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Colorectal Cancer in Hadhramout Characteristics and Trends

Rasheed Mohammed Bamekhlah
College of Medicine and Health Sciences, Hadhramout University

Abdullah Saleh Bin Nabhan
College of Medicine and Health Sciences, Hadhramout University.

Hussain Saeed Alghazli
College of Medicine and Health Sciences, Hadhramout University

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Rasheed Mohammed Bamekhlah* **Abdullah Saleh Bin Nabhan***
Hussain Saeed Alghazli*

Abstract

Colorectal cancer is an important public health problem in the world, and there is no previous study in Hadhramout, Republic of Yemen about it so we aimed to describe characteristics and trends of colorectal cancer registered in Hadhramout National Oncology Center. A retrospective analysis of all registered cancers (2988) between 2002-2012, to describe colorectal cancer with regards to age, sex, subsites and histopathology and clinical presentation. The results indicate that digestive system cancers are the most common cancers (15%); and colorectal cancer (30.9%) is the most common of these. It was more common in males (57.2%). Colorectal cancer is the most common digestive cancers, more common in males, with higher tendency of early-onset. Most colorectal cancers were adenocarcinoma, and abdominal pain and rectal bleeding followed by altered bowel habit were the most common presentation.
Keywords: Colorectal, cancer, Hadhramout, Yemen.

Introduction:

Colorectal cancer (CRC) is an important public health problem. it is the third most common cancer in men and the second most common cancer in women after breast cancer worldwide [15,22]. There are nearly one million new cases diagnosed worldwide each year and approximately half a million death, making this cancer the fourth most common cause of death throughout the world, with a risk of occurrence of one out of every 20 individuals [6]. The developed countries account for >63% of the total global incidence. High-risk areas include North America, Europe, and Australia. Central and South America, Africa and Asia are areas with low risk factors [25]. There are many risk factors for CRC, some of which are not amenable to change. These include older person (>50 years), male sex, inflammatory bowel diseases, certain hereditary conditions and a family history of CRC or adenomatous polyps [2]. A great concern is recently paid for genetic factors [27], in addition to the role of environmental factors, these factors include low physical activity, [9], infection [8,13,14], tobacco [19], hyperinsulinemia associated with type II diabetes mellitus [11] and dietary factors [25]. However, 75% of all CRC occur in people with no known predisposing factors for the disease, this makes early detection and management with different screening modalities is an important mean for significant reduction in CRC incidence and mortality [2]. Currently, it is estimated that screening of the average risk people over the age of 50 would reduce mortality for CRC by 50% [26].

In Hadramout, Republic of Yemen, data regarding this cancer are scarce. Therefore, this study was undertaken to highlight the characteristics and trend of this cancer through analyzing the data registered in Hadramout National Oncology Center (HNOC) during 11 years period.

Subjects and methods

A descriptive, cross-sectional retrospective study for all registered cancers (2988 cases) in HNOC from January 2002 to December 2012 were performed, looking for CRC with regards to age, sex and, subsites and histopathological diagnosis,. As the clinical presentation data were not available before 2006, these were analyzed for the cases registered between 2006 - 2012 only. The neoplasms had been coded and classified according to the international classification of diseases for oncology (ICD-O, 3rd edition) [10].

Data processing and statistical analysis:

All data collected were entered into a personal computer, using SPSS program version 20.0 software for entering data and analysis purposes. Descriptive statistic such as frequencies and percentages were calculated and then study results were presented in tables and using Excel and Word programs.

Results:

Two thousand nine hundred and eighty-eight cases were registered during the 11 years study. Digestive system cancers (DCs) accounted for 447 cases (15%) where the first ranking cancer among the registered cases. Among them, CRC (ICD-O 18-20) is the leading cancer (138 cases, 30.9%) as shown in **(Table 1)**.

* Associate Professor, Department of Medicine, College of Medicine and Health Sciences, Hadhramout University. Mukalla, Hadhramout, Republic of Yemen.
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Table (1): Subsites of digestive system Cancers (HNOC 2002-2012)

Crude No.	Site	No	%
C-18-20	Colorectal	138	30.9
C-22	Liver	90	20.1
C-16	Stomach	88	19.7
C-25	Pancreas	53	11.9
C-15	Esophagus	40	8.9
C-17	Small intestinal	15	3.3
C-21	Anal	09	02
C-24	Biliary tree	05	1.1
C-17.0	Duodenum	03	0.7
C-23	gallbladder	03	0.7
C-26	Others GI cancers	03	0.7
	Total	**447**	**100**

Table 2 show that colon cancer was (75 cases, 54.3%), rectum (59 cases, 42.8) and rectosigmoid (4 cases, 2.9%). By gender, 80 cases were males (57.2%) compared to 58 females (42.8%).

In **Table 3** the peak age of prevalence of all CRC was ≥ 70 years (29% of cases), followed by patients aged (60-69 years), cases < 40 years are 15.9%. Rectal cancer in young patients was higher than colon cancer in the same age group (12 versus 8 cases), while Colon cancer in old patients was more than rectal cancers in the same age group (25 versus 15 cases).

Table (2): Sex distribution of Colorectal Cancer

Cancer	Male		Female		Total	
	No.	%	No.	%	No.	%
Colon (n=75)	43	57.3	32	42.7	75	54.3
Rectum (n= 59)	35	59.3	24	40.7	59	42.8
Rectosigmoid (n=04)	02	50	02	50	04	02.9
Total	**80**	**57.2**	**58**	**42.8**	**138**	**100**

Table (3): Age distribution of Colorectal Cancer

Age (years)	Colon cancers (n=75)		Rectosigmoid cancers (n=4)		Rectum cancers (n=59)		Total (n=138)	
	No.	%	No.	%	No.	%	No.	%
< 40	08	10.7	02	50	12	20.3	22	15.9
40-49	10	13.3	00	00	06	10.2	16	11.6
50-59	16	21.3	00	00	13	22	29	21
60-69	16	21.3	02	50	13	22	31	22.5
≥ 70	25	33.4	00	00	15	25.5	40	29
Total	**75**	**100**	**04**	**100**	**59**	**100**	**138**	**100**

The characteristics of CRC are demonstrated in **(Table 4)**. Regarding the anatomic subsites of CRC, 39.9% were not specified as to subsites. The distribution of cancer across the remaining subsites revealed rectal and area preponderance (42.8%) with transverse colon as the least involved subsite (2.2%). For histopathological diagnosis**,** 46.4% of cases not specifically stated, and 50% were stated as adenocarcinoma.

Table (4): Subsites and histopathological diagnosis of colorectal Cancers

	Colorectal Cancers (n=138)	
	No.	**%**
Subsites of the cancer		
Rectum	59	42.8
Colon *	55	39.9
Sigmoid	08	5.8
Descending colon	05	3.6
Rectosigmoid	04	2.8
Transverse colon	03	2.2
Caecum	03	2.2
Hepatic flexure	01	0.7
Total	**138**	**100**
Histopathological diagnosis		
adenocarcinoma	69	50
carcinoma *	64	46.4
Squamous cell carcinoma	02	1.4
Others	03	2.2
Total	**138**	**100**

*Not otherwise specified

Table 5 shows that abdominal pain was the most common presentation in CRC (56.1% of cases), followed by rectal bleeding (34.8%), and altered bowel habit (28.8%), loss of weight (16.7%), anorexia and anemia (12.1% each). The least common presentation was abdominal mass (4.5%) followed by intestinal obstruction (10.6%).

Table (5): Clinical presentation of colorectal Cancer (Hadramout National Oncology Center 2006-2012). (n=66)

Clinical presentation	**Frequency**	**%**
Abdominal pain	37	56.1
Rectal bleeding	23	34.8
Altered bowel habit	19	28.8
Loss of weight	11	16.7
Anorexia	08	12.1
Anemia	08	12.1
Intestinal obstruction	07	10.6
Abdominal mass	03	4.5

Discussion:

In spite of the presence of effective screening modalities, CRC is still an important cause of cancer-related morbidity and mortality whose risk is now increasing even in previously low risk areas [25]. The World Health Organization (WHO) foresees the overall global situation in respect to CRC will be worse [28]. The socioeconomic changes and urbanization, which take place in the Hadrami society, entails characterization of this cancer, which is usually linked with economic development. As our study limited to registered data in HNOC, many difficulties are faced in the interpretation of the results due to undetailed history and histopathological diagnosis and staging of the neoplasia. As a result of this, our study indicated that only 50% registered as adenocarcinoma, in contrast to what accepted globally that, up to 98% of CRC are adenocarcinoma [25]. This would not reflect the real situation of this cancer in our community. However, our results will

overview the characteristics of this cancer in the area covered by HNOC. The study demonstrated that CRC is the most common cancer in the digestive system. This is similar to what reported by Al-Radi et al., in Saudi Arabia [5] and Al-Jabri et al., Jordan [4]. In developed countries, CRC is not only the most common digestive system cancer, but also a leading cancer either the third or the second cancer behind lung cancer in male and breast cancer among females [15]. Our results were in accordance with the literature regarding the occurrence of high number of cases among males [2,3,7,12,21,25]. Early age of incidence is a characteristic in developing countries. Under age of 40, there are more than one-third of cases in Egypt [1], 21.4% in Saudi Arabia [20] and 17% in Philippine,[17] compared to 3.6% in USA (18) and 7.6% in Canada [16], our work reported 15.9%. Studies from Egypt proposed that the high incidence of cancer in young people could not be explained on a hereditary basis nor can it be attributed to bilharziasis [1], or the widespread use of pesticides especially organochlorine [24]. In our community, bilharziasis, farming and pesticide use are relatively common, and further analytical studies could delineate its role together with other risk factors for CRC. Abdominal pain and rectal bleeding in our work were the most common clinical presentation of CRC, followed by altered bowel habits and these were similarly reported in many other studies [11,23,29].

Conclusion, the study demonstrated that CRC is the leading digestive system cancer. Despite limitations in the background history, detailed histopathological diagnosis and staging, the study indicated that developing countries characteristics as the presence of relatively high proportion of early-onset tumor is clear. Therefore, we recommend further in-depth studies, to address the possible community-related risk factors of this cancer, education of the public about the nature of the disease, execution of screening programs for early detection and better outcome, detailed histopathological diagnosis and staging and improvement of cancer-reporting and registering activities.

Limitation of the study:

As the study was a retrospective there might be incomplete data in the HNOC archive. The center opened in 2000, and until 2005 no clinical data were documented and that is why we analyzed the clinical part from 2006 rather than 2000.

Recommendations:

1- Issuing The Hadramout Cancer Registry is essential in our province.

2- Prospective cancer studies are needed especially if concentrated on the society, the incidence, prevalence and the local risk factors.

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Disclosure:

No conflict of interest.

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سرطان القولون في حضرموت: الخصائص والاتجاهات

رشيد محمد بامخلاه عبدالله صالح بن نبهان

حسين سعيد الغزالي

الملخص

يعد سرطان القولون مشكلة صحية مهمة على مستوى العالم . ولكن لاتوجد أي دراسة سابقة عن هذا المرض في حضرموت الجمهورية اليمنية. لهذا فقد استهدفنا وصف الخصائص والاتجاهات لهذا الورم في سجل المركز الوطني للأورام بحضرموت. والدراسة عبارة عن تحليل لكل حالات الأورام المسجلة في هذا المركز (2988 حالة) خلال الفتره بين 2002–2012م لتوصيف سرطان القولون من حيث السن والجنس ومكان الإصابة في القولون والتشخيص النسيجي و الأعراض الأكلينيكية. فقد أوضحت النتائج أن عدد حالات أورام الجهاز الهضمي (15%) هي الأكثر شيوعا في حضرموت من الأورام الأخرى وتأتي أورام القولون الأكثر (30.9%) من بين أورام الجهاز الهضمي. هذه الأورام أكثر شيوعا عند الرجال (57.2%). كما إنه هناك ميل للبداية المبكرة للسرطان. الورم الغدي هو الأكثر شيوعا. وألم البطن والنزيف عبر المستقيم يليهما التغيير في عادة التبرز هي الأعراض الأكثر ظهورا.

الكلمات المفتاحية: القولون، سرطان، حضرموت، اليمن.