

Original Article**Prevalence and Pattern of Peptic Ulcer Disease among Patients Undergoing Upper Gastrointestinal Endoscopy in Koshi Hospital: A Cross-Sectional Descriptive Study****Manoj Kumar Thakur^{*1}, Rohit Kumar Yadav¹, Rajeshwar Yadav¹, Priyanka Sharma²**¹Department of Internal Medicine, Koshi Hospital, Biratnagar, Nepal, ²Department of Internal Medicine, Kolkata Medical College and Hospital, Kolkata, India**Article Received:** 15th November, 2024; **Accepted:** 25th December, 2024; **Published:** 31st December, 2024**DOI:** <https://doi.org/10.3126/jonmc.v13i2.75000>**Abstract****Background**

Acid peptic disease is one of the most common diseases encountered in outpatient department. There has been limited study on prevalence of different types of peptic diseases among patients undergoing upper gastrointestinal endoscopy especially in eastern part of Nepal. The aim of this study was to find out prevalence of different types of peptic diseases and study the socio-demographic profile of patients attending our medicine department.

Materials and Methods

A cross-sectional descriptive study conducted from April 2024 to September 2024 who presented with symptoms of dyspepsia and features of upper gastrointestinal bleeding in medicine department were included. Data were collected from patient charts, endoscopy reports and pathology report. Statistical analysis was done using statistical package for the social sciences (SPSS) software version 17.


Results

A total of 569 patients were evaluated, among them 281 were males (49.4%) and 288 (50.6%) were females. Gastritis both nonerosive 219 (38.5%) and erosive 136 (23.9%) were common endoscopic findings. It was followed by gastric ulcer 65 (11.4%) and duodenal ulcer 27 (4.7%). Normal endoscopic finding was present in 63 (11.07%). The prevalence of different types of peptic diseases was 88.9 percent among patients undergoing endoscopy. The peak incidence of peptic ulcer disease was present in age groups 40-60. Gastric ulcer and duodenal ulcer were significantly higher in male whereas non erosive gastritis was significantly higher in female.

Conclusion

Acid peptic disease is very common in patients undergoing endoscopy in our center. Gastric ulcer and duodenal ulcer were significantly higher in males whereas non erosive gastritis was significantly higher in females. Racial variation in peptic ulcer disease was not statistically significant.

Keywords: *Endoscopy, Peptic Ulcer, Prevalence*

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Introduction

Peptic ulcer disease usually occurs in the stomach and proximal duodenum. It is characterized by mucosal damage secondary to pepsin and gastric acid secretion. Less commonly, it occurs in oesophagus, distal duodenum and jejunum [1]. Peptic ulcer-Acid induced lesions found in the stomach and duodenum characterized by denuded mucosa extending into the submucosa or muscularis propria [2]. Erosive gastritis-lesions that donot reach the depth of submucosa or muscularis propria [2]. Nonerosive gastritis-characterised by inflammation of stomach lining [3]. Erythematous antral or corporal or fundal gastritis.

Almost 10-15 % of word population is suffering from peptic ulcer disease [4]. Typical symptoms include epigastric discomfort, loss of appetite, indigestion, vomiting, heart burn and ocasionaly complications like upper gastrointestinal bleeding, perforation and gastric outlet obstruction [1]. Helicobacter infection and nonsteroidal anti inflammatory drugs are major causes of peptic ulcer disease. However few studies shows increasing age, male sex are independent risk factors [4, 5]. Some studies show racial and geographical variation of peptic ulcer disease [6-8]

Studies in the context of Nepalese population are scarce especially studies from Eastern Nepal. The aim of this study was to find out prevalence of different types of peptic diseases and study the socio-demographic profile of patients attending outpatient and inpatient departments of internal medicine at Koshi Hospital and who underwent endoscopy.

Materials and Methods

This was a descriptive cross-sectional study. All patients referred to the department of internal medicine at Koshi Hospital from April 2024 to September 2024 who underwent endoscopy for symptoms of dyspepsia and features of upper gastrointestinal bleeding were included. Study was conducted after ethical clearance from the hospital. Informed consent was taken from the patients. The sample size was calculated using the formula $n = Z^2 pq/d^2$, where n is the minimum required sample size, Z is 1.96 at 95% Confidence Interval (CI), p is the prevalence, which was taken to be 36.5% [9] of the population, q is 1-p, and d is the 5% margin of error. Three forty nine was the estimated sample size. However, all the samples during the research period, i.e. 569 samples were taken into consideration. Convenience sampling method was used.

Patient details were collected from patient charts, endoscopy reports and pathology reports. Data were collected according to predesigned proforma. Statistical analysis was done using statistical package for the social sciences (SPSS) software version 17. The percentage, mean, median and

mode was calculated wherever applicable. The chi-square test, Fischer's exact probability test were applied for the prevalence of different types of acid peptic diseases on the basis of different age, sex and race or when necessary correlation analysis was applied. P value less than 0.05 was considered significant.

Results

A total of 569 patients were evaluated. Mean age was 43.01 ± 17.15 with minimum age is 10 and maximum was 86. Among them 281 were males (49.4%) and 288 (50.6%) were females. Racial distributions were Hilly Aryans 226, Madhesi Aryans 224, Tharu Rajbanshi 32, Mongoloids 37, Newars 27, Muslims 3. Gastritis both nonerosive 219 (38.5%) and erosive 136 (23.9%) were common endoscopic findings. It was followed by gastric ulcer 65 (11.4%) and duodenal ulcer 27 (4.7%). Normal endoscopic finding was present in 63 (11.07%). The prevalence of acid peptic disease was 88.9% among patients undergoing endoscopy. Gastritis was more common in age groups 40-60 (66.66%) followed by age groups 20-40 (61.18%) and 60-80 (58.75%) as shown in Table 1. Peptic ulcer both gastric ulcer and duodenal ulcer was more common in age groups 60-80 (18.75%) followed by 20-40 (16.03%) and age groups 40-60 (15.42%). This shows that Gastritis was more common in younger and middle age group and peptic ulcer disease was more common in older age group but relationship was not significant. The relationship of peptic diseases with sex is shown in Table 2

Table 1: The relationship of peptic diseases with age

Findings	Age group					Total	%	P value
	<20	20-40	40-60	60-80	>80			
Erosive gastritis	4	52	58	19	3	136	23.9%	0.125
Non erosive gastritis	19	93	76	28	3	219	38.5%	0.53
Normal	6	30	16	8	3	63	11.07%	0.69
Gastic ulcer	4	26	22	10	3	65	11.4%	0.658
Duodenitis	4	12	6	4	0	26	4.6%	0.309
Duodenal ulcer	1	12	9	5	0	27	4.7%	0.83
Esophagitis	0	3	0	0	0	3	0.5%	0.76
Esophageal ulcer	1	6	9	5	0	21	3.7%	0.51
Carcinoma	0	0	3	1	0	4	0.7%	0.53
Varices	0	0	5	0	0	5	0.9%	
Total	39	237	201	80	12	569	100%	

Gastritis both erosive and nonerosive were more common in females (69%) than males (55.5%). But all types of ulcers either gastric ulcer; duodenal



ulcer and esophageal ulcer were prevalent more in male (16%, 6.7% and 4.27%) than female (6.9%, 2.7%, 3.12%). However prevalence of gastric carcinoma was similar in both sexes; male (n=2, 0.71%) and female (n=2, 0.69%). Gastric ulcer and duodenal ulcer were significantly higher in male and Non erosive gastritis was significantly higher in female as shown in Table 2

Table 2: The relationship of peptic diseases with sex

Findings	Sex wise distribution		P value
	Male N=281	Female N=288	
Erosive gastritis	62	74	0.3
Non erosive gastritis	94	125	0.015
Gastric ulcer	45	20	0.001
Duodenitis	11	15	0.46
Duodenal ulcer	19	8	0.025
Esophagitis	3	0	0.079
Esophageal ulcer	12	9	0.469
Carcinoma	2	2	0.98

In this study out of 569 patients, race wise distribution of patients were Hilly Aryans (n=226, 39.7%), Madhesi Aryans (n=244, 42.8%), Tharu Rajbanshi (n=32, 5.6%), Mongoloids (n=37, 6.5%), Newars (n=27, 4.7%). Gastritis both erosive and non erosive were more common in Madhesi Aryans (n=165, 67.6%) followed by Hilly Aryans (n=136, 60.1%), Mongoloids (n=21, 56%), Newars (n=15, 55%) and Tharu Rajbanshi (n=16, 50%). Gastric ulcer was more common in Mongoloids (18.9%) followed by Newars (18.5%); Hilly Aryans (12.3%); Tharu Rajbanshi (9.3%) and Madhesi Aryans (8.6%). However duodenal ulcer and esophageal ulcer were more common in Hilly Aryans (6.1%, 6.6%) followed by Madhesi Aryans (4.91%, 2.04%) and Mongoloids (2.7%, 0%). However it was not statistically significant as shown in Table 3.

Table 3: Race wise distribution of different types of peptic diseases

Findings	Racial distribution							Total	P value
	Hilly Aryan N=226	Madhesi Aryan N=224	Tharu Rajbanshi N=32	Mongoloid N=37	Newar N=27	Muslim N=3	N=569		
Erosive gastritis	52	60	7	9	7	1	136	0.99	
Non erosive gastritis	84	105	9	12	8	1	219	0.38	
Gastric ulcer	28	21	3	7	5	1	65	0.215	
Duodenal ulcer	14	12	0	0	1	0	27	0.48	
Esophageal ulcer	15	5	0	0	1	0	21	0.072	
Gastric carcinoma	1	3	0	0	0	0	4	0.86	
Duodenitis	11	11	2	1	1	0	27	0.98	
Esophagitis	0	3	0	0	0	0	3	0.55	

Discussion

Acid peptic disease is a common health problem all over the world but its prevalence is in declining trend in western countries. It may be due to increasing efforts of H. pylori eradication, increasing use of proton pump inhibitor and changing trend in epidemiology of pud. However management has become more challenging than ever because of threat of increasing antimicrobial resistance and wide spread use of antithrombotic therapy in ageing population [10, 11]. Some studies showed that male gender and older age group and H. pylori infection are independent risk factors [5]. There is also studies showed racial and geographical variation of pud [6-8]. In the present study Gastritis both non erosive (38.5%) and erosive gastritis (23.9%) were commonest finding. it was common in younger and middle age group. Work stress, busy schedule, inappropriate eating, smoking, alcohol may be the reasons for higher prevalence of gastritis in these groups.

This study shows that gastric ulcer was more common than duodenal ulcer unlike other studies where duodenal ulcer was more prevalent [12-14]. According to study done by Matsuhisa et al in 2005 results showed that among peptic ulcer disease gastric ulcer was more frequent in Japanese and duodenal ulcer was more frequent in Neplease, but in this study all types of peptic ulcer was more prevalent in male than female like some studies [5, 7, 12, 15, 16]. Male predominance may be due to cigarette smoking, alcoholism more common in male and differences in life styles between sexes in Nepal but exact causes are not known. In our study incidence of peptic ulcer was common in older age group followed by younger age group instead of middle age group unlike other studies where incidence is increased with increasing age [4, 5].

Similarly racial variation of peptic ulcer disease is already established in some countries. Studies from Singapore and Malaysia revealed that peptic ulcer prevalence are known to be highest in Chinese followed by Indians and Malays [7, 8]. However no such national study has been done in Nepal. According to study done by Sharma S, Maharjan D and Thapa P which evaluated 2761 patients with racial differences into Aryans (2050) and Mongoloids (771) there was no significant difference in prevalence of peptic ulcer disease. In our study gastric ulcer was more common in Mongoloids followed by Newars but Gastritis was more prevalent in Maheshi Aryans followed by Hilly Aryans.

It is difficult to draw conclusion that peptic ulcer is



common among Mongoloids and Newars because number of patients of these groups are less in our study. Still factors attributing for racial variation in our study have to be explored in terms of food habits, culture practice, hygiene, other environmental factors as well as genetic factors. Further studies are required.

Conclusion

The prevalence of acid peptic disease was 88.9 percent among patients undergoing endoscopy. The peak incidence of peptic ulcer disease was present in age groups 40-60. Gastric ulcer and duodenal ulcer were significantly higher in males whereas non erosive gastritis was significantly higher in females. According to race wise distribution, gastritis was more common in both Hilly and Madheshi Aryans where as peptic ulcer was common among Mongoloids and Newars. However it was not statistically significant.

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Conflict of interest: None

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