

Study of Colorectal Cancer in Qatar

*Kakil I. Rasul, CABM, MRCP(UK), Abdullah S. Awidi, FRCP,
Ahmed A. Mubarak, CABM, Ussama M. Al-Homsi, MD.*

ABSTRACT

Objectives: To study the epidemiology of colorectal cancer in Qatar and compare it with other parts of the world. To collect demographic data on colorectal cancer in Qatar (age and sex distribution) and to collect anatomic pathology data on colorectal cancer in Qatar.

Methods: Retrospective analysis of data collected from hospital records was used to review the incidence and prevalence of colorectal cancer in Qatar. During the period 1994-1998, one hundred and twenty patients with colorectal cancer were seen at Hamad General Hospital.

Results: Mean annual incidence was 24 patients/year. Forty-five patients were Qataris and 75 were non Qataris. Of the Qatari patients 26 (58%) were males and 19 (42%) females, male/female ratio was 1.4:1. Nine (20%) patients were under the age of 40 years, the presenting symptoms,

physical signs and the stage of the disease were similar to other studies. Descending and sigmoid colon was the most common anatomical site affected. The most common histopathological type was adenocarcinoma.

Conclusion: The overall incidence of colorectal cancer in Qatar is lower than most of the industrial countries, this may be due to certain factors such as young population, high intake of fruits and vegetables and the life style of the people in Qatar. The incidence in the people below the age of 40 years is higher than industrial countries and, in males due to the demographic structure of the population in Qatar.

Keywords: Colorectal, cancer, epidemiology, incidence.

Saudi Med J 2001; Vol. 22 (8): 705-707

The incidence of colorectal cancer is not well studied in many of the developing countries. The objective of this study is to calculate the incidence, demographic data and anatomic pathology data of colorectal cancer in Qatar.

Methods. During the 5 year period 1994-1998, one hundred and twenty patients with the histological diagnosis of colorectal cancer had been seen at Hamad General Hospital. This is the only referral hospital in Qatar serving approximately a population of 600,000. The data was collected from the hospital medical records and the Department of Anatomic Pathology serving the corporation.

Results. Forty-five (38%) patients were Qataris and 75 (63%) patients were non Qataris. The non Qataris represents a heterogeneous group of people coming mostly from South East Asia and other Middle East countries, these patients were not analyzed any further. In the Qatari patients there were 26 (58%) males and were 19 (42%) females (Table 1), with a male to female ratio of approximately 1.4:1. An average annual incidence of 7.5/100,000/year. The patients age ranged from 33-83 years, with mean age of 57.1 years, the highest number of patients were in the age range of 60-70 years, (12 patients 27%). The number of patients below 40 years of age were 9 (20%), (Table 1). One

From the Department of Medicine, Hematology/Oncology, Hamad Medical Corporation, Qatar.

Received 31st January 2001. Accepted for publication in final form 17th April 2001.

Address correspondence and reprint request to: Dr. Kakil I. Rasul, Department of Medicine, Hamad Medical Corporation, PO Box 3050, Doha, Qatar. Tel. +974 5810941, Fax. +974 4884512. E-mail: kakil.ibrahim@usa.net

Study of colorectal cancer in Qatar ... Rasul et al

Table 1 - Age and sex distribution.

No.	Age	Male	Female	Total and %
1	< 40 years	4	5	9 (20%)
2	40-50 years	3	4	7 (15.5%)
3	50-60 years	6	1	7 (15.5%)
4	60-70 years	8	4	12 (27%)
5	> 70 years	5	5	10 (22%)
	Total	26	19	45 (100%)

Table 3 - Estimated crude rate of cancer incidence by sex, and area, 1980 (per 100,000).

No.	Area	Male	Female
1	Eastern Africa	2.4	1.9
2	Northern Africa	4.2	3.0
3	Western Africa	5.9	6.6
4	Northern America	51.7	51.7
5	Japan	22.2	18.5
6	Western Asia	5.6	5.6
7	Eastern Europe	23.6	23.1
8	Northern Europe	46.7	48.5
9	Southern Europe	33.8	30.0
10	Western Europe	49.2	49.6
11	Australia	46.3	46.2
12	USSR	14.0	17.4
13	Qatar (Current study)	8.7	6.3

Table 2 - Pathology of the disease.

No.	Pathology	n	%
SITE OF THE DISEASE			
1	Descending and sigmoid colon	25	(55.5)
2	Rectum	11	(24)
3	Ascending colon	7	(15.5)
4	Transverse colon	2	(4)
STAGE OF THE DISEASE			
1	Duke A	3	(7)
2	Duke B	16	(35.5)
3	Duke C	16	(35.5)
4	Duke D	6	(13)
5	Others	4	(9)
HISTOPATHOLOGY TYPE			
1	Adenoca (unspecified)	14	(31)
2	Well diff adenoca	8	(18)
3	Moderat diff adenoca	11	(24)
4	Mucinous adenoca	5	(11)
5	Poorly diff adenoca	2	(4)
6	Papillary adenoca	1	(2)
7	Carcinoma in situ	3	(7)
8	Others	1	(2)
diff=differentiated, adenoca=adenocarcinoma, moderat=moderately			

presenting symptoms were not different from those discussed in other studies, but 5 (11%) patients presented with acute intestinal obstruction. The descending and sigmoid colon was the most common site 25 (56%) of the patients (Table 2). The majority of the patients were in stage Duke B 16 (35.5%) and C 16 (35.5%). The most common histopathological type was adenocarcinoma unspecified 14 (31%) of the patients.

Discussion. The State of Qatar lies halfway along the western coast of the Arabian Gulf, it is a peninsula extending northward into the Gulf, covering an area of 11,437 square km. Colorectal cancer is the 2nd most common cancer in males after lung cancer and in females after breast cancer in most parts of the world.¹ It has been listed the 3rd and 4th malignancy in Qatar during most years (Qatar Cancer Registry records). Fifty percent of cases attributed to dietary factors, low fiber and high fat in diet are the main risk factors,^{2,4} and 15-20% of cases attributed to genetic factor, polyposis coli and the hereditary non polyposis colorectal cancer (HNPCC).²⁻⁴ Certain other risk factors predispose to colorectal cancer such as increasing age, smoking and alcohol,^{7,8} inflammatory bowel disease,⁹ certain metabolic diseases, ureterocolic anastomosis, and previous pelvic radiation. Worldwide the incidence of colorectal cancer varies widely, it varies from 1.7 cases per 100,000/person/year in some west African countries to 51.7 case per 100,000 persons/year in Northern America (Table 3).¹¹ There are very few studies from the Middle East countries (Western Asia 5.6).¹⁰ A study from Iraq in 1984 showed an average estimate of incidence of colorectal cancer as 3.2 per 100,000 population.¹² In another study from Jordan, the incidence was 3.4.¹³ The low incidence of colorectal cancer in Qatar, 7.5 per 100,000/population/year, may be due to many factors such as the type of diet, high fiber containing and excess

patient had multiple polyposis, one patient had cancer (Ca) prostate (2nd malignancy), and one patient had chronic diverticular disease. The

fresh vegetable and fruits, high vitamins as B, C and E, the low consumption of alcohol, and less people smoking. The high incidence of the disease at a younger age group, below the age of 40 years was a surprising finding (20%). The highest number seen in the literature, in the western studies (15%).¹⁰ This could be due to the different pyramidal age distribution in Qatari population, the young people (below age of 40 years) constituting the majority of the Qatari population, The study showed a higher incidence of the disease in males (male to female ratio 1.4:1) (Table 1). The clinical presentation generally is not much different from other studies.⁴ Intestinal obstruction in 5 patients (12%) which is relatively low, in some studies it approaches to approximately 20% of the patients.¹⁵ The anatomical sites of the tumors (Table 2) had the highest number presented with tumor at the descending and sigmoid colon (56%) and lower number presenting with tumor at the transverse colon 2 (12%).² Duke stages of the tumor at presentation, majority 32 (70%) (Table 2) were in Duke stage B and C which is comparable with the finding in most of the studies. Three patients had carcinoma in situ (7%).⁷ The histopathological types of the tumors showed (Table 2) the most common type was adenocarcinoma (unspecified) 14 patients (32%). The treatment modalities used were surgery plus chemotherapy in 20 patients (45%), those were patients in stage Duke B and C, the chemotherapy used was a combination of Fluorouracil (5FU) and folic acid and 2 patients received irinotecan (CPT11, Camptosar). Radiotherapy was used in a few patients (4 patients only) as there is no radiotherapy center in Qatar. Follow up of the patients, showed 9 (20%) patients died by end of the study, from those diagnosed 5 years previous (9 patients) 4 patients died of colorectal cancer, so the 5 years survival rate was 55% which is a good survival rate.^{14,16,17}

In conclusion, although the total number of patients included in this study is too small to make a proper epidemiological study, we can conclude, first the low incidence of colorectal cancer in Qatar is possibly due to the dietary factors of high fruit and vegetables and other risk lowering factors are the social habit of low alcohol consumption and less cigarette smoking. Second, colorectal cancer in

Qatar tends to effect a young age group in a higher percentage than other parts of the world, this can be due to the high percentage of young persons in this population. Thirdly any screening programs, if started, may need to start at a younger age group.

References

1. Shwartz SI, Shires GT, Spencer FC. Principles of surgery. 7th ed. NY: MacGraw-Hill, Vol. 2 1998. p. 1346.
2. Malcolm GD. Science, medicine and future, colorectal cancer, review article. *BMJ* 1997; 314: 1882-1886.
3. Giancarlo M, Richard CP. Hereditary nonpolyposis colorectal cancer: the syndrome, the gene and historical perspectives. *J Natl Cancer Inst* 1995; 87:1114-871125.
4. Prichard PJ, Tjandra JJ. Colorectal cancer. *Med J Aust* 1998; 169: 493-498.
5. Bodger K. Colorectal cancer. *J R Coll Physicians Lond* 2000; 34: 197-201.
6. Charles SF, Fuchs CS, Giovannucci EL, Colditz GA, Hunter DJ, Stampfer MJ et al. Dietary fiber and the risk of colorectal cancer in women. *N Engl J Med* 1999; 340: 169-176.
7. Sandler RS, Lyles CM, Peipins LA, McAuliffe CA, Woosley JT, Kupper LL. Cigarette smoking, alcohol and risk of colorectal adenomas. *Gastroenterology* 1993; 104: 1445-1451.
8. Martinez ME, McPherson RS, Annegers JF, Levin B. Cigarette smoking and alcohol consumption as a risk factor for colorectal adenomatous polyps. *J Natl Cancer Inst* 1995; 87: 274-279.
9. Ekobom A, Helmick C, Zack M, Adami H. Ulcerative colitis and colorectal cancer population based study. *N Engl J Med* 1990; 323: 1228.
10. Kathryn LS, Michael JS, Daniel R. Review of colorectal cancer in patients under age 40 years; *Am J Surg* 1981; 142: 767-769.
11. Parkin DM, Laara E, Muir CS, Estimate of the World wide frequency of sixteen major cancers in 1980. *Int J Cancer* 1988; 41: 184-197.
12. Al-Fouadi A, Parkin DM, Cancer in Iraq: seven years data from the Baghdad Tumor registry: *Int J Cancer* 1984; 34: 207-213.
13. Alkayed S, Hijawi B. Cancer incidence in Jordan 1997. National Cancer Registry. (Amman) Jordan: Ministry of Health (JO); 1999.
14. Galen F, McSherry CK. Obstruction and perforation in colorectal cancer. *Ann Surg* 1971; 123: 983-992.
15. Eisenberg S, Decosse JJ, Harford F, Michalek J. Carcinoma of colon and rectum, the natural history. *Cancer* 1982; 49: 1131-1134.
16. Walter F. Surgical Pathology. 2nd ed. Philadelphia, New York (USA): JB Lippincott Co; 1988. p. 188.
17. Devita VT, Hellman S, Rosenberg SA. Cancer principles and practice of oncology, 5th ed. Philadelphia, New York (USA): JB Lippincott Co; 1997. p. 1144-1162.