



ORIGINAL RESEARCH PAPER

General Surgery

PREVALENCE OF HELICOBACTER PYLORI IN PATIENTS OF GASTRIC CARCINOMA

KEY WORDS:

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ABSTRACT

INTRODUCTION : *H. pylori* is a gastric pathogen that colonizes approximately 50%-60% of the world's population. Infection with *H. pylori* causes chronic inflammation and significantly increases the risk of developing duodenal, gastric ulcer disease and gastric carcinoma. This study is undertaken to determine the clinical and pathological profile of gastric carcinoma in our institute and to find out the prevalence of *H. pylori* infection in gastric carcinoma patients.

MATERIALS AND METHODS : We conducted our study in the Department of Surgery, Dr. B. R. A. M. Hospital, Raipur, C.G. over a period of 18 months. It was a hospital based, cross-sectional observational study. During upper GI endoscopy, site of the lesion and macroscopic type of the lesions were identified and recorded. Multiple tissue biopsy samples (>10) were collected from non-necrosed region of cancer. One piece of each paired specimen were immediately subjected to RapidUrease Test dry kit (RUT) for detection of Helicobacter pylori. Further these biopsy specimens were subjected to modified giemsa staining and culture.

RESULTS : Out of the 70 cases of gastric carcinoma, the prevalence of *H. pylori* was 64.28% . The most common age group associated with gastric carcinoma with *H. pylori* infection was more than 60 years. There was male predominance seen for both gastric carcinoma and gastric carcinoma positive for *H. pylori* infection. The most common lesion for gastric carcinoma and those positive for *H. pylori* was ulceroproliferative type. The most common site of stomach involved in cases of Gastric carcinoma associated with *H. pylori* infection was antrum+pylorus of stomach. The most common histological type of gastric carcinoma associated with *H. pylori* infection was poorly differentiated adenocarcinoma

CONCLUSION : On the basis of our study it is evident that *H. pylori* is an independent risk factor for gastric carcinoma. Infection with *H. pylori* causes chronic inflammation and significantly increases the risk of developing duodenal, gastric ulcer disease and gastric carcinoma.

INTRODUCTION:-

Gastric carcinoma is one of the commonest malignancy which accounts for 9.7% of the total deaths among all cancers.¹ It is twice more common in males as compared to females.¹ At present, it is more common in Asian population more in China and India than in the United State of America (USA) or Europe.¹ It is estimated that by the year 2020, approximately 50,000 new Gastric carcinoma cases will be reported annually in India. A study conducted in Karnataka reported gastric carcinoma to be among the five most common cancers even in young Indian men and women (aged 15-44 years)². Due to its variability in incidence with place and generation, it has been considered that environmental factor rather than genetic factors determine the incidence of gastric carcinoma. *H. pylori* has been classified as a Class I carcinogen for Gastric carcinoma in 1994 by the International Agency of Cancer.³ This bacterium is then thought to be one of the causal factors in the development of Gastric carcinoma. It colonizes the stomach of nearly 50%-60% of the world's population⁴. *H. pylori* infection causes chronic inflammatory reaction thereby increasing the risk of duodenal ulcer, gastric ulcer disease and gastric carcinoma. It is one of the strongest known risk factor for development of gastric carcinoma². This study was undertaken to determine the clinical and pathological profile of gastric carcinoma in our institute and to find out the prevalence of *H. pylori* infection in gastric carcinoma patients.

MATERIAL AND METHODS

We conducted our study in Department of Surgery, Dr. B. R. A. M. Hospital, Raipur, C.G. over a period of 18 months. Written informed consent was taken from all the patients. This study was hospital based, cross-sectional observational study.

Inclusion criteria of study was

- All patients diagnosed as gastric carcinoma by gastric biopsy.

Exclusion Criteria

- Patients with gastric carcinoma who had taken complete course of antibiotics for eradication of *H. pylori*

People with debilitating end stage illness unfavouring gastric biopsy were excluded from study The detailed history of all the patients was collected inclusive of the duration of complaints (epigastric pain or burning ,abdominal lump, vomiting, early satiety & post-prandial fullness). For at least more than 3 month, history of intake of antibiotics for eradication of *H. pylori* taken for confirmation of *H. pylori*. Remaining biopsy specimens send for histopathological examination.

After history and clinical examination, patient underwent USG abdomen ,Upper GI Endoscopy . During endoscopy, site of the lesion and macroscopic type of the lesions were identified and recorded. Multiple tissue biopsies (>10) were collected from non-necrosed region of cancer. One piece of each paired specimen were immediately subjected to RapidUrease Test dry kit (RUT) for detection of Helicobacter pylori. Further this biopsy specimen were subjected to modified giemsa staining and culture.

OBSERVATION AND RESULTS

Table .1. Prevalence Of *H. pylori*

H PYLORI	No. OF PATIENTS	%
Present	45	64.29
Absent	25	35.71

Total	70	100
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In our study, 70 cases of gastric carcinoma were taken out of which 45 patients(64.29%) were positive for H pylori infection

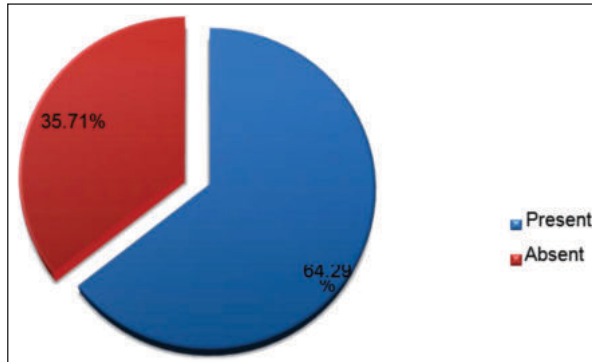


Figure 1:- Showing The Prevalence Of H.pylori In Gastric Carcinoma

Table .2. Symptoms

SYMPTOMS	NO.OF PATIENT	H PYLORI		p value
		Present	Absent	
Dysphagia	23(100%)	17(73.91%)	6(26.09%)	0.24
Anorexia	24(100%)	14(58.33%)	10(41.67%)	0.45
Weight Loss	43(100%)	30(69.77%)	13(30.23%)	0.23
Vomiting	53(100%)	34(64.15%)	19(35.85%)	0.96
Epigastric Pain	63(100%)	39(61.9%)	24(38.09%)	<0.001 HS

It was observed that epigastric pain was the most common symptom followed by vomiting and weight loss in patients with gastric carcinoma. Most of the patients showed H pylori positivity with these symptoms. (Table 2). On examination, 36 patients had palor as well as lump abdomen among which 55.56% patients had H pylori infection. (Table 3)

Table .3.signs

SIGNS	No of patients	H PYLORI		p value
		Present	Absent	
Lump	16(100%)	12(75%)	4(25%)	0.31
Pallor	18(100%)	13(72.22%)	5(27.78%)	0.41
Lump+Pallor	36(100%)	20(55.56%)	16(44.44%)	0.11
p value		0.29 NS		

Table. 4. Type Of Lesion

TYPE OF LESION	NO OF PATIENTS	H PYLORI		p value
		Present	Absent	
Polypoid	8(100%)	4(50%)	4(50%)	0.37
Ulceroproliferative	28(100%)	20(71.43%)	8(28.57%)	0.31
Ulcerative	34(100%)	21(61.76%)	13(38.24%)	0.67
p value		0.39 NS		

Table. 5. Histological Type Oflesion

HISTOLOGICAL TYPE	NO. OF PATIENTS	H PYLORI		p value
		Present	Absent	
Signet cell Adenocarcinoma	3(100%)	2(66.67%)	1(33.33%)	0.92
Mucinous Adenocarcinoma	3(100%)	2(66.67%)	1(33.33%)	0.92
Moderately differentiated Adenocarcinoma	10(100%)	6(60%)	4(40%)	0.76
Well Differentiated Adenocarcinoma	19(100%)	13(68.42%)	6(31.58%)	0.66
Poorly Differentiated Adenocarcinoma	35(100%)	22(62.86%)	13(37.14%)	0.80

In our study, ulcerative lesions (34 patients) were more common in gastric carcinoma patients but ulceroproliferative lesions had higher incidence of H pylori infection(71.43%) as compared to ulcerative lesion group (61.76%).(Table 4). We found that, of 70 cases, the most common histological type in gastric carcinoma was poorly differentiated adenocarcinoma seen in 35 cases (50 %). Also the most common histological type in gastric carcinoma positive for H. pylori infections was poorly differentiated adenocarcinoma seen in 22 case (62%) (Table5).

DISCUSSION
Prevalence

We found that out of 70 cases of gastric carcinoma 45 cases (64.29%) were positive for H. pylori. It is comparable to study by Talukdar et al (1995)⁵, MA Kabir et al (2006)⁶, Mishra et al (2007)⁷, NG. Javan, Wormi Sharon (2016)⁸ in which prevalence of H pylori was more than 60% in gastric carcinoma patients.

Age And GenderWise Distribution

We found that, out of 70 cases, most of the cases of gastric carcinoma (73.08 %) who were positive for H. pylori were seen after the 6th decade of life. It was also observed that males (69.23%)were affected more than females. It is similar to other studies by Lark-Eris Hansson et al (1989-1991, Sweden)⁹, Hajime yamagata et al (1988 japan)¹⁰, MA Kabir et al (2006)⁶, Shelat VG et al (2012)¹¹, Ashish Kumar et al (2013)¹², Chungoo et al (2015)¹³, Yakoob J et al (2017)¹⁴ who had same age of distribution

Symptoms

We found that out of 70 cases, the most common symptom in gastric carcinoma was epigastric pain (63 cases / 90%) followed by vomiting (53 cases / 75.7%) ,also the most common symptom in carcinoma cases positive with H. pylori infections was pain (39 cases / 61.9%) followed by vomiting (34 cases /64.15%). In studies by Ashish Kumar et al. (2013)¹²Chungoo et al. (2015)¹³ the most common symptom was abdominal pain, whereas in studies of Qurieshi et al(2011)¹⁵, MA Kabir et al(2006)⁶ the most common symptom was dyspepsia.

Signs

We noted that the most common sign noted in gastric carcinoma patients positive for H. pylori was lump and pallor (20cases). This is comparable to studies by MA Kabir et al (2006)⁶and Hire Pratik et al. (2017)⁶ where the most common sign was abdominal lump, whereas in study by Chungoo et al. (2015)¹³most common sign was pallor

Site Of Lesion

We found that, out of 70 cases, most common site for gastric carcinoma was antrum and pyloric region seen in 49 cases (70%) . It is similar to studies by MA Kabir et al(2006)⁶, Ashish Kumar et al(2013)¹² where most common site was antrum.

Type Of Lesion

We found that, of the 70 cases, the most common type of lesion in gastric carcinoma was ulcerative followed by ulceroproliferative and the most common type of lesion positive for H. pylori infections in gastric carcinoma was ulceroproliferative lesion seen in 20 cases (71.43%), followed by ulcerative lesion seen in 21cases(61.76%). Ulcerative lesion was most common according to studies conducted by MA Kabir et al(2006)⁶; Ashish Kumar et al(2013)¹².

Histological Type Of Lesion

We found that, of 70 cases, the most common histological type in gastric carcinoma was poorly differentiated adenocarcinoma seen in 35 cases (50 %). Also the most common histological type in gastric carcinoma positive for H. pylori infections was poorly differentiated adenocarcinoma seen in 22 cases (62%). MA Kabir et al (2006)⁶, reported that out of 50 patients , histopathologically 52% was intestinal

type, 28 % was diffuse type 20% was poorly differentiated adenocarcinoma. The prevalence of *H. pylori* in overall carcinoma stomach cases was 60% but individually in intestinal type 88%, in diffuse type 57% and in poorly differentiated type 50%. Similarly **M.kato et al (2004)**¹⁷, in a multicentric study found that *H.pylori* was associated more with both intestinal and diffuse type of gastric carcinoma. **Xia Wang et al (2014)**¹⁸ concluded from their studies that there was significant association of *H.pylori* infection and well differentiated adenocarcinoma.

CONCLUSION

On the basis of our study it is evident that *h.pylori* is the independent risk factor for gastric carcinoma. Infection with *H. pylori* causes chronic inflammatory reactions and therefore increases the risk of developing duodenal ulcer, gastric ulcer disease and Gastric carcinoma. *H. pylori* infection is one of the strongest known risk factors for Gastric carcinoma.

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