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A RETROSPECTIVE STUDY OF GASTRIC CANCERS IN TEHRAN

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ABSTRACT

Background: Gastric cancer is one of the most common cancers in our country. Recent studies have shown that adenocarcinoma of the cardia and distal stomach has increased in the past 25 years. However demographic data is lacking in this regard.

Methods: This study is a retrospective case series study. All records from 460 consecutive patients who were documented pathologically to have gastric cancer and had been referred for diagnosis and follow-up to a private clinic from 1992 to 2002 in Tehran were evaluated.

Results: 71 records were dismissed due to incomprehensive data. Among 389 remaining records 68.5% were males; mean age was 59.4 years (range 13 to 92 years), 31.1% of patients were 40 years old or less (which is very high). Also 85% (331) of patients had adenocarcinoma and 5.9% (23) had lymphoma, 8.1% (31) had undifferentiated carcinoma while only 1% (4) of cases had gastrointestinal stromal tumor (GIST). 64% of tumors were located in the middle part of the stomach, 19% in the lower and 17% in the upper part. In our study the association between *H. pylori* and adenocarcinoma was 23.2% in cases younger than 40 years *(P<0.001)* and 56% in cases older than 40 years. Cases with lymphoma had the highest correlation with *H. pylori*. There was a significant difference between cancer pathology and sex *(P< 0.001)*.

Conclusion: Our data is somehow in conflict with the western data. We do not recommend blind *H. pylori* eradication based on positive serology (at least in Tehran) and we suggest conduction of larger multicenter studies in this field in our country.

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INTRODUCTION

Gastric cancer is the second most common cancer in the gastrointestinal tract throughout the world.[1-4] Epidemiological studies have shown that men and the elderly are at higher risk of developing cancer. Its incidence varies worldwide with some parts of the world being among the most affected ones.[2, 5, 6] In Japan and South America its incidence is reported between 10 and 70 per 100000 per year. Adenocarcinoma is the most common gastric cancer comprising more than 90% of stomach malignancies.[5, 6, 7] In the West, the subsite incidence of gastric cancer has changed in recent decades, with adenocarcinoma of the cardia and adjacent gastroesophageal junction increasing in the past 25 years at a rate exceeding the incidence of the more distal stomach parts.[5, 8] There is a relationship between *H. pylori* infection and development of gastritis and gastric cancer, noted in the literature.[2, 9-15] Gastric cancer still remains the most common cancer in Iran.[11] The highest incidence has been reported from Ardabil province with incidence rates of 49.1 and 25.4 per 100000 in men and women, respectively, which is one of the highest reported incidences throughout the world [5, 12, 16, 17, 18]. Generally, the Northwest part of Iran has a very high incidence of upper

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Table I. Distribution of two different pathologies of gastric cancer in both sexes.

Tumor histology / Gender	Adenocarcinoma		Non-adenocarcinoma		Sum	
	N	%	N	%	N	%
Male	231	86.8	35	13.2	266	100
Female	100	81.3	23	18.7	123	100
Total	331	85.1	58	14.9	389	100

gastrointestinal cancers [27, 29, 32]. Epidemiologic studies of cancer, even in only one private referral center, are of paramount importance and may help to design more extensive studies and strategic planning[11, 13, 16, 19,] which should be analyzed and published. This study has been designed to evaluate the available demographic data about patients with gastric cancer who have been followed up in a private clinic.

MATERIAL AND METHODS

This study is a retrospective case series study in a private clinic. The records of patients who had a documented pathology of gastric cancer were evaluated for this study.

We made a survey upon pathologic results of a private pathological lab and picked out all pathologically documented gastric cancer records during a 10 year period (from 1990 to 2002). Cases of gastric cancer presenting for the first time during the ten year period were identified from private clinic pathology lab data bases; all demographic and endoscopic data from each patient were gathered and analyzed meticulously. *H. pylori* infection was confirmed by UBT and serology (IgG) or with biopsies during endoscopy. All data were analyzed by SPSS for windows version 13 and simple descriptive methods and chi square were used.

RESULTS

General information

During this ten year study (1992-2002), 460 patient records with a pathologically confirmed diagnosis of gastric cancer were included but 71 of them were subsequently excluded due to lack of comprehensive data in their files and finally 389 patients were analyzed. Mean age of all patients was 59.4 yr. ranging from 13 to 92 years old. Among 389 remaining records 68.5% were males and male to female ratio was 2.9:1.There was a significant difference between the two sexes *(P<0.001)*, (Table I).

Histopathology of tumor

A total of 331 patients out of 389 (85%) had adenocarcinoma, 23 patients (5.9%) had lymphoma, 31 undifferentiated carcinoma (8.1%) and there were also 4 patients with gastrointestinal stromal tumor [GIST (1%) (Table II)].

Tumor sub site distribution

Of the 389 gastric cancers 68 (17%) were located in proximal parts (cardia, fundus and distal esophagus). Most of our records showed a mid-stomach location (248 records, 64%) and there were 73 tumors (19%) located in the lower stomach (antrum and prepyloric) (Table III).

Helicobacter pylori association

In our study the association of *H.pylori* and adenocarcinoma was 23.2% in cases younger than 40 years and 56% in older than 40 years that was statistically significant *(P< 0.001)* (Table IV). All of the cases with lymphoma (N=23, 100%) had *H. pylori* infection.

DISCUSSION

Cancer of the stomach is one of the most commonly diagnosed malignancies and remains an important cause of mortality worldwide. This type of cancer is not uniformly distributed among populations but shows a marked variation in both incidence and mortality.

The incidence of gastric cancer varies widely by country and population, with higher rates among the lower socioeconomic groups. The epidemiology of gastric cancer is remarkable for both its dramatic decline in incidence over the past century and its continuing presence as the second leading cause of cancer deaths worldwide despite this decline.

Reviews demonstrate that gastric cancer remains one of the major health burdens in the world today but that this cancer is not uniformly distributed throughout the world. There are geographical variations both among and within countries. So a new look at the results of epidemiological and experimental studies of other countries is important for the establishment of strategies for control. This article describes our knowledge about cancer of the stomach regarding epidemiology and pathogenesis.

There was a high rate of gastric cancer prevalence in the less than 40 year age group in this study. Worldwide studies have shown that gastric cancer rarely occurs below 40 years of age and the peak incidence is above 55 years of age;[1] but in accordance with the results of previous

Table II. Histology of tumor in 389 patients.

Tumor histology	Number	Percent
Adenocarcinoma	331	85
Undifferentiated carcinoma	31	8.1
Lymphoma	23	5.9
Gastrointestinal stromal tumor (GIST)	4	1
Total	389	100

Table III. Location of tumor in the stomach.

	Number	Percent
Upper	68	17
Middle	248	64
Lower	73	19
Total	389	100

Table IV. Distribution of *H. pylori* status in two different age groups.

HP-Status Age groups (year)	HP-Positive		HP- Negative		Sum	
	N	%	N	%	N	%
40>	23	23.2	76	76.8	99	100
>40	130	56	102	44	232	100
Sum	153	46.2	178	53.8	331	100

studies in Iran,[2, 5, 20, 21, 22] we believe that early endoscopy in patients below the age of 40 who present with dyspeptic symptoms will help us to detect more gastric cancer cases in earlier stages.

The international decline in gastric cancer is mainly attributed to improved socio-economic conditions. Its incidence has been gradually decreasing in the world over the past 50 years, yet is rapidly rising in some Asian countries. In our study 17% of gastric cancers had developed in the upper part of the stomach. Among our young patients (<40 years) only 23.2% were *H. pylori* positive. This is in accordance with recent comments in the literature that since the advent of diagnostic techniques such as endoscopy, location of arising gastric tumors has shifted to the upper part of the stomach. Notably, we had mentioned this evolution in a study dated about ten years ago and also in a more recent study.[23, 24] The rate of gastric cancer originally located in the upper part of the stomach in our study is well beyond the international rate. This is in conflict with many worldwide studies and needs further evaluation.

In summary it seems better to investigate patients under 35 years of age with new onset dyspepsia endoscopically than to perform a treatment trial (the accepted age criterion for this purpose is 40 years). Also we do not recommend blind *H. pylori* eradication according to a positive serology in Tehran. Considering all these data, further research is necessary.

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