

A CLINICAL STUDY ON PATIENTS WITH DUODENAL ULCER PERFORATION

G. Kishore Babu¹, B. Sobha Rani²

¹Associate Professor, Department of General Medicine, S. V. Medical College, Tirupathi.

²Professor Incharge, Department of General Medicine, S. V. Medical College, Tirupathi.

ABSTRACT

INTRODUCTION

Perforated duodenal ulcer, the most catastrophic complication was Associated with high mortality in the past due to late presentation of the patients, delay in surgery and lack of antibiotics. Various authors state that the incidence of peptic ulcer disease and perforation has been declining for the past 3 decades. Because of advances in the medical therapy of peptic ulcer with a wide range of drugs the management of peptic ulcer disease has been changing and the role of surgery has been declining. Perforation is usually seen in 3rd and 4th decades with a male preponderance and the epidemiological trend is not the same worldwide. Incidence is slightly declining in western countries. The present study has been done during the period between 2013 and 2014 in S. V. R. R. Government general hospital Tirupati.

AIMS AND OBJECTIVES

The aim of the present study is to analyze the probable factors for increase in incidence of duodenal ulcer perforation, with particular emphasis on assessment of impact of H2 receptor antagonists and Proton Pump inhibitors on the incidence of perforation.

STUDY SETTING

S. V. Medical College, Department of General Surgery, Tirupati.

STUDY PERIOD

Patients attending S. V. Medical College, Department of General Surgery with perforation during the period from November 2013 to October 2014.

INCLUSION CRITERIA

Patients between age group of more than 14 years presenting with pain abdomen and who are diagnosed to have peritonitis due to duodenal ulcer perforation.

EXCLUSION CRITERIA

Patients with peritonitis due causes other than duodenal ulcer.

STUDY METHOD

Prospective Observational study among the selected patients. Total numbers of peptic ulcer cases that were admitted in this hospital and treated either medically or surgically were noted. The details of their clinical history and findings, investigation reports, operative findings, post-operative complications were recorded. Simple closure was performed for all the cases and thorough peritoneal toilet was done in all cases. All were put on appropriate antibiotics. All the patients were carefully followed in the post-operative period and their progress was noted.

CONCLUSION

The mortality in perforated peptic ulcer has been reduced owing to early approach to hospital, diagnosis, prompt surgical treatment and appropriate and adequate antibiotics. Thorough peritoneal toilet along with adequate fluid and electrolyte replacement are some of the important factors, which have improved the prognosis of duodenal ulcer perforation.

KEYWORDS

H. pylori, Urease test, Duodenal ulcer perforation, Peritonitis.

HOW TO CITE THIS ARTICLE: Babu GK, Rani BS. A clinical study on patients with duodenal ulcer perforation. J. Evid. Based Med. Healthc. 2016; 3(19), 786-791. DOI: 10.18410/jebmh/2016/179

Submission 15-02-2016, Peer Review 02-03-2016,

Acceptance 04-03-2016, Published 07-03-2016.

Corresponding Author:

Dr. G. Kishore Babu,

#5-5-330, First Floor,

Reservoir Road, Tirupathi.

E-mail: dr.kishorebabu21@gmail.com

DOI: 10.18410/jebmh/2016/179

INTRODUCTION: Perforated duodenal ulcer, the most catastrophic complication was associated with high mortality in the past due to late presentation of the patients, delay in surgery and lack of antibiotics.¹

Various authors state that the incidence of peptic ulcer disease and perforation has been declining for the past 3

decades. Because of advances in the medical therapy of peptic ulcer with a wide range of drugs the management of peptic ulcer disease has been changing and the role of surgery has been declining.²

Perforation is usually seen in 3rd and 4th decades with a male preponderance and the epidemiological trend is not the same worldwide. Incidence is slightly declining in western countries.

AIMS AND OBJECTIVES:

1. Identify the causative factors for increase in incidence of perforation.
2. Assessment of impact of drug therapy on incidence of duodenal ulcer perforation.
3. Prove the existence of H pylori in the cause of duodenal ulcer.

MATERIALS AND METHODS:

Study Setting: S. V. Medical College, Department of General Surgery, Tirupati.

Study Period: Patients attending S. V. Medical College, Department of General Surgery with perforation during the period from November 2013 to October 2014.

Inclusion Criteria: Patients between age group of more than 14 years presenting with pain abdomen and who are diagnosed to have peritonitis due to duodenal ulcer perforation.

Exclusion Criteria: Patients with peritonitis due causes other than duodenal ulcer.

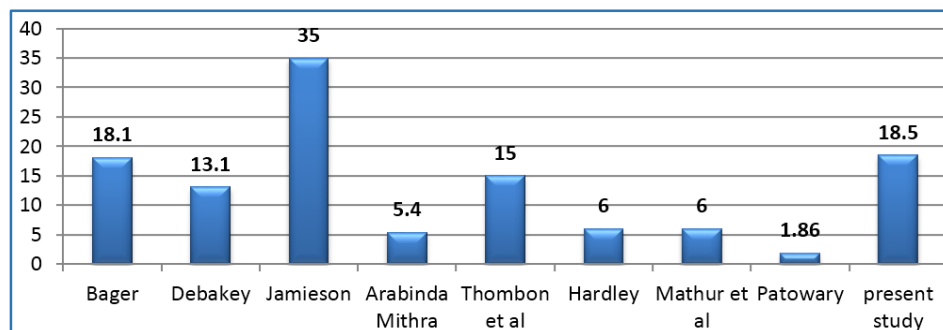
Study Method: Prospective Observational study among the selected patients. Total numbers of peptic ulcer cases that were admitted in this hospital and treated either medically or surgically were noted. The details of their clinical history and findings, investigation reports, operative findings, post-operative complications were recorded. Grahams omental patch^{3,4,5} closure was performed for all the cases and thorough peritoneal toilet was done in all cases. All were put on appropriate antibiotics. All the patients were carefully followed in the post-operative period and their progress was noted. 135 Patients of duodenal ulcer perforation treated in our hospital were studied.

RESULTS AND DISCUSSION:

INCIDENCES: In the study period a total of 727 cases of peptic ulcer were admitted and treated. Among them 135 cases presented with perforation. Incidence of perforation of duodenal ulcer in the present study is 18.5%.

Author	Incidences in %
Bager	18.1
Debakey	13.1
Jamieson ⁶	35
Arabinda mithra ⁷	5.4
Thombon et al	15
Hardley ⁸	6
Mathur et al	6
Patowary ⁹	1.86
Present study	18.5

Table 1: Incidences Given by various authors



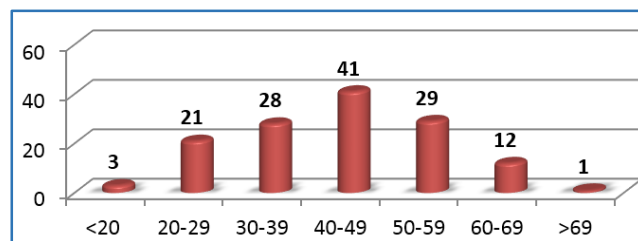
Graph 1: Incidences given by various authors

Cause of perforation	No. of cases	Percentage
Peptic ulcer	135	63.08
Traumatic perforation	31	14.48
Appendicular perforation	18	8.41
Intestinal perforation presenting with perforation	8	3.73
Typhoid ileal perforation	22	10.28
Total	214	100

Table 2: Various causes of Hollow Viscus Perforation among the patients during the study period

Author	Male: Female
Illingworth	19:1
Wangensteen	10:1
Glimour	28:1
Vyavahare & bhate ¹⁰	24:1
Present study	9:1

Table 3: Sex incidence



Graph 2: Age incidence

Age in years	No. of cases	Percentage
< 20	3	2.22
20-29	21	15.57
30-39	28	20.75
40-49	41	30.37
50-59	29	21.48
60-69	12	8.88
> 69	1	0.7

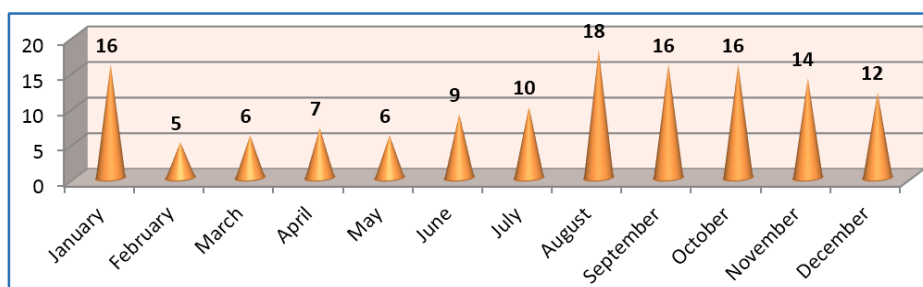
Table 4: Age incidence

Month	No. of cases	Percentage
January	16	11.85
February	5	3.7
March	6	4.44
April	7	5.19
May	6	4.44
June	9	6.67
July	10	7.4
August	18	13.33
September	16	11.86
October	16	11.86
November	14	10.37
December	12	8.88

Table 6: Seasonal incidence

Author	Age groups in years
Debakey	30-40
Illingworth et al	30-40
Jamieson	25-45
Turner	30-40
James D Hardy et al	30-40
B.A. Bhale Rao	20-40
Present study	40-49

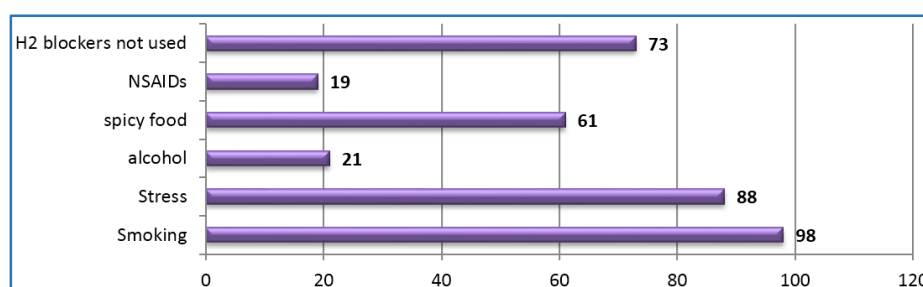
Table 5: Incidence given by different authors



Graph 3

Risk factors	No. of cases	Percentage
Smoking	98	72.59
Stress	88	65.18
Alcohol	21	15.55
Spicy food	61	45.19
NSAIDS	19	14.07
H2 blockers	73	54.07

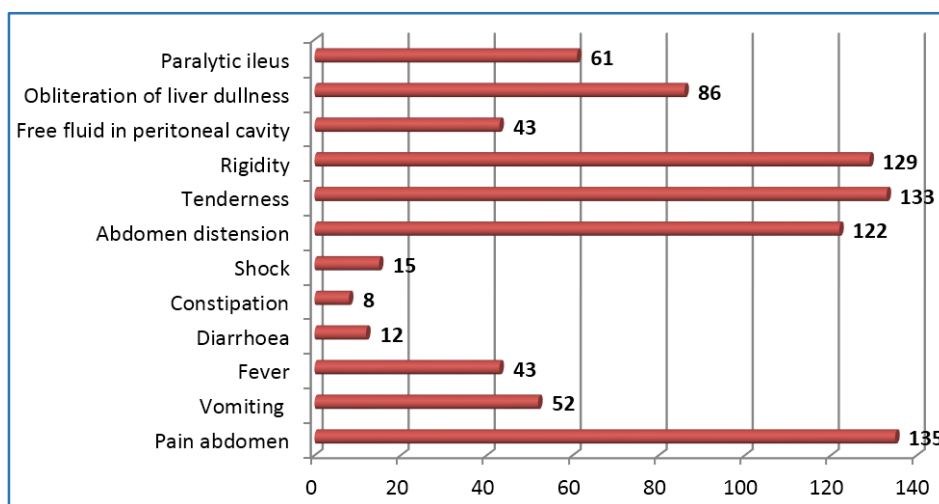
Table 7: Risk factors



Graph 4

Clinical features	No. of cases	Percentage
Pain abdomen	135	100
Vomiting	52	38.52
Fever	43	31.85
Diarrhoea	12	8.89
Constipation	8	5.93
Shock	15	11.11
Abdomen distension	122	93.38
Tenderness	133	98.59
Rigidity	129	95.56
Free fluid in peritoneal cavity	43	31.85
Obliteration of liver dullness	86	67.7
Paralytic ileus	61	45.19

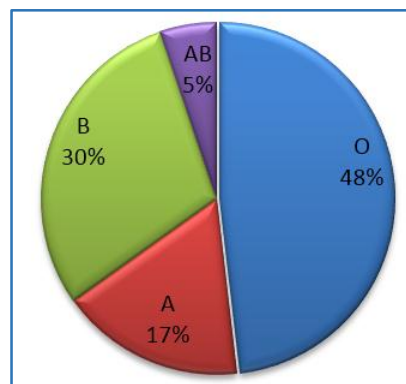
Table 8: Clinical features



Graph 5

Author	No. of cases	% with ulcer history
Thomson and Front	100	32
Turner	181	91.9
Gleun and Horrison	139	87.7
B. S. Rao	90	72
Tieu Cheng Kao et al	681	89.9
Panda and chakrabarthy ¹¹	90	75
Arabinda Mithra et al ⁷	75	72
Present study	135	62.96

Table 9: Percentage of Patients with Ulcer History from Various Authors



Graph 6

Blood group	No. of case	Percentage
O	65	48.15
A	23	17.04
B	40	29.62
AB	7	5.19

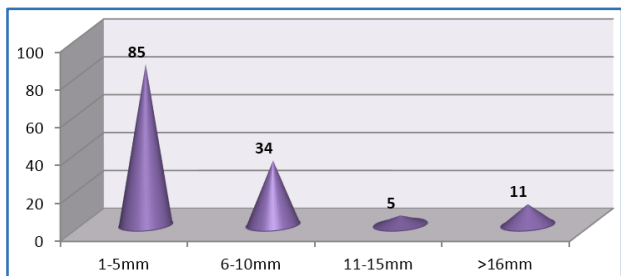
Table 10: Blood group incidence

Interval in hours	No. of cases	Percentage
<6hrs	14	10.38
6-12hrs	22	16.29
12-24hrs	50	37.04
>24hrs	49	36.29

Table 11: Approximate interval between perforation and operation

Perforation size	No. of cases	Percentage
1-5mm	85	62.97
6-10mm	34	25.19
11-15mm	5	3.7
>16mm	11	8.14

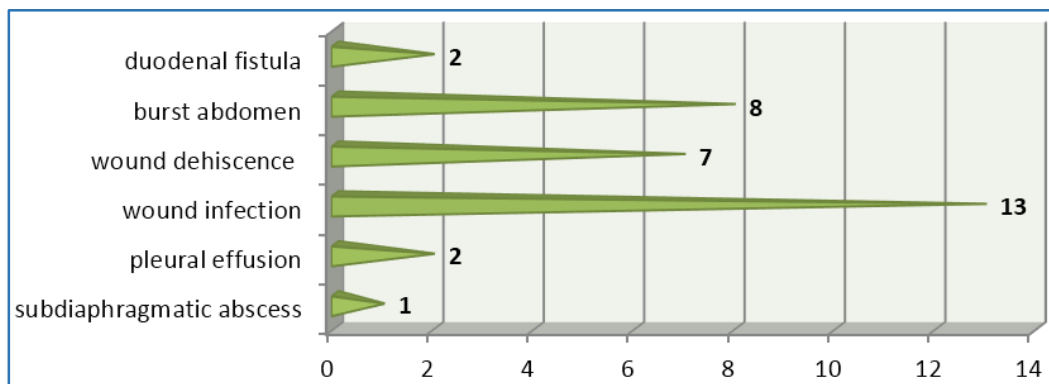
Table 12: Approximate size of perforation



Graph 7

Complications	No. of cases	Percentage
Subdiaphragmatic abscess	1	0.76
Pleural effusion	2	1.53
Wound infection	13	9.92
Wound dehiscence	7	5.34
Burst abdomen	8	6.11
Duodenal fistula	2	1.53

Table 13



Graph 8

Author	Mortality in percentage
Kazoll & Meyer	24
Hennessy	15.4
Rogers	16.5
Present study	5.92

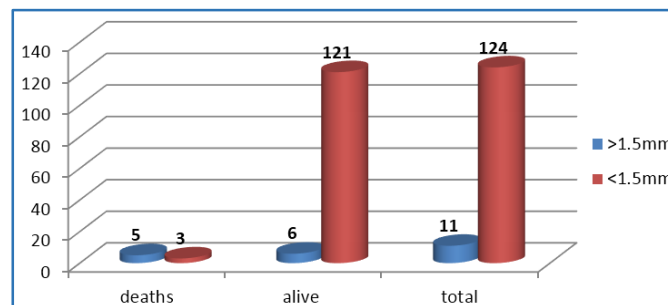
Table 14: Mortality rates from various studies

Size of perforation	Deaths	%	Alive	%	Total	%
>1.5 mm	5	45.46	6	54.54	11	100
<1.5 mm	3	2.41	121	97.58	124	100

Table 17: Relationship between size of perforation and mortality

Age in years	No. of cases expired	Percentage
20-30	0	0
30-40	1	12.5
40-50	2	25
50-60	5	62.5
Total	8	100

Table 15: Mortality and age distribution in the present study



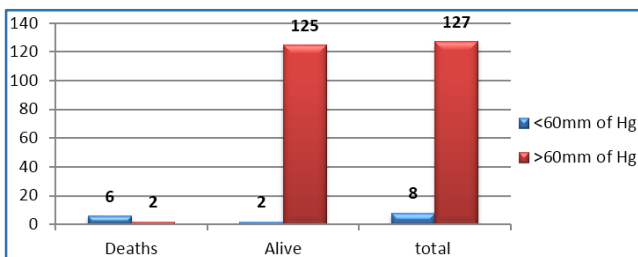
Graph 10

Systolic BP	Deaths	%	Alive	%	Total	%
<60mm of Hg	6	75	2	25	8	100
>60mm of Hg	2	1.58	125	98.42	127	100

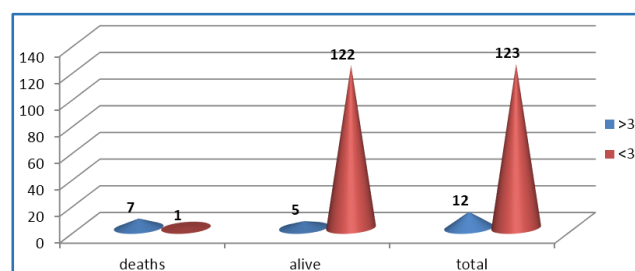
Table 16: Relationship between preoperative shock and mortality

Peritoneal exudate	Deaths	%	Alive	%	Total	%
>3L	7	58.44	5	41.66	12	100
<3L	1	0.81	122	99.19	123	100

Table 18: Relationship between peritoneal contamination and mortality



Graph 9



Graph 11

SUMMARY AND CONCLUSIONS:

1. Total number of peptic ulcer treated were 727.
2. Incidence of duodenal ulcer perforation is 18.5%.
3. Ratio of duodenal to gastric perforation is 67.5:1.
4. The most common age group is between 40-50 years with a male to female ratio of 9:1.
5. In most of the cases blood group noted was O Positive.
6. Stress, NSAIDS, Alcohol, smoking are the common risk factors noted.
7. Usage of H2 receptor antagonists and proton pump inhibitors decreases the incidence of ulcer perforation.
8. In 62.96% patients previous history of chronic duodenal ulcer was present.
9. H pylori was present in 72.73% of cases.
10. In most of the cases perforation was <1-5mm in size located in first part of duodenum anterior wall.
11. Grahams omental patch closure was done in all cases.
12. Most common post-operative complication was wound infection.
13. Mortality was 5.92% which was seen in age group of 50-60 years.
14. So once the conclusion for perforation was made, aggressive initial management of shock, thorough peritoneal toilet in the intra operative period and appropriate post-operative antibiotics are very important to minimize the deaths and decrease complications in the patients with perforation.

BIBLIOGRAPHY:

1. Mann, Charles V. Bailey and love's short practice of surgery. Arnold, London, 1999;22nd edition.
2. Harrison. Stone Harrison's principles of internal medicine. Miles Inc, pharmaceutical Division, 1991;12th edition.
3. Schwartz's text book of principles of surgery. 1998;7th edition.
4. Mc Graw Hill. Maingot's abdominal operation. 1996; 10th edition.
5. David A. The text book of surgery. The biological basis of modern surgical practice. W.B. Saunders company. 1997;15th edition:2318.
6. Jamieson RA. Acute perforated peptic ulcer—frequency and incidence in west Scotland. Brit Medi J 1955;2:222-227.
7. Mithra A. Differences in incidence of peptic perforation in two different hospitals. Ind. J. Surgery sept 1982;44:565-568.
8. Hardey JD, George RW, Harold Conn J, et al. Perforated peptic ulcer—annals of surgery. Ann surg 1961;153:911-937.
9. Patowary DN. Pyloric obstruction, hemorrhage and perforation in peptic ulcer. J. Ind. Med. Assoc 1970;55:270-274.
10. Vyvahare SR, Bhate MK. A follow up study 100 cases of peptic ulcer perforation. Indian J. surgery 1997;30:349-352.
11. Panda K, Chakaborthy PB. Surgery and mortality in peptic perforation. J Ind. Med. Assoc 1976;66:297-299.