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An Observational Study on Association of Helicobacter Pylori in Patients with Gastric Carcinoma

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Abstract

Background: Infection with H. pylori causes chronic inflammation and significantly increases the risk of developing duodenal and gastric ulcer disease and gastric cancer.

Methods: Hospital based prospective study conducted at Department of general surgery. Patients aged over 35 years undergoing endoscopic biopsy evaluation for Ca-stomach & those who are being operated for Ca-stomach were included in this study.

Results: H. pylori is the gastric pathogen and it causes chronic inflammation which ultimately increases the risk of gastric cancer. In our study 88.00% patients of carcinoma stomach were having H.pylori infection (i.e. RUT-positive cases). Only 12.00% cases of carcinoma stomach were found RUT-negative.

Conclusion: Helicobacter pylori is the common pathogen cause gastric carcinoma.

Keywords: Helicobacter Pylori, Gastric Cancer, Pathogen.

Introduction

Gastric cancer is the second most common cause of cancer death in the world, with an average of 700,000 deaths per year worldwide and an annual incidence of 800,000 cases per year (1). In developing countries, gastric cancer is the most common malignancy in men and third most prevalent in women; in Japan and China, gastric cancer is as common in both sexes [1]

Gastric cancer is an example of a cancer associated with a chronic inflammatory process that results in a metaplastic epithelium and cancer. Other examples are Barret's esophagus, squamous metaplasia in the bronchus in smokers, chronic inflammation in ulcerative colitis, or urinary bladders infected with schistosomes. In general, the risk is related to the extent and severity of the atrophic changes present [2]

Helicobacter pylori is a gastric pathogen that colonizes approximately 50% of the world's population. Infection with H. pylori causes chronic inflammation and significantly increases the risk of developing duodenal and gastric ulcer disease and gastric cancer. Infection with H. pylori is the strongest known risk factor for gastric cancer, which is the second leading cause of cancer-related deaths worldwide. Once H. pylori colonizes the gastric environment, it persists for the lifetime of the host, suggesting that the host immune response is ineffective in clearing this bacterium.

Material and Methods

Study population-Indoor and OPD adult patients aged over 35 years undergoing endoscopic biopsy evaluation for Ca-stomach & those who are being operated for Ca-stomach.

Study period-From January 2010 to June 2013.

Sample design-Selection of patient is based on inclusion and exclusion criteria.

Inclusion criteria

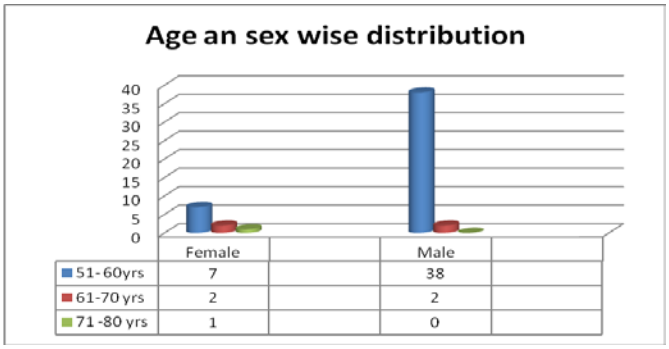
- Previously histopathologically diagnosed case of carcinoma-stomach(By endoscopic tissue biopsy & post-operative resected specimen sent for histopathological confirmation of gastric carcinoma and H.pylori infection by RUT).
- All patients above the age of 35 years having history and clinical features suggestive of gastric malignancy undergoing diagnostic upper GI endoscopic biopsy &RUT of biopsy tissue.

Exclusion criteria

- Patients aged less than 35 years
- Patients presenting in emergency with acute haemetemesis, perforation & undergoing any intervention in emergency OT, suspected to have gastric carcinoma.
- Patients having Acute dyspeptic symptoms and clinical suspicion of Gastric carcinoma, subsequently proved to be non-malignant on upper GI-endoscopy and biopsy.

Data analysis- All recorded data will be analysed with suitable diagrams, figures, tables and statistical methods if needed and findings will be evaluated in details to draw an appropriate conclusions.

Result



Although our study was designed to study the patients above the age of 35 years, but there were no patients between 35-50 years in our study.

Table 1: Frequency of site of lesion

Site of lesion	frequency	Percentage
Fundus	5	10.00
Body	7	14.00
Antro-pylorus	38	76.00
Total	50	100

Table 2 : Frequency of endoscopic biopsy RUT

Endoscopic biopsy RUT	FREQUENCY	PERCENTAGE
Negative	6	12.00
Positive	44	88.00
Total	50	100

Table 3: Frequency of endoscopic biopsy

Histopathology	Frequency	Percentage
Benign	4	8.00
Malignant	46	92.00
Total	50	100

Discussion

In this observational study we included 50 cases of carcinoma-stomach,aged above 35 years , admitted from Surgical-OPD during the time period of January-2015 to June-2016 to study the association of H.pylori infection with carcinoma stomach with reference to

different sites of gastric involvement and different histopathological types of Ca-stomach.

For this we included the patients with endoscopic-biopsy proved carcinoma stomach who subsequently underwent operative procedures and those patients whose clinical features & physical examinations were suggestive of gastric malignancy who subsequently underwent endoscopic biopsy. In both groups of patients, either the resected specimen (obtained by surgery) or the biopsy specimen (obtained by upper GI endoscopy) was examined by RUT-Kit (Rapid Urease Test) for confirmation of H. pylori infection along with histopathological confirmation of gastric malignancy.

In different overseas & Indian studies,it was found that H.pylori infection is strongly associated with carcinoma stomach. Prevalence of H.pylori infection is more common in distally (antro-pyloric region) located gastric cancer and in adenocarcinoma type of carcinoma stomach.

In this present study, the majority of gastric carcinoma patients are aged between 51-60 years . Ashis Kumar Saha et al [3] study also found the same age distribution of the carcinoma stomach patients. This study shows that male patients are more frequently affected by carcinoma stomach and mainly the age group between 51-60 years is affected.

In our study, antro-pyloric region of stomach found to be involved in carcinoma stomach, followed by cases in body and cases in fundus of the stomach. MA Kabir et al [4], AK Khanna et al [5] and Ashis Kumar Saha et al [3] studies also concluded that antro-pyloric region of the stomach is the most frequent of involvement by carcinoma stomach.

In this study, 44 cases(98.00%) out of total 37 cases of antro-pyloric carcinoma-stomach were harboring the H.pylori infection(i.e. RUT-positive). So this study shows that H.pylori infection is associated with antro-pyloric involvement by carcinoma stomach followed by fundic and body region and this association of H.pylori infection with site of involvement by carcinoma stomach is statistically also significant. Narayan thapa et al[6], AK Khanna et al [5] and Martin-de-Argila-C et al [7] studies also showen that H.pylori infection is commonly associated with distal(antro-pyloric region) gastric carcinoma. In Narayan Thapa et al [6] study, H. pylori infection in distal (Antro-pyloric) Ca-stomach was found in 75.86% cases while in rest of sites it was found only in 45.45% cases.

Conclusion

Helicobacter pylori is the common pathogen colonizing gastric epithelium. Chronic infection by this organism in stomach causes the development of chronic atrophic gastritis and metaplastic changes, which ultimately may leads to the development of gastric cancer.

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