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Frequency of Precancerous Lesions in Stomach of Patients

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This descriptive study was done duo to determine of frequencies of precancerous lesions and its significance in gastric cancer prophylaxis and no accessible data about their in this region. From 177 patients with gastrointestinal symptoms that were selected for endoscopy, biopsies were taken from fundus, antrum, lesser curvature. 24.9% of patients had precancerous lesion that 20.9% were Intestinal metaplasia (IM) and 4% of them were dysplasia. Fifty four percent of IM was in antrum, 27.1% in fundus and 18.9% in lesser curvature. In patients with precancerous lesions the most clinical symptom was abdominal pain (29.5%) and the least common was melena (9.1%) and 52.8% of them had *Helicobacter pylori* (HP) infection. 39.4% of patients were female and 63.3% were male. The most common precancerous lesions were observed in the fourth decade life (29.5%) Therefore considering to high frequency of precancerous lesions in this study and its significance in gastric cancer prophylaxis, serial endoscopic studies are recommended.

Key words: Intestinal metaplasia, dysplasia, precancerous lesions

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INTRODUCTION

Gastric cancer remain the second most common cause of cancer deaths world wise. Despite decreasing incidence and mortality rates during the last 10 years, 800000 people in the world are estimated to be diagnosed with this cancer every year (Conchillo *et al*., 2001; Mutoh *et al*., 2003; Ikukokato *et al*., 2004).

Histopathologic studies of the gastric mucosa in high risk population have revealed a series of lesions, which apparently represent a continuum of changes from normal to carcinoma the complete taking at least two decades. This includes, in order of increasing severity Superficial Gastritis (SG), Chronic Gastritis (CG), Chronic Atrophic Gastritis (CAG), Intestinal Metaplasia (IM) and dysplasia. Helicobacter pylori has been shown to induce acute gastritis, which can progragram to CG and IM (Ikukokato *et al*., 2004). Carcinoma is frequently accompained by widespread IM that is mainly induced by HP infection and intestinal type gastric cacinoma is believed to arise via dysplasia from IM (Mutoh *et al*., 2003). The 5 years survival rate of gastric cancer is very low, because at time of diagnosis is mostly at an advanced stage. Early detection of gastric cancer has led to better survival rate, therefore the identification and control of group at risk and precancerous of malignancy could further improve the prognosis of gastric cancer (Conchillo *et al*., 2001).

There are different reports about the frequency of IM in the studies, there was a high prevalence of total IM in two type of Gastirc cancer (75.7-88.9%) in study of JM Conchillo *et al*. (2001) in the serial endoscopic studies of patients. In the study of Thomas *et al*. (1997) was 38% and in the study of Satarkar (1997) was 16.6% and in the study of Eurensel and Ozardimic (1996) was 48%.

The present study carried out duo to determine the frequencies of precancerous lesions in different places of stomach and also in order to do suitable surgical operation in precancerous lesions especially dysplasia was observed by serial endoscopic studies on patients with precancerous lesions to prevent the risk of gastric cancer.

MATERIALS AND METHODS

A descriptive study was done on patients referred to endoscopy department of Kashan Shahid Beheshti Hospital in year 2001-2003.

Duo to various clinical symptoms including abdominal pain, dysphagia and nausea esophagogastroduodenoscopy was required for these patients. The patients with esophageal and gastric cancer or ulcer were omitted in this study. Data about patients including age, sex and clinical symptoms was recorded in data form. During endoscopic studies, two or three biopsy samples were taken from each of three parts of stomach: Fundus, antrum and lesser curvature. The samples were fixed in formalin 10% and slices were prepared from them through the standard methods and H and E staining was used to diagnose the type of lesions. The presence of HP infection was confirmed by Giemsa staining. All of the findings of endoscopy and histology were recorded in data form and finally the data in the form was classified and the results were reported through descriptive statistics.

RESULTS

From total of 177 patients 99 cases (55.9%) were female and 78 cases (44.1%) were male, the range of age was 28-81 years. Forty four cases (24.9%) has precancerous lesion that IM with 37 cases (20.9%) was higher than dysplasia with 7 cases (4%). In different parts of stomach the most site for IM was antrum (54%) and then fundus (27%) and lesser curvature (19%) (Fig. 1).

The most clinical symptom in total patients was abdominal pain (79.5%) and then belch (61.4%) Flactulence (52.3%), Hiccup and constipation equally (38.6%), weight less (29.5%), anorexia, nausea and melena equally (18.2%), vomiting (13.6%) and the minimum symptom was hematochesia (11.4%). Each of patients had at least one symptom (Table 1).

Table 1: The frequency of distribution of clinical symptoms and precancerous lesions in Patients

	Precancerous lesions		
Symptoms	Positive	Negative	Total
Flactulence	23 (52.3)*	86 (64.7)	109 (61.6)
Abdominal pain	35 (79.5)	108 (81.2)	143 (80.8)
Anorexia	8 (18.2)	66 (49.6)	74 (61.8)
Constipation	17 (38.6)	36 (27.1)	53 (29.9)
Weight loss	13 (29.5)	48 (36.1)	61 (34.5)
Belch	27 (61.4)	72 (54.1)	99 (55.9)
Hiccup	17 (38.6)	36 (27.1)	53 (29.9)
Vomiting	6 (13.6)	14 (10.5)	20 (11.3)
Hematochesia	5 (11.4)	10 (7.5)	15 (80.5)
Nausea	8 (18.2)	14 (10.5)	22 (12.4)
Melena	8 (18.2)	50 (37.6)	58 (32.8)
Total of patients	44 (24.9)	133 (75.7)	177

* Value in parenthesis represent percentage

Table 2: The frequency distribution of *Helicobacter pylori* infection and precancerous lesions in patients

	Helicobacter pylori		
Precancerous lesions	Positive	Negative	Total
Positive	23 (52.3)	21 (47.7)	44 (24.9)
Negative	42 (31.6)	91 (68.4)	133 (75.1)
Total	65 (36.8)	112 (63.2)	177 (100)

*Value in parenthesis represent percentage

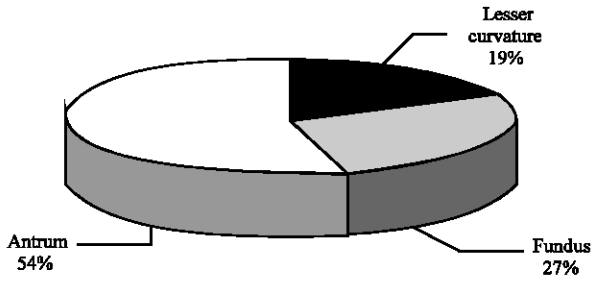

Fig. 1: The frequency of intestinal metaplasia distributions in different parts of stomach patients

Frequency of IM in male was higher (62%) than in females (37.8%) so meaningful statistical difference were observed between men and female ($p<0.0105$).

The frequency of HP infection in patients with preanceraus lesions was higher than patients without them (Table 2).

Table 2 indicates a meaningful relationship between precancerous lesions and the presence of *Helicobacter pylori* ($p<0.02$).

DISCUSSION

This study showed that 24.9% of patients has precancerous lesion (20.9% IM and 4% dysplasia). In similar studies, there are different frequencies of precancerous lesions. In the study in China (You, 1998). The frequency of IM was 30% and dysplasia 15%. In the study in Egypt (Abdel Wahab, 1998) IM was 25.6% and dysplasia was 20.9%. In the study in Taiwan (Wang, 1998) 27.8% patients had IM in biopsy of their antrocorpus. The frequency of IM 16.6% was reported in India (Starkar *et al*., 1997) and in Turkey 48% (Eurensel, 1996) and in Swedish IM was reported 32.2% in patients with chronic gastritis and 56.2% of Japanese patients and 13.4% Mexican patients had IM (Rubio and Jessuruny, 1992) and in the study of Thomas *et al*. (1997) was 38%. The highest rate of IM was seen in Japan where gastric cancer is common.

This different of frequency probably is related to multiple factors including diet, exogenous chemicals, intragastric synthesis of carcinogens, genetic factors and infection agents, cigarette smoking, alcohol drinking in patient as they are effective factors on gastric cancer (Wei, 1998; Tadataka *et al*., 2003; Ikukokata, 2004).

In present study precancerous lesions were almost two times more frequent in males than in women ($p = 0.0105$) and there is an increase in the frequency of these lesions in older patients. In a study in Japan (Ohkumak and Morayama, 2002) IM are more common in male and older patients and in one study shows the prevalence rates varied by age with an upward trend for IM and dysplasia (Wei *et al*., 1998) as gastric cancer especially intestinal type of cancer also in more often in male and the mean age is significantly higher (Conchillo *et al*., 2001). These findings indicate the correspondence of this results, But in the study in Venezuela (Munoz *et al*., 1998) no differences were reported between male and females. So we should be more doubtful and careful in male with gastrointestinal symptoms.

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In this study in Venezuela (Monoz *et al*., 1996) and in German (Edit and Stolten, 1998) the most common place of precancerous lesions was reported in antrum which corresponds with this study. In the study of Conchillo *et al*. (2001) they found a high prevalence of IM in antrum and corpus specimen. In the study of Thomas *et al*. (1997) the most common place of mataplasia was in cardia because they prepared biopsy from cardia instead of fundus.

In this study 52.3% of patients with precancerous lesions had HP infection. In the study of Eurensel and Ozyardimic (1996) 44.8% of patients with IM were positive for HP. In the study in Great Britain on 179 patients was a clear relationship between IM and HP. (Shoushan *et al*., 1993). In the study in a Chinese population, the prevalence of HP was 80% in IM and 100% for dysplasia (Wei *et al*., 1998).

The finding of these study suggest that infection with HP is a risk factor in the development and progression of advanced precancerous lesions (Wei *et al*., 1998). In a large follow up study among patients with IM Rokkas *et al*. (1992) concluded that early gastric cancer can be diagnosed with increasing frequency in time if patient with IM followed endoscopically (Conchillo, 2001). Although the ridding of the patients is troublesome and expensive, finding the precancerous lesions including IM and dysplasia by more serial endoscopic studies is very important because if dysplastic lesion are observed suitable saving attempts can be done to prevent gastric cancer.

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