

**Original research article**

# Clinical profile of patients with non-traumatic duodenal ulcer perforation

<sup>1</sup>Dr.Sathish V Shivamalliah, <sup>2</sup>Dr.Greeshma S, <sup>3</sup>Dr.Karunakar GK, <sup>4</sup>Dr.Chandrashekar S

<sup>1</sup>Associate Professor, Department of General Surgery, Kodagu Institute of Medical sciences, Madikeri, Karnataka, India

<sup>2,3</sup>Assistant Professor, Department of General Surgery, Kodagu Institute of Medical sciences, Madikeri, Karnataka, India

<sup>4</sup>Assistant Professor, Department of General Surgery, KVG Medical College, Sulliya, Dakshina Kannada, Karnataka, India

**Corresponding Author:**

Dr.Chandrashekar S

**Abstract**

Duodenal ulcer perforation is an abdominal emergency and is in third place in frequency, acute appendicitis and acute intestinal obstruction being the first two respectively. Prompt early diagnosis is important as it is possible to reduce the still relatively high mortality by early surgical treatment. During the study period 50 cases admitted in our surgery emergency and were studied thoroughly according to the prepared proforma (hence prospective study), proportions, chi square test & student 'T' tests were used to find out the significance and the details were arranged in the master chart for the convenience of presentation. All the patients presented with symptom of abdominal pain (100%) and among them 82% had vomiting, 94% had distension of abdomen, 86% had constipation and only 24% had fever. On examination, it was found that, all the patients had abdominal tenderness & rigidity and 92% had obliterated liver dullness, 38% were dehydrated & 52% were in good general condition. Bowel sounds were absent in all the patients.

**Keywords:**Non-traumatic, duodenal ulcer perforation, abdominal pain

**Introduction**

Duodenal ulcer perforation is one of the common complications of peptic ulcer disease despite the use of various anti-ulcer agents and eradication therapy. It is one of the most common causes of admission in casualty worldwide and more in developing nations. Important etiological factors in the causation of peptic ulcer disease are infection with H.pylori, followed by chronic NSAIDs intake, chronic alcohol intake, cigarette smoking, intake of smoked foods, spicy foods, irregular diet intake and in type a personalities<sup>[1]</sup>.

Identification of etiological factors are important, as preventive measures can be taken to avoid or prevent the complications of peptic ulcer disease<sup>[2]</sup>.

Common site for peptic ulcers are first part of duodenum and the lesser curvature of the stomach, and may also occur on the stoma after gastric surgery, esophagus and even in Meckel's diverticulum<sup>[3]</sup>.

With time there has been a steady increase in the age of the patients suffering from this fatal complication and an increase in the number of females affected, such that perforation occurs most commonly in elderly female patients now.

Duodenal ulcer perforation is an abdominal emergency and is in third place in frequency, acute appendicitis and acute intestinal obstruction being the first two respectively. Prompt early diagnosis is important as it is possible to reduce the still relatively high mortality by early surgical treatment<sup>[4]</sup>.

When acute or chronic duodenal ulcer perforates in to the peritoneal cavity, 3 components require treatment, viz., the ulcer, the perforation and the resultant peritonitis.

Perforation and the peritonitis are immediate threats to the life, the ulcer itself is not. Thus therapeutic priorities are treatment of peritonitis and securing the closure of perforation which may be achieved with surgical procedure, open or laparoscopic technique<sup>[5]</sup>.

Most patients who present themselves late to the hospital (>24hrs) after perforation had high post-operative complications with high mortality rates, recovery also depends on size of the perforation, degree of contamination, shock on presentation, comorbid conditions and the general condition of the patients. Hence various scoring systems such as APACHE scoring system, Mannheim's peritonitis index are widely used to assess pre-operative severity and post-operative outcome<sup>[6]</sup>.

**Methodology**

During the study period 50 cases admitted in our surgery emergency and were studied thoroughly according to the prepared proforma (hence prospective study), proportions, chi square test & student ‘T’ tests were used to find out the significance and the details were arranged in the master chart for the convenience of presentation. The diagnosis was made by erect x-ray abdomen, patients were categorized according to the MPI scoring system and diagnosis was confirmed on the operation table.

**Inclusion criteria**

- All patients admitted with non-traumatic duodenal ulcer perforation.

**Exclusion criteria**

- Patients with traumatic duodenal perforation & all moribund patients with duodenal ulcer perforation.

A detailed history was taken when the condition of the patient is stable. In critically ill patients history was taken after stabilizing the patients were stabilized after resuscitation.

The hospital records were also reviewed to obtain appropriate epidemiological information regarding age, sex, occupation, and clinical presentation, duration of symptoms, past history of chronic duodenal ulcer, investigations and mode of treatment.

In all the cases of peritonitis due to perforation surgery was done to close the perforation and to made the exact diagnosis of site of perforation, in cases where other than duodenal perforation was found even if we were doing in laparoscopic technique it was converted to open method and surgery was proceeded.

Patients whose condition was very poor (shock at the time of presentation) or patient himself refuses surgery, conservative treatment was adopted.

For the patients who presented to the emergency after 24 hrs.of onset of symptoms, patients with poor general condition, shock at the time of presentation, patients with MPI score of >29 and with any co-morbid conditions, laparoscopic technique was avoided due to cardiorespiratory instability while on anasthesia.

**Results**

**Table1:** Age wise distribution of Patients

Age group	Frequency	Percentage
Up to 20 years	03	06
21-30 years	10	20
31-40 years	22	44
41-50 years	11	22
51-60 years	02	04
>60years	02	04
Total	50	100

A total of 50 patients included for the study and among them, high number of patients (44%) were in the age group of 31-40 years and only 4% were above 60 years. There was no much difference in 3<sup>rd</sup> and 5<sup>th</sup> decade for the number of patients.

**Table2:** Sex wise distribution of Patients

Age group	Frequency	Percentage
Male	38	76
Female	12	24
Total	50	100

The study patients included both males and females. Majority of patients are males (76%).

**Male:** Female ratio is 3.17: 1.

**Table3:** Distribution of patients based on H/o smoking, alcohol & NSAID

Variables	Frequency	Percentage
<b>H/o smoking</b>		
Yes	36	72
No	14	28
<b>H/o alcohol</b>		
Yes	36	72
No	14	28

H/oNSAID		
Yes	16	32
No	34	68

Out of 50 patients, 72% were smokers, 72% were alcoholics and 32% had h/o NSAID consumption.

**Table4:** Distribution of patients based on clinical signs & symptoms

Parameters	Present	Absent	Total
Pain abdomen	50 (100%)	00	50
Vomiting	41 (82.0%)	09 (18.0%)	50
Distension of abdomen	47 (94.0%)	03 (6.0%)	50
Constipation	43 (86.0%)	07 (14.0%)	50
Fever	12 (24.0%)	38 (76.0%)	50
Pallor	15 (30.0%)	15 (30.0%)	50
Abdominal tenderness	50 (100%)	00	50
Abdominal rigidity	50 (100%)	00	50
Obliterated liver dullness	46 (92.0%)	04 (8.0%)	50
Bowel sounds	00	50(100%)	50
Dehydration	19 (38.0%)	31 (62.0%)	50
Good general condition	26 (52.0%)	24 (48.0%)	50
Air under diaphragm	47 (94.0%)	03 (6.0%)	50
Turbid/bile on parenthesis	44 (88.0%)	06 (12.0%)	50
Shock	12 (24.0%)	38 (76.0%)	50

All the patients presented with symptom of abdominal pain(100%) and among them 82% had vomiting, 94% had distension of abdomen, 86% had constipation and only 24% had fever.

On examination, it was found that, all the patients had abdominal tenderness & rigidity and 92% had obliterated liver dullness, 38% were dehydrated & 52% were in good general condition. Bowel sounds were absent in all the patients.

On investigation, 94% had air under diaphragm and 88% had turbid/bile on paracentesis.

**Discussion**

Walgenbach. S & Bernhard <sup>[7]</sup> in 1992 in there study showed that mortality in patient group who present themselves within 24 hrs.of onset of symptoms will be less (12%) and if the duration is more than 24hrs mortality rate was high(24%). Hence they concluded that mortality risk for patients who were operated on >24hrs after the onset of acute symptoms is more (4 times) than the patients who operated within 24hrs.

So the interval between the time of perforation and surgery has a very strong significance in deciding the mode of treatment i.e., the type of surgery to be planned and the outcome of the disease(Durr HR, Weiss C, 1992)

In our study 31.3% of patients present after 24hrs of onset of symptoms (and 40% within 12-24 hrs of onset of symptoms) out of these 5 died making the mortality in that group 20%, which is similar to that in the study described above.

In the study done by Bharathi C Ramesh <sup>[8]</sup> 10% of patients presenting after 24hrs had died, and 64% of patients presented after 24hrs of onset of symptoms.

Tsugawa K *et al.* <sup>[9]</sup> in his series reviewed that 3 risk factors, preoperative shock, delay to surgery over 24hrs and comorbid conditions increases the mortality rate with the increasing number of risk factors.

Boey John *et al.* <sup>[10]</sup> in their study revealed that concurrent medical illness, preoperative shock and delayed operation (>48hrs) as significant risk factors that increases mortality in patients with perforated duodenal ulcer in 1992. The mortality & morbidity increased whenever perforation exceed 12hrs because of peritoneal infection, in the presence of gross contamination, late exploration(>48hrs), mortality rate is high i.e., nearing 50%. The importance of peritoneal soilage and duration of perforation were mentioned as a risk factor in the outcome of duodenal ulcer perforation in the study done by Donaldson in 1970.

In our study 12 patients present in shock and 5 of them died making the mortality rate 41.7% which is similar to the above study.

**Conclusion**

In 76% of cases patients were smokers & alcoholics and is the major risk factor for perforation in the study,32% of patients gives history of taking NSAID,s for various conditions and is the next most significant risk factor.

Sudden onset of abdominal pain, situated at the epigastrium and right hypochondrium was constant symptom, vomiting and nausea were not common.

Absence of bowel sounds, diffuse abdominal tenderness, guarding, rigidity and obliteration of liver

dullness were common features in the study population.

## References

1. Maingot's abdominal operations 11<sup>th</sup> edition chapter 12, page-357 and World journal of surgery.2005 Oct;29(10):1299-1310.
2. Bhattacharya Kaushiket al. Peptic ulcer surgery a historical review, gastroenterology today.2002;6:38-40.
3. Hai Ahmad, Srivastava B Rabindra. Chronic peptic ulcer stomach and duodenum ASI text book of surgery, 1<sup>st</sup> edition, 2003, 400-408.
4. Decker GAG. The stomach, rotation of duodenum, jejunum. Lee, McGreger's synopsis of surgical anatomy 12<sup>th</sup> edition, 1999, 10-30.
5. Svanes C. Trends in peptic ulcer: incidence, etiology, treatment & prognosis, world journal of surgery. 2000;24:277-283.
6. Jarczyls G Katedry,*et al.*: evaluation of early & late results of radical treatment for perforated duodenal ulcer Pot Juglek. 1996;51:205-209.
7. WachH, Linder MM,*et al.*,Mannheim's peritonitis index prediction of risk factors of death from peritonitis construction of statistics and validation of an empirically based index. Theoretical surgery. 1987;1;169-177.
8. Bharathi C Ramesh,*et al.*, Immediate definitive surgery in perforated duodenal ulcer: a comparative study between surgery and simple closure. Indian journal of surgery, 19, 257-279.
9. Tsugawa K,*et al.*, The therapeutic strategies in performing emergency surgery for gastroduodenal perforation in 130 patients over 70 yrs of age Hepatogastroenterology. 2001;48(37):156-162.
10. Johnson David,*et al.*, Duodenal ulcer and peptic ulcer perforation Maingot's abdominal operation 10<sup>th</sup> edition, 1997, 941-970.