A STUDY OF THE LOWER GASTROINTESTINAL TRACT CANCER WITH EMPHASIS ON GENDER AND AGE OF THE PATIENTS IN WESTERN IRAN (KERMANSHAH) OVER 2006-2011

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ABSTRACT

Given that the incidence of cancers in the coming years will have a growing trend due to the increased average age of the world's population, the partial control of communicable diseases, and the rapid growth of the environmental risk factors. The present work was a descriptive, comparative and analytical study. The statistical population consisted of all patients residing in Kermanshah who had been suffering from the lower gastrointestinal tract cancer for five years. The results of the present study revealed that 46.10% were male, and 53.90% were female. Further, the results indicated that the age of patients and the intensity of cancer differentiation were significantly correlated.

It seemed that the lack of early diagnosis would ensue from a lack of periodic screening programs at early ages and lack of forums in which specialists could get together due to the unavailability of comparative statistics.

Keywords: Cancer, Lower Gastrointestinal Tract Cancer, Western Iran, Kermanshah City.

1. INTRODUCTION

Cancer is one of the major causes of disorders, fatality, and disabilities around the world[1]. In addition to the resultant fatality from cancers, they lead to disabilities and physical and mental complications throughout the course of the treatments due to the nature of the disease itself and the lack of appropriate treatments. Hence, societies incur high costs in this respect[2-4]. Given that the incidence of cancers in the coming years will have a growing trend due to the increased average age of the world's population, the partial control of communicable diseases, and the rapid growth of the environmental risk factors; at this juncture of time, the formulation of programs to prevent and control cancers is considered a health-related necessity in any society[5]. The incidence of the gastrointestinal tract cancer is so high in developing countries, including Iran, that 50,000 new cases of cancers are annually reported in Iran[6, 7]. This rise in the incidence of cancers, regarded as a scourge and challenging problem, is particularly noticeable in western Iran[8]. According to the results of studies conducted in Kermanshah Province in 2010, it was indicated that 8.7 per hundred thousand were suffering from the colon cancer[9]. It seems that the prevalence of the gastrointestinal cancer is very high in Kermanshah, but no studies have yet been carried out to specify the trend of this important disease, changes in the incidence of the disease during the past few years, and its epidemiology in Kermanshah Metropolis. On the other hand, since the rise in the incidence of the gastrointestinal diseases has had many major implications for health care systems and health communities, and a lot of efforts have been allocated to this issue in the health care systems[10-12], access to epidemiologic information will be fruitful in the design and successful implementation of planning. So, the present study aimed to investigate the lower gastrointestinal tract cancer in Kermanshah, western Iran over 2006-2011.

2. METHODS

The present work was a descriptive, comparative and analytical study. The statistical population consisted of all patients residing in Kermanshah whose information had been recorded in the Kermanshah-based pathology center over 2006-2011. Additionally, the medical dossiers of the patients were collected by the Vice Chancellery for Health at Kermanshah University of Medical Sciences. Then, the collected data were analyzed based on age, gender, the type of gastrointestinal cancer, the place where they got infected with this disease, the intensity of the cancer, and the tumor behavior. In the present study, the cancer intensity denoted the strength of the cancer differentiation whose information was entered into the pathology sheets of patients and was examined based on the findings from tumor histology as well as the level of differentiation of the tissue. Based on the ICD-O Coding System, the cancer intensity fitted into five categories: 1=good differentiation, 2=average differentiation, 3=weak differentiation, 4=without differentiation, and 9= unknown differentiation. In addition, based on the codes of ICD-O, the behavior of the tumor was classified into six ranges: 0= benign, 1= unknown in terms of being malignant or benign, 2= carcinoma, 3= malignant disease of primary origin, 6= metastatic malignant disease, and 9= malignant disease of unknown primary origin[13, 14]. Given the type of data used in the present study, the Kruskal–Wallis and Chi-squared tests were employed in the environment of SPSS Statistics Software Version 18.0. Moreover, to study the correlation of the age of patients with the intensity of cancer differentiation and the behavior of cancerous tumors, the age groups fell into three categories: 1) 45 and younger, 2) 45 to 65, and 3) 65 and above.

3. RESULTS AND DISCUSSION

Of the 154 cases of cancers in the space of five years, 71 (46.10%) and 83 (53.90%) cases were male and female, respectively. Only three females were diagnosed with small intestine cancer (Mean ± SD=47.16±67.1), and 98 patients (50 men or 51.02% and 48 women or 48.89%) were diagnosed with colon cancer (Mean ± SD=61.15±21.43). Also, 13 patients (4 men or 30.77% and 9 women or 69.23%) were diagnosed with Rectosigmoid (Mean ± SD=63.46±11.6). Additionally, 37 patients (17 men or 45.94% and 20 women or 54.06%)

were suffering from distal colon cancer (Mean ± SD=57.78±17.25), and only three females were diagnosed with anal cancer (Mean ± SD=69±15.71). In terms of the mean age, those suffering from the anal cancer had the highest mean, and the lowest mean belonged to those diagnosed with the small intestine cancer. Further, the results indicated that the age of the patients and the intensity of cancer differentiation were significantly correlated ($p<0.01$). The results of the present study also revealed that the cancer intensity among patients aged 45 and younger fitted into the following categories: good differentiation (17.8%), average differentiation (6.7%), 3=weak differentiation (6.7%), without differentiation (2.2%), and unknown differentiation (66.7%). As for the 45-65 age range, the cancer intensity was as follows: good differentiation (25.4%), average differentiation (12.3%), 3=weak differentiation (4.4%), without differentiation (0.9%), and unknown differentiation (57%). Besides, the cancer intensity among the patients aged 65 and older fitted into the following categories: good differentiation (15.3%), average differentiation (5.6%), 3=weak differentiation (2.4%), without differentiation (0.8%), and unknown differentiation (70.8%), and the differences were significant in this respect (see Table 1). In addition, the results of Kruskal–Wallis Test showed that the relationship between the age of the patients and the behavior of cancerous tumors was not significant. Also, in terms of the lower gastrointestinal tract cancer, no significant difference was observed between men and women.

Table 1. The Relationship between the Age of the Patients and the Intensity of Cancer Differentiation

Age	Good Differentiation	Average Differentiation	Weak Differentiation	Without Differentiation	Unknown Differentiation	Chi-square test	Sig
45	8 (17.8%)	3 (6.7%)	3 (6.7%)	1 (2.2%)	60 (66.7%)	43.98	0.001
45-65	29 (25.4%)	14 (12.3%)	5 (4.4%)	1 (0.9%)	65 (57%)	45.24	0.001
65	19 (15.3%)	6 (5.6%)	3 (2.4%)	1 (0.8%)	94 (70.8%)	152.38	0.001
Index Statistics	8.88						
Sig	0.001						

The overall results of the present study demonstrated that of the total recorded cases of cancers, the colon cancer had the highest percentage, a clear indication that this case should be placed high on the list of health priorities of Kermanshah. Moreover, according to the pathology reports, the mean age of those infected with cancers in all sections of the digestive system was 62.14 ± 15.60. Without regard to gender, it was concluded that the incidence of the gastrointestinal cancer at the age of 60 had the highest frequency, which was concurrent with the results of studies conducted by Yazdanbod et al. (2005) and Zeynalzadeh et al. (2012)[15, 16]. Also, in terms of the lower gastrointestinal tract cancers, it was shown that those suffering from the anal cancer had the highest mean age (69 years old), and the lowest mean age (47.67 years old) belonged to those diagnosed with the small intestine cancer. The colon cancer was the most common cancer among men, whereas the most common cancers among women were the distal colon and Rectosigmoid cancers, indicating that such malignancies were more prevalent among women. This result was consistent with the results of a study

performed by Norouzinejad et al. (2009)[5].

The results of the tests employed in the present study demonstrated that in terms of tumor histology in the three age groups under study, the highest percentage of cancers fell into the category entitled 'unknown differentiation,' and this case was more prevalent among those aged 65 and above. Besides, it seemed that the lack of early diagnosis would ensue from a lack of periodic screening programs at early ages and lack of forums in which specialists could get together due to the unavailability of comparative statistics. Moreover, the tumor histology has a tendency to become undifferentiated at older ages at which the treatment will naturally be trickier. Therefore, the diagnosis of cancers at early ages is profoundly efficacious in tissue differentiation in terms of tumor histology and treatment process and should be taken into consideration. Cancer is among the diseases that proper nutrition can play a major role in its prevention and treatment. Consuming more fiber and antioxidant-rich vegetables and fruits as well as low-fat diets can lessen the risk of cancer. Kermanshah enjoys several different ethnic groups and sects, and given the same dietary patterns among these ethnic groups and sects, it seems that cancer in different parts of the digestive system and the types of diets in different parts of the city are correlated. Also, the practice of consanguineous marriages among these people can play a key role in the genetic distribution of diseases, and it is likely that the formation of cancer hot spots across Kermanshah be influenced by this factor.

4. CONCLUSION

Given the emission of greenhouse gases produced by factories, water pollution, dumping of industrial waste into rivers and nature, those inhabiting areas in the vicinity of industrial plants and being exposed to high levels of traffic congestion are more vulnerable to various types of cancers. Not to mention, there are two industrial estates in the west and east of Kermanshah, and given that the direction of the prevailing wind is from the west to the east, the concentration of industrial pollutants is intensified, affecting the distribution of cancers throughout Kermanshah. Finally, it should be noted that the environmental factors play a very crucial role in the incidence of a lot of gastrointestinal malignancies, which can be controlled

through holding programs that raise public awareness about such diseases, just like what have been practiced in developed countries.

5. ACKNOWLEDGEMENTS

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