

Incidence of Duodenal Perforation in Relation to the Socioeconomic Status in a tertiary Care Hospital at Karimnagar

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ABSTRACT

Background: Acute perforation of the duodenal ulcer produces one of the most dramatic pictures of acute abdominal catastrophe. The classical card board like rigidity, hypotension and its associated life threatening complications like sepsis and multi organ dysfunction syndrome are quite striking in most cases. The purpose of study was to corroborate with age and sex, socioeconomic status and addictions incidence in relation to duodenal perforation.

Materials and Methods: Fifty patients admitted to emergency Department Chalmeda AnandRao Institute of Medical Sciences, Karimnagar during the period May 2011 to Oct 2013 with diagnosis of duodenal perforation with peritonitis participated in this study.

Results: Majority of patients belong to the age group of 41-50 years and common in males. Most of the perforations are common in low socio-economic group and inpatients addicted to alcohol, smoking followed by NSAIDS and steroids. The open surgery, simple closure with Graham's patch technique is the commonly done procedure with minimum complications.

Conclusion: We concluded that the duodenal ulcer perforation is common in 5th decade, in males and related to heavy smoking, anxiety, chronic alcoholism, intake of NSAIDS and also long standing untreated duodenal ulcer. It is more common in patients belonging to Low socioeconomic status.

Keywords: Duodenal perforation, duodenal ulcer, low socioeconomic status

INTRODUCTION

Cases of Duodenal perforations (DU) causing acute abdomen are commonly admitted to our hospital. In spite of modern management, it is still a life threatening catastrophe. The sudden release of gastric or duodenal contents into the peritoneal cavity through a perforation leads to a devastating sequence of events which if not properly managed, is likely to cause death or other complications.^[1]

Perforation of gastric or duodenal ulcer is one of the most serious and most overwhelming catastrophe that is affecting humans.^[2] A detailed history with regard to the

symptomatology of the patient, a meticulous examination, radiological and biochemical investigations help to arrive at a correct preoperative diagnosis.

The Duodenal ulcer being more common in low socioeconomic group as the *Helicobacter pylori* is more prevalent in them because of the unhygienic surroundings, the increased physical stress in them, consumption of NSAIDS and steroids for pain relief.^[3,4,5]

So, the complication duodenal perforation is also common in low socioeconomic group forms the basis of this study. In this study, to compared the various other aetiologies like smoking, alcohol, NSAID abuse and steroids its

association with low, mid and high socioeconomic groups.^[6] The aim of study was to study the incidence of duodenal perforation in Karimnagar in relation to socioeconomic status and to compare the various aetiologies of duodenal ulcer and its perforation.

MATERIALS AND METHODS

Total 50 patients were admitted to the emergency Department, Chalmeda AnandRao Institute of Medical Sciences, Karimnagar during the period August 2011 to Oct 2013 with diagnosis of perforated peptic ulcer with peritonitis participated in this study.

Data regarding the socioeconomic status were collected by recording the type of work, education, income per month, of each patient and dividing them into High, Middle & Low classes based on Kuppuswamys classification.^[7]

Inclusion criteria:

- All the patients with diagnosis of duodenal perforations were included in this study.

Exclusion criteria:

- Case of traumatic duodenal perforations excluded in this study.

STATISTICAL ANALYSIS

All data analysis were performed using SPASS Software and Microsoft Excel Sheet.

RESULTS

A total 50 patients were included in this study. This is a prospective study made to find out the incidence of duodenal perforations in various groups of people with socioeconomic status stated as High, Middle and Low, The classification is based on Kuppuswamy classification of socioeconomic status and also comparing the incidence with age, sex, alcohol, and NSAIDS.

Duodenal perforation is commonly seen in age group of 41-50 years they constitute 30 percent of the total patients observed. Twenty four percent patients were in the age group of 31-40 years. There were twenty percent of patients in age group 51-60 years and sixteen percent in the age group 21-30 years. (Table 1)

The incidence of duodenal perforation is more common in 5th decade of life followed by 4th decade and 6th decade.

Table 2 showed that 80% of the patients of duodenal perforation have alcohol as risk factor, 71% of the patients have smoking as their risk factor, 45% of the patients have NSAIDS abuse 23% of the patients have steroid usage.

Table 1: Age distribution of the patients with DP

Age Group	No of Patients	Percentage
11-20	4	8 %
21-30	8	16 %
31-40	12	24 %
41-50	15	30 %
51-60	10	20 %
61-70	1	2 %

Table 2: Distribution of risk factors in the studied patients

Risk Factors	No of patients	Percentage
Alcohol	40	80%
Smoking	36	71%
NSAIDS	22	45%
Steroids	12	23%

Table 3: Distribution of risk factors in different age groups of patients

Age groups (Years)	Alcohol	Smoking	NSAIDS	Steroids
11-20	4	2	2	0
21-30	6	3	5	3
31-40	10	10	5	3
41-50	11	12	15	2
51-60	8	8	4	4
61-70	1	1	0	0

Table 3 showed that NSAIDS, Smoking and Alcohol are the major risk factor in the 5th decade of life.

Table 4: Number of patients addicted to Smoking, Alcohol & NSAIDS according to their age groups

Age Group	Smoking +Alcohol + NSAIDS	Percentage
11-20	0	0 %
21-30	0	0 %
31-40	4	8 %
41-50	2	4 %
51-60	2	4 %
61-70	0	0 %

Above table No. 4 shows that in 4th decade combination of Smoking, Alcohol and NSAIDS was more i.e. 8%

Table 5: Number of patients addicted to all Smoking, Alcohol, NSAIDS & Steroids

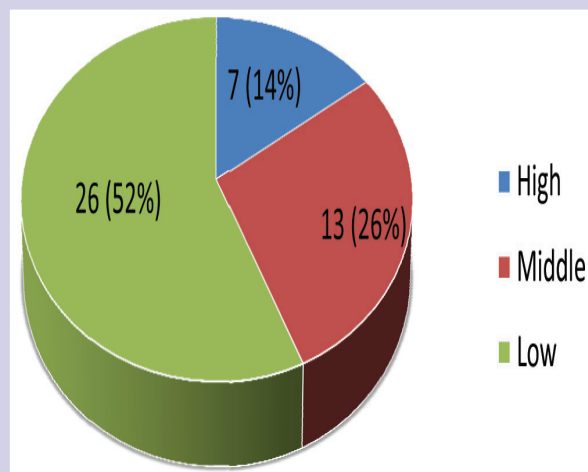
Age Group	S+A+N+S	Percentage
11-20	0	0 %
21-30	0	0 %
31-40	0	0 %
41-50	1	2 %
51-60	2	4 %
61-70	0	0 %

S – Smoking, A – Alcohol, N – NSAIDS, S - Steroids

From table No. 5 shows that in 6th decade combination of all risk factors was more i.e. 4%

Table 6: Socio Economic Status relation to Gender

Gender	High	Middle	Low	Total
Female	0 (0%)	0 (0%)	4 (8%)	4 (8%)
Male	7 (14%)	13 (26%)	26 (52%)	46 (92%)
Total	7 (14%)	13 (26%)	30 (60%)	50 (100%)

**Figure 1: Socio Economic Status relation to Gender**

Above table 6 and Figure 1 shows, 52 % of the male patient and 8 % of female patients lying in the low economic status, followed by 26% of male in middle class while 14% of male patients are lying in High socio economic status. There are no female patients lying in High and Middle class status. Overall 50% of total patients are lying in Low, 26 % in Middle while 14% of patients are lying in High economic status.

DISCUSSION

Duodenal perforation is more common in male population. Out of the total 50 patients were male patients and 46 patients were females. 22 patients had NSAID abuse, 40 patients were addicted to alcohol. 36 patients were addicted to smoking and 12 patients were on steroids.

Duodenal perforations are seen in 29 patients whose economic status is stated as low, 14 patients whose economic status is stated as Middle, 7 patients belonging to High.

Similar studies were conducted by Schabowski J et al on selected socioeconomic features and the prevalence of peptic ulcer among polish rural population covering a group of 6512 rural inhabitants, the disease was more often diagnosed among those who described their material standard as poor compared to those who described their material standard as good.^[9]

In a study conducted by Rosen Stock SJ, et al on Does helicobacter pylori infection explain all socioeconomic differences in peptic ulcer incidence? Genetic and psychosocial markers for incident peptic ulcer disease in a large cohort of Danish adults. It was concluded that poor socioeconomic status is an important risk factor for peptic ulcer disease that exerts its effect independently of H pylori infection. strenuous work may increase the risk of PUD in people with H.pylori infection. Genetic factors do not influence the risk of PUD in Danish adults.^[8]

Our study results also showed high incidence of duodenal perforation in low socio economic group patients which is in conformity with above studies. Perhaps poor hygiene with high prevalence of H. pylori infection poor nutritional status and high incidence of addiction to smoking, alcohol and indiscriminate use of NSAIDS might contribute to the high incidence of duodenal perforations in such people.

CONCLUSION

In conclusion, low socioeconomic status predisposes to the high incidence of duodenal perforation. Community education regarding hygiene practices avoidance of smoking and alcoholism and avoiding indiscriminate use of NSAIDS might help decreasing in the incidence of duodenal perforation in low socio economic groups.

CONFLICT OF INTEREST :

The authors declared no conflict of interest.

FUNDING : None

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