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ORIGINAL RESEARCH

Assessment of histopathological spectrum of various gastroduodenal lesions

1. Dr.DeepikaModi
Assistant Professor Department of pathology, Banas Medical College and Research Institute,Palanpur, Email-dipikajmodi@gmail.com

2. Dr.Shailesh Patel
Assistant Professor Department of Pathology, Banas Medical College and Research Institute, Palanpur, Email- drshaileshguru@yahoo.com

3. Dr.SunitaDinkar
Head & Professor, Department of Surgery, Banas Medical College and Research Institute,Palanpur, Email- dinkarsunita843@gmail.com

4. Dr.JayeshModi
Professor, Department of Surgery, Banas Medical College and Research Institute,Palanpur
Email- drjayeshdmodi@gmail.com

Corresponding author
Dr Shailesh Patel, Assistant Professor Department of Pathology, Banas Medical College and Research Institute, Palanpur, Email- drshaileshguru@yahoo.com

ABSTRACT

Background: Gastroduodenal diseases are perhaps the commonest diseases in adult population worldwide. The present study was conducted to assess histopathological spectrum of various gastroduodenal lesions.

Materials & Methods:72 patients with upper GI symptoms referred for endoscopy of both genders were included. Gastric mucosal biopsies from body and antrum were also taken for detection of H. pylori. The biopsy specimens were put into a small labelled bottle containing 10% buffered formalin. The biopsies were then processed, cut into sections of 4 micrometer thickness and stained with Haematoxylin and Eosin (H&E) and modified Giemsa techniques.

Results: Age group (years) 11-20 had 5, 21-30 had 11, 31-40 had 34 and 41-50 had 22 patients. The difference was significant (P< 0.05). Gastroduodenal lesions chronic gastritis in 32, benign gastric ulcer + chronic gastritis in11, duodenitis + chronic gastritis in 5, benign duodenal ulcer + chronic gastritis in 10, MAL Toma in 8 and gastric carcinoma in 6 cases. The difference was significant (P< 0.05). H. pylori positivity in gastroduodenal lesions was seen in chronic gastritis in 20, benign gastric ulcer + chronic gastritis in 5, duodenitis + chronic gastritis in 2, benign duodenal ulcer + chronic gastritis in 6, MAL Toma in 4 and gastric carcinoma in 5 cases. The difference was significant (P< 0.05).

Conclusion: Chronic gastritis was the most commonly diagnosed gastroduodenal lesion followed by duodenitis, duodenal ulcer and gastric carcinoma.

Key words: Chronic gastritis, gastroduodenal lesion, duodenal ulcer

Introduction

Gastroduodenal diseases are perhaps the commonest diseases in adult population worldwide. Disorders of the stomach and duodenum are a frequent cause of clinical disease, with inflammatory and neoplastic lesions being particularly common.[1] The gastroduodenal lesions

have symptomatology which range from dyspepsia to altered bowel movements and dysphagia to GI bleed.[2]

Existence of H. pylori in stomach was confirmed by Robin Warren, a pathologist from Perth, Australia who observed small curved bacteria colonising the lower part of stomach (antrum) in about 50% of patients from which biopsies had been taken.[3] Barry Marshall, a young clinical fellow, became interested in Warren's findings and together they initiated gastroduodenal biopsies from 100 patients. After several attempts, Marshall succeeded in cultivating a hitherto unknown bacterial species (denoted H. pylori) from several of these biopsies.[4]

H. pylori commonly causes gastritis and peptic ulcer, a chronic inflammatory condition of stomach and duodenum, presenting as recurrent abdominal pain. It is a major cause of morbidity in infected patients as it is associated with 90% of duodenal ulcers and 80% of gastric ulcers. H. pylori infection is also associated with gastric mucosa associated lymphoid tissue (MALT) lymphoma and gastric adenocarcinoma.[5] The rate of H. pylori infection in north India is high and the spectrum of H. pylori associated gastroduodenal diseases has not been systematically investigated.[6] The present study was conducted to assess histopathological spectrum of various gastroduodenal lesions.

Materials & Methods

The present study comprised of 72patients with upper GI symptoms referred for endoscopy of both genders. The consent was obtained from all enrolled patients.

Data such as name, age, gender etc. was recorded. Complete general physical and systemic examination was done. After overnight fasting, upper GI endoscopy was performed using Fujinon EG-265WR fiber-optic gastroscope under local anaesthesia with 10% xylocaine spray. The oesophagus, stomach and duodenum were visualized and mucosal findings noticed. Endoscopic mucosal biopsies were obtained from suspected lesions. Gastric mucosal biopsies from body and antrum were also taken for detection of H. pylori. The biopsy specimens were put into a small labelled bottle containing 10% buffered formalin. The biopsies were then processed, cut into sections of 4 micrometer thickness and stained with Haematoxylin and Eosin (H&E) and modified Giemsa techniques. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I Distribution based on age group

Age group (years)	Number	P value
11-20	5	0.01
21-30	11	
31-40	34	
41-50	22	

Table I, graph I shows that age group (years) 11-20 had 5, 21-30 had 11, 31-40 had 34 and 41-50 had 22 patients. The difference was significant (P< 0.05).

ISSN 2515-8260 Volume 09, Issue 03, 2022

Graph IDistribution based on age group

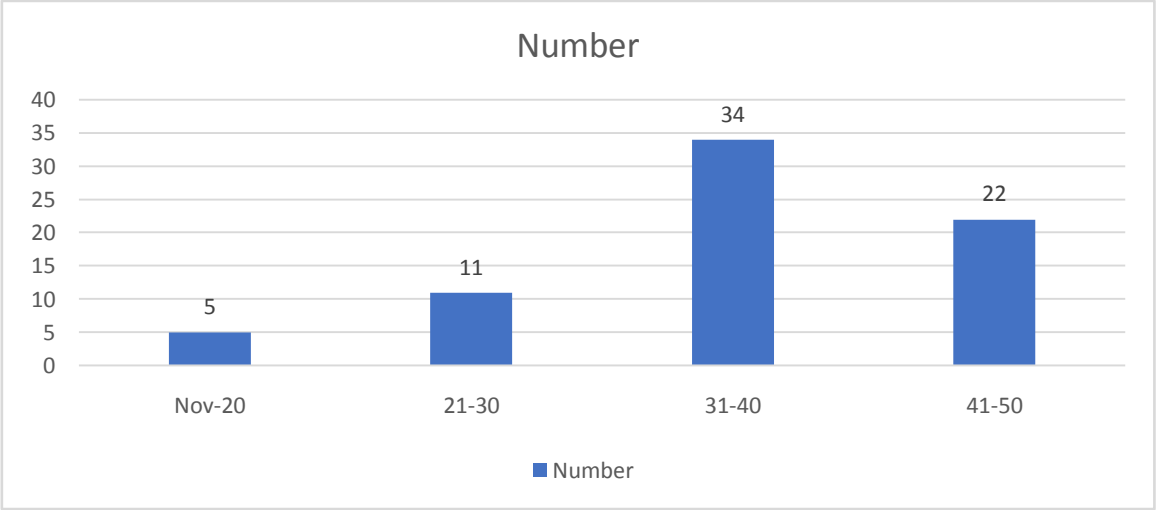
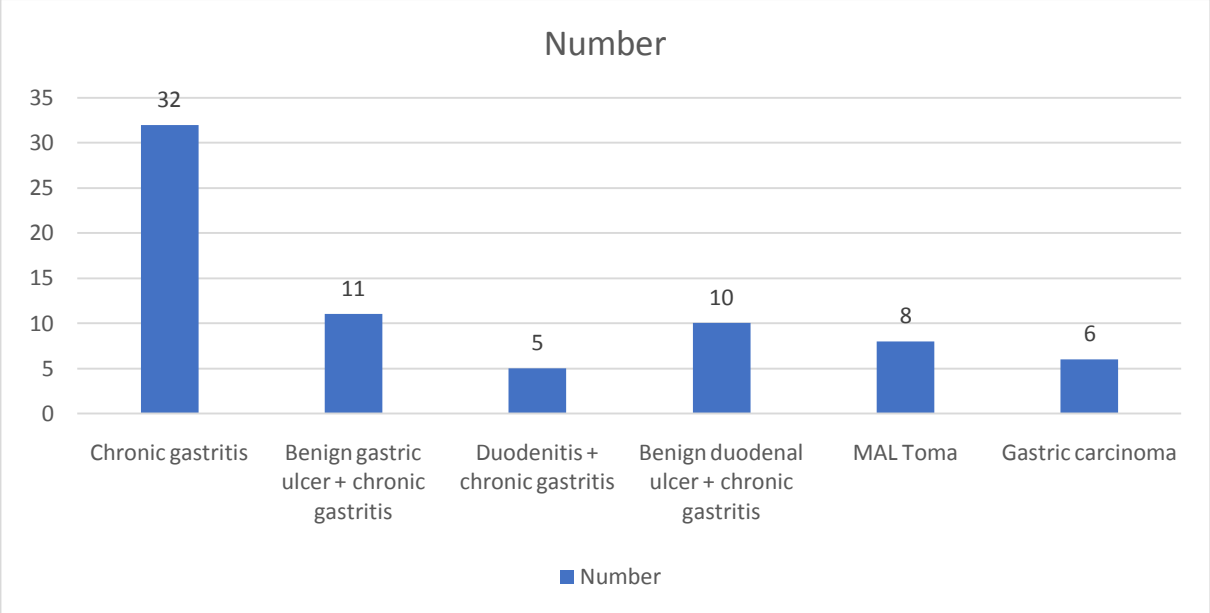


Table II Gastroduodenal lesions on endoscopic biopsy

Gastroduodenal lesions	Number	P value
Chronic gastritis	32	0.01
Benign gastric ulcer + chronic gastritis	11	
Duodenitis + chronic gastritis	5	
Benign duodenal ulcer + chronic gastritis	10	
MAL Toma	8	
Gastric carcinoma	6	

Table II, graph II shows that gastroduodenal lesions chronic gastritis in 32, benign gastric ulcer + chronic gastritis in11, duodenitis + chronic gastritis in 5, benign duodenal ulcer + chronic gastritis in 10, MAL Toma in 8 and gastric carcinoma in 6 cases. The difference was significant (P< 0.05).

Graph IIGastroduodenal lesions on endoscopic biopsy



ISSN 2515-8260 Volume 09, Issue 03, 2022

Table III H. pylori positivity in gastroduodenal lesions

Gastroduodenal lesions	H. Pylori	P value
Chronic gastritis	20	
Benign gastric ulcer + chronic gastritis	5	
Duodenitis + chronic gastritis	2	
Benign duodenal ulcer + chronic gastritis	6	
MAL Toma	4	
Gastric carcinoma	5	

Table III shows that H. pylori positivity in gastroduodenal lesions was seen in chronic gastritis in 20, benign gastric ulcer + chronic gastritis in 5, duodenitis + chronic gastritis in 2, benign duodenal ulcer + chronic gastritis in 6, MAL Toma in 4 and gastric carcinoma in 5 cases. The difference was significant ($P< 0.05$).

Discussion

Gastroduodenitis and its associated complications such as peptic ulcer disease and gastric malignancies had been a subject of intense research within medical communities in the last few decades.[7] The discovery of H. pylori and its association with gastritis offered rays of hope in terms of treatment and prognosis, and also stimulated intense research in this subject.[8] The improvement in the classification scheme and grading of gastritis had helped to standardize reports, monitor disease progression and response to therapy.[9] H. pylori is the single most important aetiological factor responsible for the biopsy changes associated with chronic gastroduodenitis.[10] The present study was conducted to assess histopathological spectrum of various gastroduodenal lesions.

We found that age group (years) 11-20 had 5, 21-30 had 11, 31-40 had 34 and 41-50 had 22 patients. Sharma et al[11] assessed the spectrum of gastroduodenal lesions on upper Gastro-Intestinal (GI) endoscopic biopsies and the prevalence of H. pylori in gastric mucosa in these lesions. An age range of 17 years to 80 years was observed with maximum cases in the 4th decade and a male to female ratio of 1.86:1. The most frequently observed lesions were chronic gastritis followed by duodenitis, duodenal ulcer and gastric carcinoma. 5% cases showed unremarkable mucosa. H. pylori positivity was seen in 47% cases. 80% cases of duodenal ulcer, 68.75% cases of duodenitis, 50.56% cases of chronic gastritis, 50% cases of gastric ulcer & 40% cases of gastric carcinoma were positive for H. pylori infection.

We found that gastroduodenal lesions chronic gastritis in 32, benign gastric ulcer + chronic gastritis in11, duodenitis + chronic gastritis in 5, benign duodenal ulcer + chronic gastritis in 10, MAL Toma in 8 and gastric carcinoma in 6 cases. Some researchers have reported higher prevalence of H. pylori in various gastroduodenal lesions than in the present study. The reason could be that the patients who were H. pylori negative had ingested acid suppressant drug and/or antibiotics which are known to suppress the organism although chronic inflammatory cells are slow to disappear after eradication of H. pylori and may take a year or more to fall to normal levels.[12]

We found that H. pylori positivity in gastroduodenal lesions was seen in chronic gastritis in 20, benign gastric ulcer + chronic gastritis in 5, duodenitis + chronic gastritis in 2, benign duodenal ulcer + chronic gastritis in 6, MAL Toma in 4 and gastric carcinoma in 5 cases. Kadam et al[13] a total 100 patients with symptoms of acid peptic disease were evaluated and endoscopic biopsies from gastroduodenal site were obtained. Among the 100 cases, common age group of presentation was 31-40 years & male to female ratio was 1.78:1. On

histopathological examination the most common lesion was chronic gastritis (33 cases) followed by duodenal ulcer (21 cases), gastric ulcer (12 cases) & gastric neoplastic lesion (14 cases). Among neoplastic lesion, adenocarcinoma was most common finding. Rapid urease test showed positive results for H. pylori in 61% cases and on histopathology in 63% of cases. H. pylori infection has significant role in the pathogenesis of acid peptic disease, of which gastritis was most common condition. Rapid urease test is simple and cost-effective. Histopathological examination using H&E and special stains are the gold standard tools for the diagnosis of H. pylori infection.

Several diagnostic strategies are available for the diagnosis of H. pylori. Invasive methods requiring endoscopic evaluation include bacteriologic culture and susceptibility testing, histological studies, molecular diagnostics and rapid urease testing. Non-invasive approaches include faecal antigen detection, serological testing, and urea breath testing.[14]

Conclusion

Authors found that chronic gastritis was the most commonly diagnosed gastroduodenal lesion followed by duodenitis, duodenal ulcer and gastric carcinoma.

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ISSN 2515-8260 Volume 09, Issue 03, 2022

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