowel perforation and histopathologically proven cases of malignant gastric ulcer perforation, gastro-jejunal stomal perforation were excluded from this study. Patients below 20

years and above 45 years were excluded. Patients who did not give consent to undergo the study procedure was also excluded from this study. Intra-operative findings in the form of site and size of perforation was noted. Perforations were palpated for induration or any other abnormality. Standard procedure of Omental (Graham) patch repair (A patch of omentum is brought without tension and positioned over the perforation, and the sutures are successively tied from the superior to the inferior aspect across the omental patch to anchor the omental graft in place) followed by thorough peritoneal lavage with copious amount of normal saline was performed and as required abdominal drains were kept. Abdomen was closed in layers. Post-operatively the patients in the study were evaluated for various complications in the form of post-operative wound complications, post-operative fever, leak from perforation, and any other co-morbidities. Operative mortality was defined as death during hospitalization Patients were followed up after discharge on 2 weeks, 1 month, 3 and 6 months and till the completion of this study and will be followed thereafter also if they have any problem.

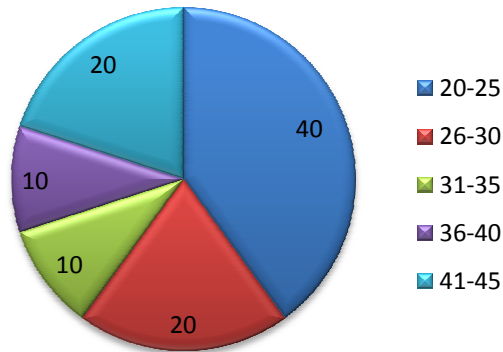
#### **Observations & Results**

The present study evaluated 100 patients of peptic ulcer perforation between 20 and 45 years of age group of patients of peptic ulcer perforation presented in casualty and surgery out-patient department from Jan 2011 to Dec 2012 i.e., Of 100 patients, 40 (40%) patients were between 20 and 25, 20 patient between 26-30 years of age and 10 were between 31-35 years age and 10 were between 36-40 years age and 20 patients were between 41-45 years. Sex incidence showed 82(82%) patients were males and 18 (18%) were females. The male is to female ratio of peptic ulcer perforation in young adult was 4.5:1. In the present study it was found that 30 (30%)

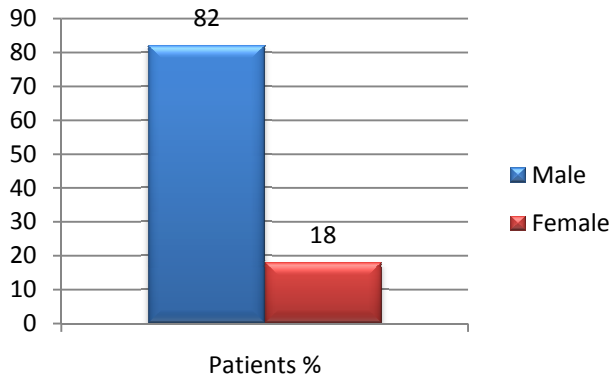
patients had a previous history suggestive of acid peptic disease/peptic ulcer and had taken some sort of treatment in the form of antacid H-2 blocker or proton pump inhibitor while 65(65%) patients had no previous history. Relation with smoking - It was found that 52 (52%) patients were smokers, whereas 48(48%) were non-smokers. H/O of alcoholism - It was found that 53 (53%) patients were alcoholic, while 47 (47%) patients were non-alcoholic. H/O of NSAIDs use - It was found that 20 (20%) patients had a previous history of NSAIDs use while 80 (80%) patients had no history of NSAIDs use. X-ray Flat Plate Abdomen in erect with gas under diaphragm (pneumoperitoneum) was found in 88 (88%) and ultrasonography abdomen S/O pyoperitoneum was found in all patients. (100%). It

was found that 74(74%) patients had an anterior duodenal perforation, 25 (25) patients had a gastric perforation with a ratio of 2.9:1, and 1 patient had a combined gastric and duodenal perforation. 65(65%) patients had a perforation of size <1 cm, and 45(45%) of the patients had a perforation of size more than 1 cm. Post-operative follow-up: 2 (2%) patient expired in post-operative period, 85(85%) patients come for a regular follow and 13 (13%) patients were lost during the follow-up period of 6 months. Of 100 patients, 85 (85%) patients were completely asymptomatic and 10(10%) patients had mild to moderate symptoms of peptic ulcer disease in the form of mild epigastric pain, regurgitation, and few episodes of vomiting that was easily controlled by anti-ulcer treatment like proton pump inhibitors.

**Nos. of Patients / Age group**



**Fig.1 : Showing % of Age Groups of Patients**



**Fig.2 : Showing % of Gender of Patients**

## Discussion

Chalya et al.[5]in 2011 in their study of peptic ulcer perforation from April 2006 to March 2011 reported the maximum number of patients, i.e., 41% in the age group of 21-30 years. Hannan et al.[11]in 2005, in their study of peptic perforation, reported that the mean age was 41 years, the highest incidence 34% was in the age group of 30-40 years. Maximum patients had duodenal perforation and cause behind this was attributed to peptic ulcer disease. Bharti et al.[3]in 1996, in their study of peptic ulcer perforation, reported that the maximum incidence 48% of peptic ulcer perforation was found in the age group of 31-40 years. 72% patients had duodenal perforation. 84% patients had a positive X-ray finding and 94% were positive on ultrasound examination. Only an inconclusive X-ray had an indication for ultrasound examination. Elnagib et al.[8]in 2008, reported the maximum number of peptic ulcer perforation patients i.e., 38% in the age group of 20-30 years. NSAIDs is amongst an important etiology for perforation accounting for total 43% patients with stress and alcoholism accounting for 23% cases when combined.

## Conclusion:

Acid peptic disease remains a common problem presenting to the surgeon despite advances in diagnosis and treatment. Duodenal ulcers are 2.4 times more common than gastric ulcers. Peptic ulcers tend to affect males more commonly than females in the ratio of 12:1 in duodenal ulcers and 2:1 in gastric ulcers. It is more common in the third and fourth

decades of life. Gastric ulcers tend to affect a slightly older subset of patients than duodenal ulcers. Common predisposing factors for peptic ulcer perforation in young adults are tobacco smoking and alcohol ingestion. Though it is world widely proven that *H. pylori* is an important predisposing factor for peptic ulcer perforation but its association in peptic ulcer perforation could not be proved in the present study due to lack of diagnostic facilities for *H. pylori* detection in our institute. First part of the duodenum is the most common site for peptic ulcer perforation followed by stomach and possibility of dual perforation in stomach and duodenum should not be overlooked. Most of the peptic ulcer perforation in young adults are small in size and are secondary to perforation of acute peptic ulcer. Simple closure of the perforation with live omentoplasty is an effective procedure in emergency situation. Empirical *H. pylori* eradication therapy should be given post-operatively to every patient for prompt ulcer healing, to prevent ulcer recurrence and to decrease the incidence of re-perforation. The identification of *H. pylori* as the causative agent in the majority of peptic ulcer disease has revolutionized the understanding and management of the disease. Incidence of morbidity and mortality is less in young adults with peptic ulcer perforation because of early presentation. Good physiological reserve and no other associated co-morbid factors favours a good prognosis. Post-operative follow-up of the treated patient is important to detect the recurrence of ulcer, and the symptomatic patient should be evaluated with upper gastrointestinal endoscopy.

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