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PREVALENCE OF HELICOBACTER PYLORI IN GASTRIC MUCOSAL BIOPSY SAMPLES IN TERTIARY CARE CENTRE BIKANER.

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ABSTRACT:

Background- Infection of the upper gastrointestinal tract with Helicobacter pylori typically leads to chronic active gastritis.

Methods- Hospital based cross sectional study was conducted on gastric specimen. The present study shows that presence of H pylori in gastric carcinoma, chronic gastritis and gastric ulcer.

Results- Out of total 200 gastric biopsy, 43.5% biopsy present with H. pylori infection. In gastric carcinoma cases out of total 134 cases 47.01% case present with H. pylori infection.

Conclusion- The data suggest that, in the India, low socioeconomic status continues to confer an increased risk for H pylori infection.

Keywords: Helicobacter Pylori, Gastric Carcinoma, Chronic Gastritis, Gastric Ulcer.

INTRODUCTION:

Infection of the upper gastrointestinal tract with Helicobacter pylori typically leads to chronic active gastritis. The increase of lymphocytes and plasma cells within the lamina propria categorizes the gastritis as chronic. The activity of the gastritis refers to the density of the mucosal infiltration by neutrophil polymorphs in the lamina propria, gastric pits, and surface epithelium. In some subjects, the chronic gastritis progresses with the transformation of the epithelium into goblet and absorptive cells (intestinal metaplasia) and a concomitant loss in gastric glands leading to gastric atrophy.[1] Gastritis and duodenitis are associated with H pylori-induced peptic ulcer disease[2]. Chronic gastritis and intestinal metaplasia are also precursor lesions for the development of dysplasia and, ultimately, gastric cancer.[3] Widespread chronic active gastritis and gastric atrophy (loss of oxyntic glands) can result in diminished gastric acid output, which may partly protect against gastroesophageal reflux disease and its wide spectrum of associated diagnoses, including reflux esophagitis, esophageal strictures, Barrett's mucosa, and esophageal adenocarcinoma.[4]

The epidemiology of H pylori has been extensively studied during the past 2 decades.A majority of investigations have utilized endoscopic diagnosis, CLO-test, breath test, serology, and molecular fingerprinting of the H pylori bacterium to delineate the natural history and clinical epidemiology of the associated diagnoses. The inverse association between H pylori infection and gastroesophageal reflux disease was similarly based primarily on clinical data. By contradistinction, the present study is focused on the histoepidemiology of H pylori as evidenced by pathologic readings contained in a unique and large database of gastric and esophageal biopsy specimens. [5-6]

Materials & Methods

Study design: Hospital based cross sectional study

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Study place: Dept. of Pathology, S.P.Medical College, Bikaner.

Study duration- period of four year.

Study type: prospective and retrospective hospital base study.

Study Unit: Tissue specimens (Gastric specimens) obtained from study population

Sampling method:

Convenience non-probability sampling.

Sample size: All patients reporting to the Pathology dept. within study duration and eligible as per inclusion criteria were included in the study.

Source of data: All the biopsy or surgically excised specimens and reference material submitted to the Department of Pathology, SPMC, Bikaner for histopathological study during study period.

Methods of collection of data:

Clinical data will be obtained from hospital record and requisition submitted along with tissue specimen received in the department. Tissue bits were routinely processed. Three to five micron thick sections will be made from paraffin blocks and was stained with H&E stain & Giemsa stain.

Results

Table 1: Year wise data of gastric biopsy.

Year	Total biopsy	Gastric biopsy
2014	6082	42
2015	7308	57
2016	8483	58
2017	8632	43
Total	30505	200

In year 2017 out of 8632 total biopsy, 43 (0.50%) were from Gastric biopsy and in last 4 years out of total biopsy 30505 , 200(0.66%) from gastric biopsy.

Table 2: Prevalence of helicobacter pylori infection.

Lesion	helicobacter pylori infection present	helicobacter pylori infection absent	Total
Gastric carcinoma	63(47.01%)	71(52.99%)	134
Chronic gastritis	15(34.89%)	28(65.11%)	43
Gastric ulcer	9(39.11%)	14(60.89%)	23
Total	87(43.5%)	113(56.5%)	200

Out of total 200 gastric biopsy, 43.5% biopsy present with H. pylori infection. In gastric carcinoma cases out of total 134 cases 47.01% case present with H. pylori infection.

Discussion

In these study 200 cases of gastric biopsies specimens were included. The incidence was 0.66% of total specimen which is higher as compared to other parts of India[7]. The majority of our patients were males in the 5th decade of their life and the youngest was 20 year old. Male:female ratio was 3:1 which was in accordance with other studies [8].

The present study was focused on the histoepidemiology of H pylori as evidenced by pathologic interpretations contained in a large database of gastric biopsy specimens. The data were collected in a systematic fashion unbiased towards the aims of the present analysis. Using histologic findings to assess the underlying epidemiology represents a new way to study epidemiologic patterns. The analysis revealed that, in general, the histologic diagnoses of H pylori, chronic gastritis, and gastric ulcer were characterized by resembling epidemiologic patterns.

The presence of gastric carcinoma was strongly associated with age. Most likely, this age-dependent rise in the prevalence of gastric carcinoma reflects on the natural history of this condition and the time it takes for the immune response against H pylori infection to advance from chronic active gastritis to later stages, such as intestinal metaplasia. An age-dependent rise was also observed in the histologic prevalence of H pylori infection and chronic active gastritis, but this rise was restricted to ages younger than 40 years. Previous studies have alluded to an age-dependent rise that involved all age groups,[9] but the present age distribution may represent a more current pattern. The current age pattern may relate to the overall low prevalence of H pylori in the general population and the fact that, even among older generations, increasingly fewer patients bear the scars of previous exposure to H pylori.

The presence of H pylori in chronic gastritis biopsy specimens showed a very strong association with each other, confirming the intimate pathophysiologic link between them. This association also revealed itself in the similar geographic distributions of these 2 histologic findings. The geographic variations indicate that a varying exposure to H pylori must exist across the India . This remarkable variation in exposure may stem from an underlying variation in the socioeconomic well-being among populations from different states. Similarly, the higher prevalence of H pylori and chronic active gastritis among Medicaid patients most likely reflects on an underlying socioeconomic variation among patients with different types of health insurance, with the lowest socioeconomic strata being covered by Bhamasa insurance.

Conclusion

In conclusion, the present study shows that presence of H pylori in gastric carcinoma, chronic gastritis and gastric ulcer. The data also suggest that, in the India, low socioeconomic status continues to confer an increased risk for H pylori infection.

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