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Investigation of colorectal cancer distribution in Mardin province

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Abstract

Colorectal cancers are the third most common tumors both in the world and in Turkey. Its frequency may vary according to geographical regions, environmental conditions and feeding habits. This study aimed to investigate the distribution of CRC patients admitted to Mardin State Hospital Medical Oncology Outpatient Clinic according to age, sex, diagnosis and stage. The records of patients admitted to Mardin State Hospital Medical Oncology Clinic between 2014-2018 were reviewed retrospectively. Patients over 18 years of age were included in the study. Gender, diagnosis and disease stages of the patients were recorded. A total of 1208 patients were examined. 160 colorectal cancer patients (13.2%) were detected. 74 (46.3%) of the patients were female and 86 (53.8%) were male. The male / female patient ratio was 1.16 / 1. While the median age of the whole group was 57 (19-93), the median age of the women was 57.78 (24-86) and the median age of the men was 56 (19-93). The ratio of colon cancer / rectal cancer in men was 54/32 (62.8 / 37.2%), whereas it was 44/30 (59.5 / 40.5%) in women. There was no difference in the age of the groups according to the diagnosis of colon and rectal cancer and gender ($p = 0.37$ and $p = 0.59$). There was no difference between the groups when the diagnoses and stages were compared by gender ($p = 0.66$ and $p = 0.18$). When the application stage was examined in all groups, the least application was in stage 1, and the most common application was in stage 4. 32 patients (20%) were over 70 years old and 19 (11.9%) were over 75 years old. The number of patients ≤ 49 years and 50-64 years were 51 (31.9%) and 64 (40%), respectively. This study includes the first CRC data of Mardin province. CRC patients in Mardin are diagnosed at a younger age and in an advanced stage. Since diagnosis and treatment methods are not sufficient in Mardin, patients are mostly diagnosed outside the province. Therefore, the number of patients is limited. Nevertheless, the statistics will be the first to guide future studies.

Keywords: Colon cancer, rectal cancer, distribution, Mardin, Turkey

Introduction

Cancer is a major health problem in almost every country in terms of mortality and morbidity rates. Today, it is the second leading cause of death worldwide after cardiovascular diseases [1]. According to the United States (USA) cancer database, colorectal cancer (CRC) is the third most common type of cancer in men and women. In addition, CRCs are the third most common cause of cancer-related deaths [2]. It is more common in European and US countries, and more rarely in Asian and African countries [3]. According to Turkey Cancer Statistics 2013 data, CRC is the third most common type of cancer in women after breast cancer and thyroid cancer and also the third most common cancer type in men after lung and prostate cancers [4]. According to Globocan 2012 Data, published by International Agency for Research on Cancer

(IARC) [5], CRC is the third most common cancer type in men, in the World, the European Union (EU) (28 countries), the United States and Turkey. In Women, it is the second most common cancer type in World and EU and the third most common cancer type in the USA and Turkey.

Risk factors for colorectal cancer have been identified and its incidence increases in older age. More than 90% of colorectal cancer is diagnosed after the 50s. Studies with large case series found peaks in the 7th decade [6]. The incidence increases in both sexes with age and is the most common cancer in both sexes, over 75 years of age [7]. This study aimed to investigate the distribution of CRC patients admitted to Mardin State Hospital Medical Oncology Outpatient Clinic according to age, sex, diagnosis and stage.

Materials and Methods

The records of patients admitted to Mardin State Hospital Medical Oncology Clinic between 2014-2018 were reviewed retrospectively. Patients over 18 years of age were included in the study. Gender, diagnosis and disease stages of the patients were

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recorded. Comparisons were made according to sex and colon-rectum cancer diagnosis. Statistical analysis was performed using SPSS version 20.0 software. Chi-Square or Fisher Exact tests were used to compare categorical variables. Parametric variables with normal distribution were compared with Student's t-test of independent groups. Parametric variables and ordinal variables that did not fit into the normal distribution were compared using the Mann-Whitney U test. p values less than 0.05 were considered statistically significant.

Results

A total of 1208 patients were examined. 160 colorectal cancer patients (13.2%) were detected. Of these patients, 98 were colon (61.2%) and 62 were rectum (38.8%). 74 (46.3%) of the patients were female and 86 (53.8%) were male. The male / female patient ratio was 1.16 / 1. While the median age of the whole group was 57 (19-93), the median age of the women was 57.78 (24-86) and the median age of the men was 56 (19-93). The median age of colon cancer patients was 56.67 (20-93), while the median age of patients with rectal cancer was 57.03 (19-86). While the female / male ratio was 44/54 (44.9% / 55.1%) in colon cancer patients,

this ratio was 30/32 (48.4% / 51.6%) in patients with rectal cancer. Colon cancer / rectal cancer ratio in men was 54/32 (62.8% / 37.2%), whereas it was 44/30 (59.5% / 40.5%) in women. The ratio of colon cancer / rectal cancer was 31/21 (59.6% / 40.4%) at age 50 and under. There was no difference between the groups according to the diagnosis of colon and rectal cancer ($p = 0.37$). In addition, the ages of the two groups were similar according to gender ($p = 0.59$). There was no difference between the groups when the diagnosis and stages were compared according to gender ($p = 0.66$ and $p = 0.18$). In all groups (female, male, colon cancer, rectum cancer, total), when the application stage was examined, the least applications were in stage 1 and the most common ones were in stage 4 (Table 1). When the patients were divided into four groups as ≤ 49 years, 50-64 years, 65-79 years and ≥ 80 years, the number of patients was 51 (31.9%), 64 (40%), 36 (22.5%) and 9 (5.6%), respectively. In men these rates were 27 (31.4%), 40 (46.5%), 16 (18.6%) and 3 (3.5%); in women this rates were 24 (32.4%), 24 (32.4%), 20 (27%), and 6 (8.1%), respectively. There were 32 (20%) patients over 70 years and there were 19 (11.9%) patients aged 75 years and over.

Discussion

Table 1. Disease Stage distribution according to sex and diagnosis

Group/Stage	Stage 1 (n,%)		Stage 2(n,%)		Stage 3(n,%)		Stage 4(n,%)		Total
	n	%	n	%	n	%	n	%	
Female	3	4.1	25	33.8	20	27	26	35.1	74
Male	10	11.6	20	23.3	28	32.6	28	32.6	86
Colon Cancer	7	7.1	29	29.6	29	29.6	33	33.7	98
Rectal Cancer	6	9.7	16	25.8	19	30.6	21	33.9	62
All Group	13	8.1	45	28.1	48	30	54	33.8	160

Among all cancers, the incidence of colorectal cancers is approximately 9 %. This rate varies between countries and races. It is more common in European countries and the United States, and more rarely in Asian and African countries [3]. In the Mardin study, the CRC rate was 13.2%. There are different results in the distribution of colorectal cancers according to gender in the literature. Although it has been reported to be seen in close proportions in both sexes, in a study Boyle et al. reported that colorectal cancers as 1.1 times higher in males than females [8]. The lifetime probability of CRC diagnosis is 5.0 % in men and 4.7% in women. While the male to female ratio is 1.1 at the age of 0-49, it is 1.4 at the age of 50-79, 1.2 at the age of 80 and over [9]. The reason for this high rate in men is not fully understood, but it has been suggested that changes in the screening test habits over 50 years and older or may be due to etiological factors with complex interactions of sex hormones and risk factors exposures [10,11]. In the Mardin study, the male-female ratio was 1.16 and was similar to the literature. Similar to the Mardin study, the rate of males and females was found to be 1.16 in a study included 123 patients by Yalçın et al., in Samsun and its surroundings [12]. In this study, the median age of male patients was 62.82 and female patients was 62.21. In the Mardin study, the median age was 56 years for men and 57.78 years for women. In a study conducted

by Gürsoy et al. with 250 patients with CRC in Kayseri and its region, the ratio of male to female was found to be 1.3 / 1 [13]. In the study of 69 patients conducted by Özgören et al. in Van and its surroundings, the male / female ratio was reversed and the female / male ratio was 1.3 / 1 [14]. In this study, median age was found to be 48.3 in males and 47 in females. The Mardin study and this study indicate that CRCs occur at a younger age in Eastern and Southeastern Anatolia.

Metastasis is detected at the time of diagnosis in 25% of colorectal cancer (CRC), while metastasis develops in the disease process in approximately 50% of patients [15,16]. In the Mardin study, the rate of metastatic patients in the whole group was 33.8%.

Approximately 60% of cases and 70% of deaths occur at age 65 and over. Approximately 30% of cases and more than 40% of deaths occur in women aged 80 and over; 20% of cases and 30% of deaths occur in men in 80 and over [9]. The rate of patients over 70 years of age in Mardin is 20% and the rate of patients aged 75 and over is 11.9% . As a results, the rate of elderly patients is very low according to the literature. In the Mardin study, 51% of the patients were diagnosed at age 49 and under .In addition, the rate of patients in the 50-64 age range was 40%. In a study conducted

by Yalcin et al. [12] , 82.1% of cases were identified in 51 years and over. In this study, the rate of rectal cancer was 33.3% in men and 40.4% in women, whereas in the Mardin study, this rate was 37.2% for men, 40.5% for women and 38.8 % for all group. In the USA, this rate was reported as 28% for rectal cancer in all groups [9, 17]. According to the study of Siegel et al., [9] rectal cancer percentage was 28% in the whole group, while it was 31% in men and 24% in women. In one study, it was reported that the rate of rectal cancer under the age of 50 ranged from 36-40% (in women and men) [18]. In the Mardin study, this rate was 40.4%. In the study of Siegel et al., [9] patients were evaluated in 4 groups as age 49 and under, age 50-64, age 65-79 and age 80 and above; patient rates were detected as 10-32-39% and 19% in males and 10-25-35-29% in females, respectively. In the Mardin study, these rates were 31.4-46.5-18.6 and 3.5% in males, respectively; 32.4-32.4-27 and 8.1% of women, respectively and the patients were diagnosed at a younger age.

Although rectal tumors are detected at the localized stage and colon tumors are detected at a higher stage, the 5-year overall survival rate is slightly higher in rectal tumors compared to colon tumors (67% vs. 64%) [19]. The localize stage rate at diagnosis 43% in rectal tumors and 38% in colon tumors. The localized stage rate in all groups (CRC) is 39% [19]. In the Mardin study, the rate of the local stage (stage 1 and 2) was 35.5% in rectal cancers, while it was 36.7% in colon cancers, and there was no difference between the two groups in terms of stages. The local stage rate in the whole group was 36.2% and these results are close to the literature.

According to a study including 2003-2009 USA data, colorectal cancer stage distribution was examined and CRC stage rates detected as at localized stage 40%, regional: 36%, distant: 20%, unstaged 5% and these rates were 38-37-21-4% for colon cancer and 44-33-18-6% for rectal cancer, respectively [20]. In the Mardin study, patients examined as stages 1,2,3 and 4 and stage rates were 8.1-28.1-30-33.8% in the whole group (CRC);, 7.1-29.6-29.6-33.7% in colon cancer, and 9.7-25.8-30.6-33.9 % in rectal cancer. In other words, while localized stage (1-2) was approximately 36%, the regional stage was 30%, distant metastasis was around 33% and distant metastasis rates were higher in Mardin than in the present study [20].

Conclusion

This study includes the first CRC data of Mardin province. CRC patients in Mardin are diagnosed at a younger age and in an advanced stage. Because of diagnosis and treatment methods are not sufficient in Mardin, patients are mostly diagnosed outside the province. Therefore, the number of patients is limited. Nevertheless, the statistics will be the first to guide future studies.

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Ethical approval

In this retrospective study, local ethics committee approved the study.

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