Indian Journal of Surgical Oncology (September 2020) 11(3):344–347
https://doi.org/10.1007/s13193-020-01133-3

ORIGINAL ARTICLE

Demographic Profile of Gastric Cancer in Afghanistan

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Received: 21 June 2019 / Accepted: 8 June 2020 / Published online: 25 June 2020

Abstract

Gastric cancer is the second commonest cause of death among all cancers and the fifth most common cancer in the world. The number of deaths due to gastric cancer is about 723,000 annually. It is more common in men compared to women. The incidence of gastric cancer has 20-fold variation worldwide. In Asia, it is the third most prevalent cancer after breast and colorectal cancers. The prevalence of gastric cancer in Middle East varies from very high in Iran to low in Israel and very low in Egypt. The purpose of this study was to assess the demographic profile of gastric cancer in Afghanistan. A retrospective analysis of patient's records at the Oncology Department of Jamhoriat Hospital in Kabul, Afghanistan was conducted in a 1 year period. Data of patients diagnosed with gastric cancer was obtained from the registers of the oncology department from March 2018 to February 2019. Variables of interest included age, gender, ethnicity, and place of residence of the patients. Totally, 1324 cancer patients attended to the oncology department in 1 year; of these, 174 patients were diagnosed with gastric cancer. There were significantly more gastric cancer patients among males (69.5%) relative to females. With regard to ethnicity, the Tajeks contributed majority of the cases presenting with gastric cancer. The majority of the patients presenting with gastric cancer were from Kabul province. There were more cases of gastric cancer were in northern provinces. Majority of the cases were contributed by patients above 50 years of age and male gender. This retrospective study aims to provide information about prevalence and demographic characteristics of patient with gastric cancer in Afghanistan. However, there is lack of literature regarding gastric cancer in this war-torn country.

Keywords Demographic · Gastric cancer · Afghanistan · Jamhoriat Hospital

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Introduction

Gastric carcinoma (GC) is one of the commonest gastrointestinal malignancies worldwide and the second most common cause of death among all cancers [7]. According to the World Health Organization, there were 952,000 (6.8% of the total) new cases of gastric cancer in 2012, making it the fifth most common malignancy in the world [4]. Annually, 723,000 patients die of gastric cancer [5]. Gastric cancer also causes one of the highest cancer burdens, as measured by disability-adjusted life years lost [14]. A total of 1,665,540 new cancer cases and 585,720 cancer deaths are projected to occur in the USA in 2014 [13]. Comparing nations, the highest incidence rates are observed in East Asia, East Europe, and South America, whereas the lowest rates are observed in North America and most parts of Africa (7). For example, the annual age-standardized gastric cancer incidence rates per 100,000 in men are 65.9 in Korea versus 3.3 in Egypt [8]. Rates also vary across races. For example, in the USA, rates are higher in Latinos (13.9 per 100,000 in men and 8.2 per 100,000 in women) than in non-Hispanic White populations [8, 13].

Table 1 Distribution of gastric cancer according to background characteristics of the participants ($n = 174$)

Characteristic	Attribute	*n* (%)
Gender	Male	121 (69.5)
	Female	53 (30.5)
Ethnicity	Arab	2 (1.1)
	Hazara	24 (13.8)
	Pashtoon	46 (26.4)
	Qezibash	1(0.5)
	Tajek	88 (50.6)
	Turkman	1 (0.5)
	Uzbek	11 (6.3)
	Unknown	1 (0.5)

n frequency, % percentage

Gastric cancer incidence rates vary by up to 10-fold throughout the world. Nearly two-thirds of stomach cancers occur in developing countries. Japan and Korea have the highest gastric cancer rates in the world. High-incidence areas for non-cardia gastric adenocarcinoma include East Asia, Eastern Europe, Central and South America. Low incidence rates are found in South Asia, North and East Africa, North America, Australia, and New Zealand [1]. In Asia, it is the third most prevalent cancer after breast and colorectal cancers. The incidence and mortality rates of GC are also highest in both males and females in Asia compared to other continents [11]. Eastern Asia, including Japan, Korea, and China, is a geographical region with one of the highest incidence rates of gastric cancer, accounting for ~ 2/3 gastric cancer cases worldwide [7]. The GC rate in middle east differs from very high in Iran ($26.1/10^5$) to low in Israel ($12.5/10^5$) and very low in Egypt ($3.4/10^5$) [6]. GC is biologically and genetically heterogeneous with a poorly understood carcinogenesis at the molecular level [9]. However, the patterns GC vary substantially across geographical regions, reflecting a heterogeneous distribution of the factors associated with GC incidence, survival and mortality, with time, over birth cohorts, and across countries [2]. The incidence rate of gastric cancer rises progressively with age [2]. Compared with females, males have a

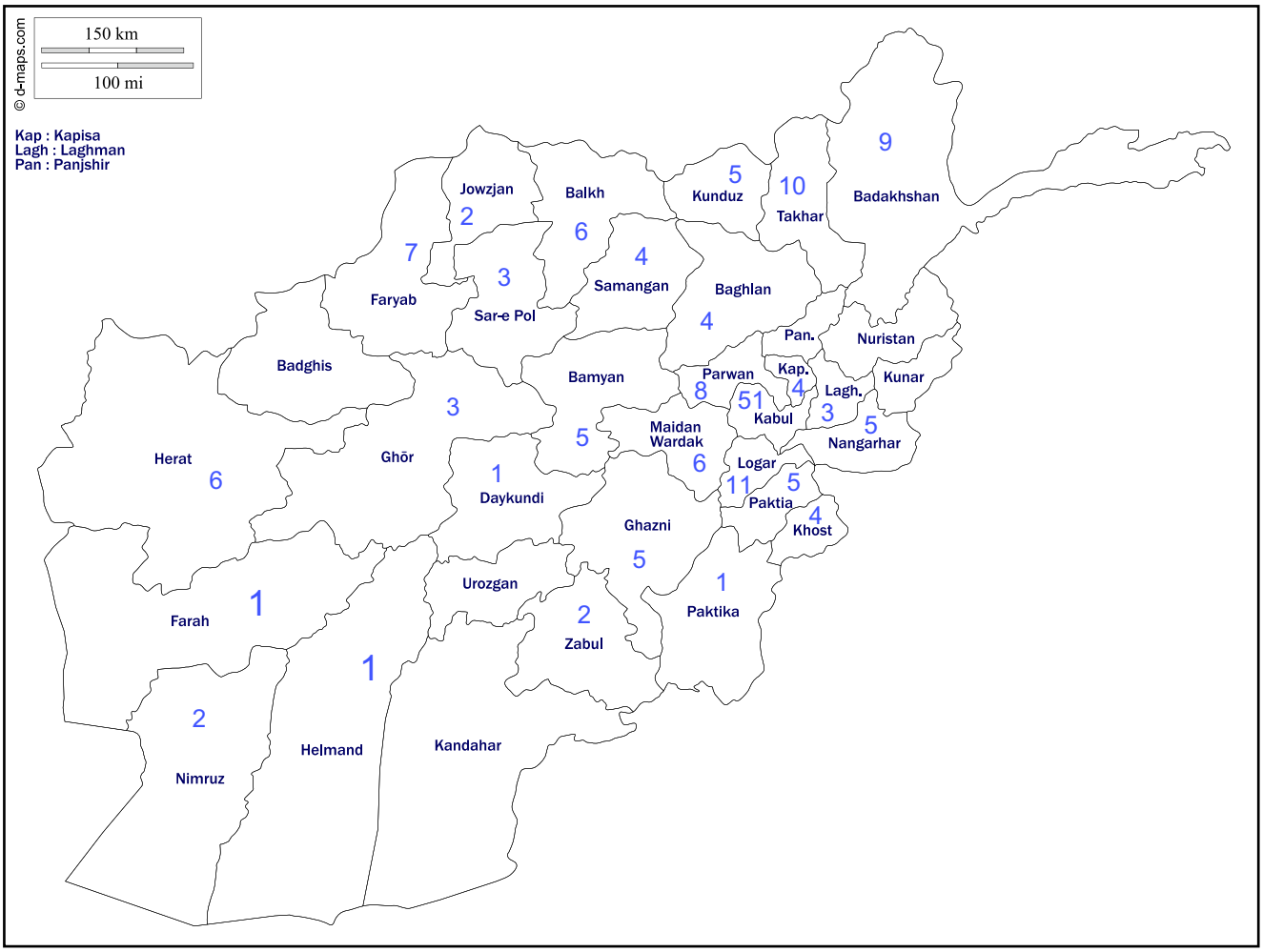

Fig. 1 Distribution of gastric cancer according to province of residence ($N = 174$)

higher risk of both cardia (5-fold) and non-cardia gastric cancer (2-fold) [3]. Alternatively, sex differences may reflect physiologic differences. Estrogens may protect against the development of gastric cancer. In women, delayed menopause and increased fertility may lower the risk of gastric cancer, whereas anti-estrogen drugs, for example tamoxifen, may increase the rates of gastric cancer [12]. However, there is lack of literature regarding gastric cancer in context of Afghanistan. Therefore, this analysis aimed to assess the 1-year prevalence and demographic characteristics of gastric cancer in Afghanistan from March 2018 to March 2019.

Methods

Design A retrospective analysis of patient's records at Oncology Department of Jamhoriat Hospital at Kabul was conducted in 1 year period. This center is the sole provider of cancer diagnosis and management in Afghanistan. Data on patients with gastric cancer was the main interest of the researchers. Retrospective data on the characteristics of patients diagnosed with gastric cancer was obtained from the registers of oncology department from March 2018 to February 2019. Variables of interest included age, gender, ethnicity, and place of residence of the patients.

Permission to access medical records of the patients was obtained from the hospital administration.

The data was analyzed using Microsoft Excel version 2016. Descriptive statistics were performed using frequencies and percentages. Findings were then presented in form of graphs and frequency tables.

Results

Totally, 1324 cancer patients were admitted to the center from March 2018 to February 2019, and of these, 174 patients had gastric cancer. This represents 13.1% of all cancer patients who presented at the unit (Table 1). There were significantly more gastric cancer patients among males (69.5%) relative to females. With regard to ethnicity, the Tajeks contributed majority of the cases presenting with gastric cancer. These contributed half (50.6%) of the cases, followed by Pashtoon (26.4%) and Hazara (13.8%). The least prevalence of gastric cancer was revealed among Qezibash (0.5%) and the Turkman (0.5%) (Table 1).

Figure 1 shows the distribution of gastric cancer according to province of residence. It shows that during the period of this study, majority of the patients presenting with gastric cancer were from Kabul province followed by those from Logar. There were significantly more cases of gastric cancer in northern provinces compared to the southern provinces.

Figure 2 shows the distribution of gastric cancer by age among the participants. Majority of the cases were patients above 50 years of age; specifically, patients in the age brackets 60–64 contributed most cases followed by those aged between 50 and 54 years of age. Noteworthy, the number of cases increased gradually with increasing age reaching a peak prevalence at 60 to 64 years; thereafter, cases dropped significantly from the age of 80 years onwards.

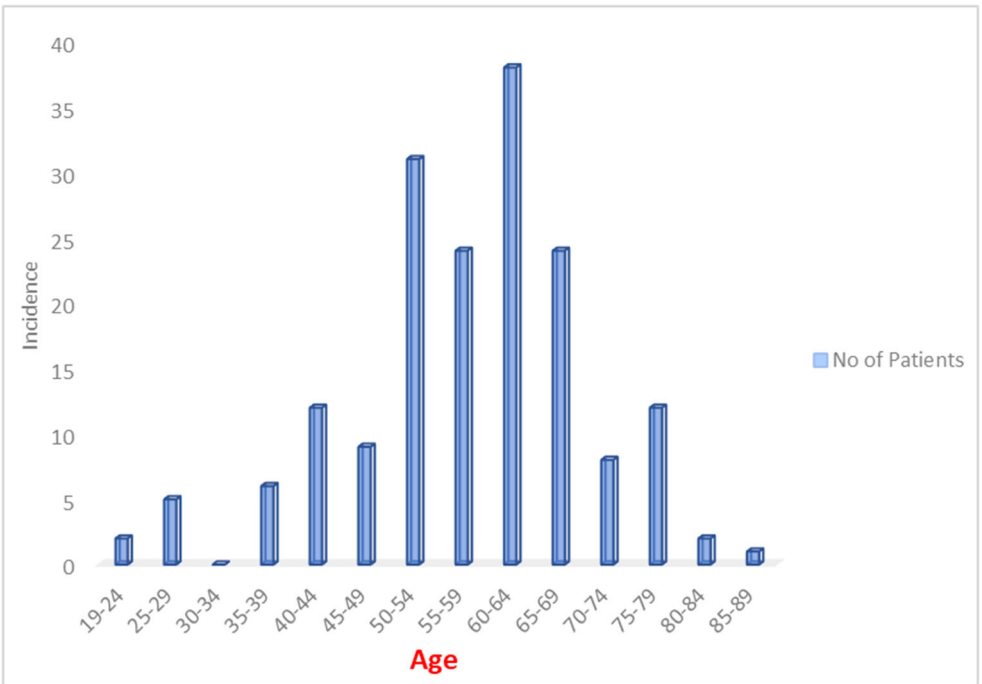

Fig. 2 Distribution of gastric cancer according to age categories ($n = 174$)

Discussion

This study was conducted to assess the demographic profile of gastric cancer in Afghanistan. Evidence from this analysis is very helpful to decision makers at different levels. It helps policy makers to plan for rational distribution of health care resources by identifying vulnerable population at risk of cancer in Afghanistan. Challenges that the health sector in this war-torn country faces are health care access, shortage of human resources, and lack of trained professionals, and also, there are limited diagnostic centers for cancer [10, 15]. Oncology department of Jumhoriat Hospital is the only diagnostic center in the whole country. Our findings indicate that there is need to pay more attention to gastric cancer.

Results of this study show that gastric cancer is more prevalent among the men which is the same with other studies in different parts of the world. In context, the lifestyle of men in Afghanistan makes them more vulnerable to gastric cancer; for example, using smokeless tobacco (Nasuar), smoking, alcohol, and opium is more common among men than women. In the northern provinces and Tajek ethnicity, the incidence of gastric cancer was higher than the other ethnic groups and provinces; most residents in the northern provinces are Tjek. So, more investigation is to assess the correlation of ethnicity and GC.

Analysis of the data showed that the incidence of gastric cancer among Kabul residence is high. The reasons could be higher level of education and accessibility to health centers in this city than other cities; in some provinces, patients may die due to gastric cancer before diagnosis and treatment.

This is the first study in Afghanistan about gastric cancer. There are more gaps to be filled with other studies and more questions to be answered, such as why gastric cancer is more prevalent in some areas or ethnicity. So, it may be helpful to have for more studies in this field.

Data Availability Shah jahan shayan Kiwanuka Frank Ahmad Mustafa Rahimi,Maihan Abdullahi, demographic profile of gastric cancer in Afghanistan. 09.05.2019, 14:29 . Doi:10.6084/m9.figshare.8104826

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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