Evaluation of the Prevalence of Clinicopathological and Demographic Factors in Gastric Cancer: A Report from Iran

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Original Research Article

Abstract: Gastric malignancy is a common disease in the world, typically associated with acquired chronic inflammation in the stomach and is one of the most common cancers in the world. This study aimed to assess the clinicopathological and demographic factors in gastric cancer patients in Kermanshah, Iran. In a cross-sectional study in 2017, the information of forty-two gastric cancer patients referred to the hospital was collected based on medical records of each patient. The mean age at diagnosis was 57.21 years that 83.3% were men. Adenocarcinoma was the most common type of tumor pathology (97.6%) that diffuse subtype was the most common subtype of adenocarcinoma (73.2%). Out of 35 patients, grade 3 had the most percentage (57.1%) and out of 36 patients, 30.5% had neo adjuvant chemotherapy. Out of 38 patients, 5.3%, 36.8%, 21.1%, and 23.7% had anorexia, epigastric pain, dysphagia, and weight loss, respectively. The Smoking and the consumption of antacid drugs could be as significant risk factors in gastric patients that it needs to more researches in the future.

Keywords: Gastric cancer, Prevalence, Demographic factors, Clinicopathological factors

INTRODUCTION

Gastric cancer is one of the most common cancers in the world [1]. Globally the incidence has been decreased dramatically in recent decades but it is the most common malignancy in The North and Northwest of Iran [2]. In Iran (in 2009) of 74067 new cases of cancer, 6886 were diagnosed as having gastric cancer [3].

Gastric malignancy is a common disease in the world, typically associated with acquired chronic inflammation in the stomach, related in most instances to infection by *Helicobacter pylori* (H.pylori) [4]. Among all cancer types, gastric cancer is one of the leading causes of death in recent decades, which deaths from this malignancy has been steadily increasing in Asia and across the globe [5]. Effects of several factors on the survival of these patients were studied that age, stage, and metastasis have been highlighted [6-9]. For improving the diagnosis of gastro-intestinal malignancy, age is considered an important factor [10].

The aim of this study was assessment of clinicopathological and demographic factors in gastric cancer patients in Kermanshah, Iran.

MATERIALS AND METHODS

This study was approved by the Ethics Committee of Kermanshah University of Medical Sciences, Kermanshah, Iran (Project code: 3003078). In a cross-sectional study in 2017, the information of 42 gastric cancer patients referred to Emam Reza Hospital was collected based on medical records of each patient. The patient with both pathology report and clinical report was selected for the study. Patients with a malfunction in the file, their information were collecting by call with patient or one of family members of the patient. Age, sex, type of tumor pathology, metastasis, lymph node involvement, smoking, antacid drug use, stage, grade, anatomical site of tumor, chemotherapy, history of cancer in family, surgery, and

mortality were relevant data for each patient that were collected.

RESULTS

The mean age (± SD) at diagnosis was 57.21 years (± 17.18) that 83.3% were males (Table **1**). Out of 42 patients, 19%, 45.3% and 35.7% had age<40, 40-60, and >60 years, respectively. Adenocarcinoma was the most common type of tumor pathology (97.6%) that diffuse subtype was the most common subtype of adenocarcinoma (73.2%). Twenty-eight patients (66.7%) samples were received from biopsy. The

prevalence of anatomical site of tumor and lymph node involvement has been shown in Table 1. Out of 35 patients, grade 3 had the most percentage (57.1%), followed by grade 2 (37.1%) and grade 1 (5.7%). Out of 36 patients, 30.5% had neo adjuvant chemotherapy. Out of 33 patients, 63.66% had a history of antacid drug, and 60.6% had surgery during treatment. Fifteen patients (57.7%) were smoker from 26 patients. Stage 3 had the most prevalence in the patients (45.8%) among 35 patients, 11/35 (31.4%) had metastasis, 3/31 (9.7%) had a history of familial cancer, and in 5-year 9/38 patients (23.7%) died.

Table-1: Demographic and pathologic variables in gastric patients (n=42)

Variables	N (%)	Variables	N (%)
Age: mean, Year ± SD	57.21 ± 17.18	**History of antacid drug**	
Age category, years		Yes	21 (63.6)
<40	8 (19)	No	12 (36.4)
40-60	19 (45.3)	NA	9
>60	15 (35.7)	**Surgery during treatment**	
Sex		Yes	20 (60.6)
Male	35 (83.3)	No	13 (39.4)
Female	7 (16.7)	NA	9
Type of tumor pathology		**Smoking**	
Adenocarcinoma	41 (97.6)	Yes	15 (57.7)
Lymphoma	1 (2.4)	No	11 (42.3)
Type of sample		NA	16
Biopsy	28 (66.7)	**Subtype of adenocarcinoma**	
Gastrectomy	14 (33.3)	Diffuse	30 (73.2)
Anatomical site of tumor		Intestinal	11 (26.8)
Cardia	9 (30)	**TNM Stage**	
Fundus	2 (6.7)	2	8 (22.8)
Body	3 (10)	3	16 (45.8)
Pylorus	5 (16.7)	4	11 (31.4)
Antrum	8 (26.6)	NA	7
Lesser curvature	3 (10)	**Metastasis**	
NA	12	Yes	11 (31.4)
Differentiation (grade)		No	24 (68.6)
Well (1)	2 (5.7)	NA	7
Moderate (2)	13 (37.1)	**History of familial cancer**	
Poorly (3)	20 (57.1)	Yes	3 (9.7)
NA	7	No	28 (90.3)
Lymph node involvement		NA	11
N1	12 (37.5)	**Five-year mortality**	
N2	16 (50)	Live	9 (23.7)
N3	4 (12.5)	Dead	29 (76.3)
NA	10	NA	4
Neo adjuvant chemotherapy			
Yes	11 (30.5)		
No	25 (69.5)		
NA	6		

Abbreviation: NA, not available

A number of clinical manifestations have been shown in gastric patients (**Table 2**). Out of 38 patients, 5.3%, 36.8%, 21.1%, and 23.7% had anorexia, epigastric pain, dysphagia, and weight loss, respectively. Twenty patients (52.6%) had nausea, vomiting, and/or dyspepsia.

Table-2: Clinical manifestations in gastric patients (n=42)

Clinical Manifestation	N (%)
Anorexia	
Yes	2 (5.3)
No	36 (94.7)
NA	4
Epigastric pain	
Yes	14 (36.8)
No	24 (63.2)
NA	4
Nausea, vomiting, and/or dyspepsia	
Yes	20 (52.6)
No	18 (47.4)
NA	4
Dysphagia	
Yes	8 (21.1)
No	30 (78.9)
NA	4
Weight loss	
Yes	9 (23.7)
No	29 (76.3)
NA	4

Abbreviation: NA, not available

DISCUSSION

A meta-analysis in 2016 in Iran reported that more than half of gastric cancer deaths happened in the first year at diagnosis, and another 30% plus they occurred during the second year after confirmed diagnosis [11]. This study reported clinicopathological and demographic factors in gastric patients in Western Iran that the mean age at diagnosis was 57.21 years and 83.3% were men. 35.7% patients had age>60 years. One study in Tehran reported that in gastric patients the male to female ratio was 2.8:1 and the peak incidence was in the age group more than 60 years old, approximately 12% of patients were younger than 50 years old, adenocarcinoma was the commonest histological type [12]. The mean age of gastric patients in six other studies in Iran was 59.3 years in Yazd [13], 63 in Ardabil [14], 64.7 in Kurdistan [15], 68.8 in Ilam [16], 58.1 in Shiraz [17], and 67 in Tehran [18].

Sjoquist *et al.* [13] indicated that at diagnosis, 23% of gastric cancer cases were localized, 32% were detected in the lymph nodes, and 34% were metastatic. Veisani et al. [16] found that the majority of gastric patients in their study were male and older than 65 years for gastric cancer that in a research in Tehran, 68.3% of these patients were male [18]. In an investigation on gastric patients has been shown that 44.9% of patients cardia was involved and in 19.7% of patients anterior part was involved, adenocarcinoma in 88.4% of patients, 57.8% had metastatic disease that among metastatic patients 68.3% had only lymph nodes metastasis, 38.8% stage 3 followed by stage 2 (25.7%), stage 4 (18.3%) [18]. Cardia had the most common anatomical site of tumor (30% patients) in the present

study; adenocarcinoma in 97.6% that diffuse was predominant subtype, stage 3 (45.8) as the most common stage, and 31.4% were metastatic.

Current investigations indicated that a high prevalence of H.pylori infection, high dietary intake of salt and smoking are the main environmental factors of gastric cancer in Iran [2]. Mehrabani *et al.* [17] in Shiraz on 574 gastric patients concluded that the majority of gastric cancer patients were older than 50 years, 25.4% patients had a history of in their first relatives and most of them were smokers (50.9%). The present study, 57.7% patients were smoker and just 9.7% had a history of cancer in their family.

One study on 277 gastric cardiac adenocarcinoma patients showed that regular use of prescription acid suppressive drugs was not associated with risk for any of gastric cancer [19], but a meta-analysis reported that acid suppressive drugs are associated with an increased risk of gastric cancer [20]. In present study, 63.3% gastric patients had a history of consumption of antacid drugs.

The symptoms of gastric cancer are often nonspecific, culminating in diagnosis at an advanced stage [10]. The most common symptoms of gastric cancer at diagnosis are abdominal pain (50% to 65%) and weight loss (40%). Although anemia is common among patients with gastric cancer, overt upper gastrointestinal bleeding is less common and occurs in 16% to 17% of patients [10]. In the present study, nausea, vomiting, and/or dyspepsia; epigastric pain,

weight loss, and dysphagia had the most prevalence with 52.6%, 36.8%, 23.7%, 21.1%, respectively.

CONCLUSIONS

The mean age of gastric cancer in Iran was more than 55 to 65 years with a predominant male sex. The mortality was high in gastric patients that one reason could be the variability in clinical manifestations in the patients. Smoking and the consumption of antacid drugs could be as significant risk factors in gastric patients that it needs to more researches in the future.

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