

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/340579353>

# Clinico-pathological characterization of colonic cancer among patients attending KFH Hospital at Albaha, Saudi Arabia

Article · April 2020

CITATIONS

0

READS

43

5 authors, including:



**Thamer Alghamdi**

Albaha University

15 PUBLICATIONS 21 CITATIONS

[SEE PROFILE](#)



**Abuobaida Abukhelaif**

Albaha University

14 PUBLICATIONS 9 CITATIONS

[SEE PROFILE](#)



**Ihab Atta**

Al-Azhar University

26 PUBLICATIONS 69 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



The utility of cyclin D1 and p63 expression in the diagnosis and prognosis of prostatic adenocarcinoma [View project](#)



alternative medicine [View project](#)



## Clinico-pathological characterization of colonic cancer among patients attending KFH Hospital at Albaha, Saudi Arabia

Thamer Alghamdi<sup>1</sup>✉, Abukhelaif A.E.E<sup>2</sup>, Hala A.Khalafalla<sup>3</sup>, Jiehan M. Hassan<sup>4</sup>, Ihab Shafek Atta<sup>5</sup>

<sup>1</sup>Assistant professor and Consultant of General and Visceral Surgery, Department of General Surgery, Faculty of Medicine, Albaha University, KSA

<sup>2</sup>Department of Pathology, Faculty of Medicine, Albaha University, KSA

<sup>3</sup>Faculty of Medicine, Female Section Albaha University, KSA, Faculty of Medicine, Omdurman Islamic University, Sudan

<sup>4</sup>Faculty of Medicine, Female Section Albaha University, KSA, Faculty of Medicine, University of Khartoum, Sudan

<sup>5</sup>Department of Pathology, Faculty of Medicine, Albaha University, KSA, and Faculty of Medicine, Al-Azhar University, Assuit, Egypt

### ✉Corresponding author

Assistant professor and Consultant of General and Visceral Surgery,  
Department of General Surgery, Faculty of Medicine,  
Albaha University, KSA

### Article History

Received: 20 February 2020

Reviewed: 21/February/2020 to 28/March/2020

Accepted: 30 March 2020

E-publication: 08 April 2020

P-Publication: May - June 2020

### Citation

Thamer Alghamdi, Abukhelaif A.E.E, Hala A.Khalafalla, Jiehan M. Hassan, Ihab Shafek Atta. Clinico-pathological characterization of colonic cancer among patients attending KFH Hospital at Albaha, Saudi Arabia. *Medical Science*, 2020, 24(103), 1572-1577

### Publication License



This work is licensed under a Creative Commons Attribution 4.0 International License.

### General Note

Article is recommended to print as color digital version in recycled paper.

## ABSTRACT

Colorectal cancer (CRC) is considered as the third most frequent cancer worldwide and ranks as the fourth leading cause of death from cancer. The aims of this study were to analyze the epidemiologic and histopathologic characteristics of colorectal cancer among patients attending King Fahad Hospital at Albaha province, Saudi Arabia. *Patient and method:* a retrospective study was done over a period of 5 years from 2014 to 2018, the reported data on colonic endoscopic biopsies and surgical colectomy were retrieved and analyzed against sex of patients, duration and presentation of the disease, the histopathological characteristics of the tumor such as tumor differentiation and staging. *Results:* The data revealed a general increase in CRC incidence in both sexes with a slight preponderance of males (31; 53%) over females (27; 47%). The mean age at the time of diagnosis was 58 years (57 in females and 59 in males), with the majority of patients being older than 49 years (n = 44; 77 %). There was a slight predominance of cases among males (n=30; 51.7%). Site of occurrence was found that 39.7% (n=23) of tumors arose from the sigmoid colon, those developing from recto-sigmoid, ascending and descending colon constitute (17; 29.3%), (10; 17.2% and (8; 13.8%) of cases respectively. The endoscopic findings among study cases showed that most of the tumors were fungating nodular mass with the ulcerative surface. Regarding histopathological grading, more than half of adenocarcinomas were moderately differentiated adenocarcinoma in 32 (55.2%), 19(32.7%) were well-differentiated and only 7(12.1%) were poorly differentiated carcinoma. *Conclusion:* Our analysis of daily clinical practice provided valuable information as all consecutive patients of a secondary-care governmental hospital were included. The future needs of this demographic variation must be anticipated. Greater awareness of the potential for CRC in young people must be emphasized to all physicians.

**Keywords:** abdominal pain, adenocarcinma, Colorectal cancer, histological grading, rectal bleeding

## 1. INTRODUCTION

Colorectal cancer (or bowel cancer) (CRC) is considered one of the most common types of cancer in both men and women, ranking as the third most frequent cancer worldwide and ranks as the fourth leading cause of death from cancer (Arnold et al., 2017). Approximately the colon is considered as the major site for development of CRC as 80% of these tumors were diagnosed in the colon and the remaining 20% was diagnosed in the rectum.

Although in Saudi Arabia the incidence rate of CRC for a long period remains to be low ( 9 %) and ranks the 3rd after breast cancer, but over the last decade the number of diagnosed patients and rate of mortalities due to CRC has been growing considerably, given that majority of this colon cancer has been diagnosed among males (Al-Sheikh et al., 2015), (Alsanee et al., 2015), ( Alnuwaysir et al., 2016), (Goel et al., 2017), (Saudi Cancer Society, 2018). The increase in the incidence of the disease that the area has seen is likely related to causes such as due to genetic and environmental factors which include modification in the lifestyle principally the dietary and smoking habit in addition to the rapid development and transformation that have accompanied the petrol bang (Zubaidi, 2008), (Al-Radi et al., 2000), (Al-Ahwal et al., 2013), (Bader et al., 2014).

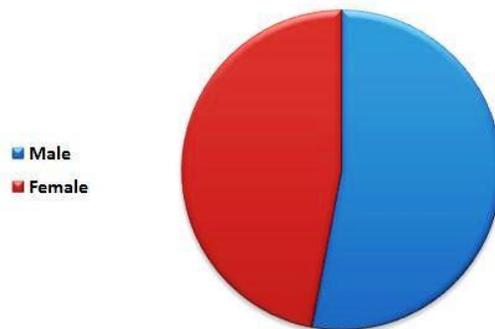
Albaha region, in the southwestern part of KSA, comes on the bottom of the list of the regions with low incidence in the kingdom (The Global Cancer Observatory, 2018), hence no study has been found in the literature regarding characteristics of the disease in Albaha, for this reason, we carry out our study with the aim to analyze the epidemiologic and histopathologic characteristics of colorectal cancer among patients attending KFH Hospital at Albaha, Saudi Arabia.

## 2. PATIENTS AND METHODS

The current study was done after taking the ethical approval from the ethical committee from King Fahad hospital 132/2019. This retrospective study was carried out with a study sample comprised of 58 colorectal cancer patients, who were examined in the Department of Histopathology at King Fahad Hospital which is a tertiary care hospital located in Albaha, KSA. Over a period of 5 years from January 2014 to December 2018, the reported data on colonic endoscopic biopsies and surgical colectomy specimens received during study period were retrieved and analyzed with regard to the sex of patients, duration and presentation of the disease, again the histopathological characteristics of the tumor such as tumor differentiation, staging and grade were studied and compared with age of the patients.

## 3. RESULTS

The retrieved data revealed a general increase in CRC incidence in both sexes with a slight preponderance of males (31; 53%) over females (27; 47%) as shown in Figure 1.



**Figure 1** Distribution of Study Population According to the Sex

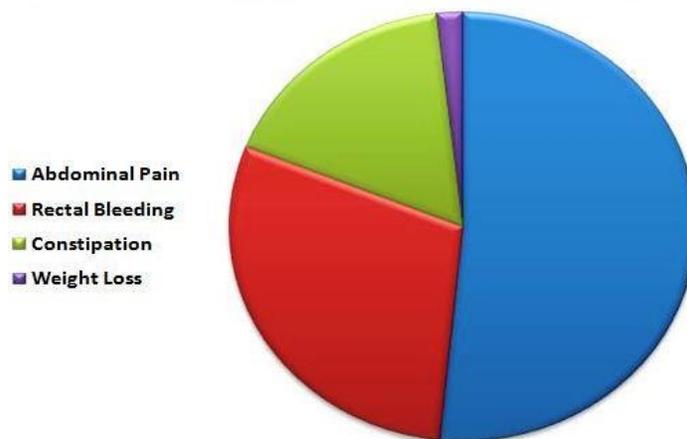
The incidence of CRC in the different age groups in females and males was shown in table 1. The age of the patients presented at the time of investigation and diagnosis was ranged from 25-85 years with mean of 58 years, with the majority of patients being older than 49 years (n = 44; 77 %). There was a slight predominance of cases among males (n=30; 51.7%).

**Table 1** Distribution of Study Population According to the Age

Age in Years	Frequency (male/female)	Percentage
20-49	14(7/7)	24 %
50-79	33(18/15)	56.8 %
80-100	11(5/6)	20.2 %
Mean	58(30/28)	100 %

### Clinical presentation

The median duration of presentation of symptoms was found to be about 32 months; forty four cases (72.9%) presented within 9 months of onset and fourteen cases (27.1%) presented longer than 9 months. The presenting symptoms were as follow: abdominal pain; 51.6%, rectal bleeding 29.5%, constipation; 17.1% and weight loss; 1.8% all these symptoms are illustrated in Fig. 2.



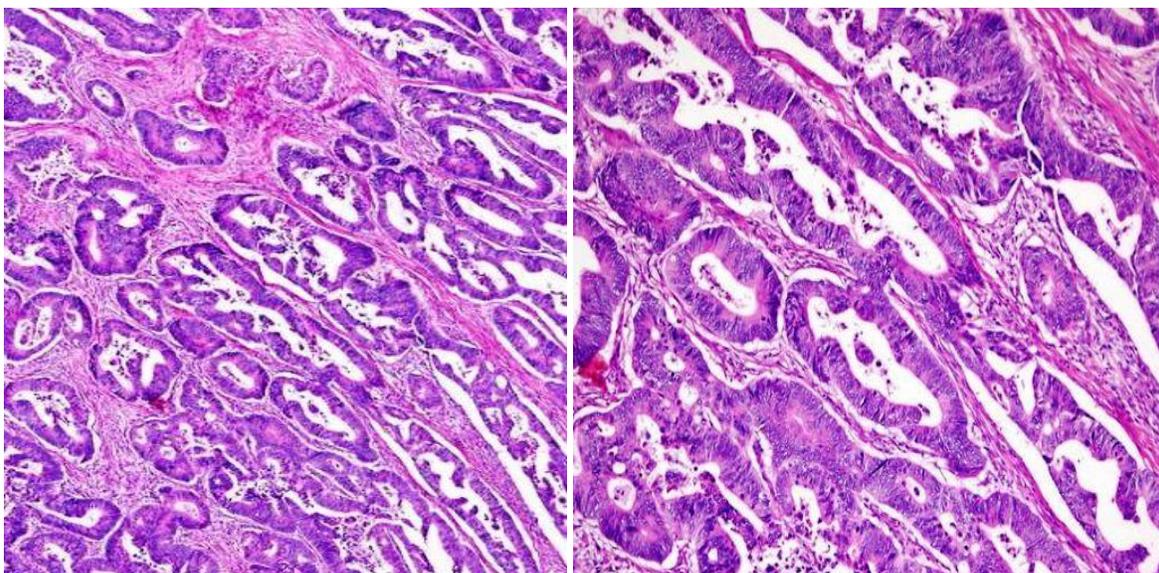
**Figure 2** Clinical presentation of the presenting cases

Regarding colonic cancer site of occurrence among our study population it is found that 39.7% (n=23) of tumors arose from the sigmoid colon, those developing from recto-sigmoid, ascending and descending colon constitute (17; 29.3%), (10; 17.2% and (8; 13.8%) of cases respectively. The endoscopic (macroscopic) findings among study cases showed that most of the tumors were fungating nodular mass (polyps) with the ulcerative surface while the reminder tumors were flat and infiltrating or constricting (Fig 3).

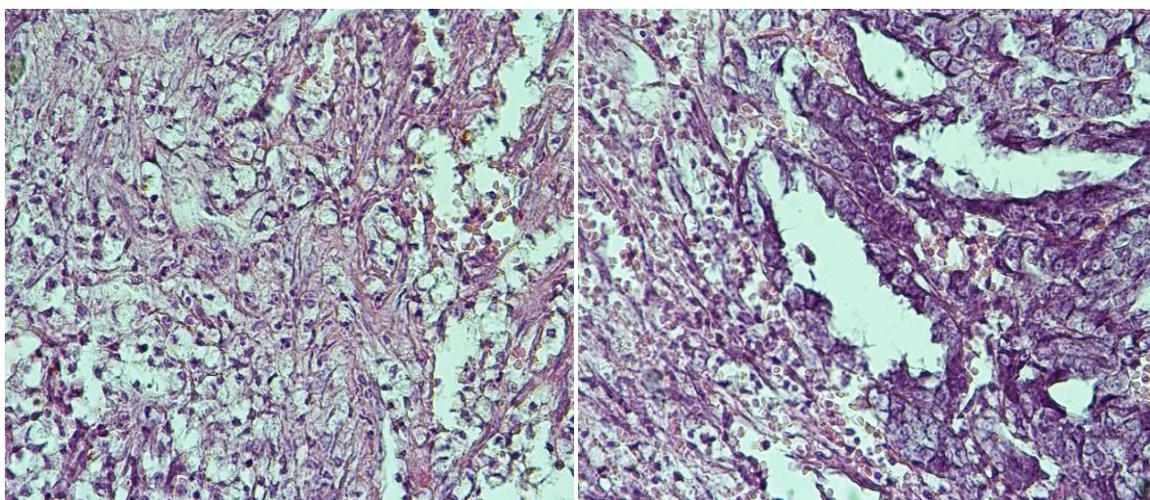
Microscopically, classical adenocarcinoma was the commonest type of colonic cancer encountered among our study cases with a total of 54 cases (M=28; F=26) representing 93.1% of the cases. Other types (6.9%) include mucinous adenocarcinomas and signet ring carcinoma (Fig 4 & 5).



**Figure 3** A Lower endoscopic views showing protruding fungating mass into the lumen of the colon in a patient suffering from chronic symptoms as abdominal pain and rectal bleeding



**Figure 4** A well to moderately differentiated colorectal carcinoma composed from branching anastomosing tubular gland with background of a desmoplastic stroma (hematoxylin and Eosin, x100 and 200).



**Figure 5** A signet ring variant of colorectal carcinoma. The cells are distended with mucin with collections of extracellular mucin. The glandular component is irregular, more condensed and branching (hematoxylin and Eosin, x100)

Regarding histopathological grading of cases, more than half of adenocarcinomas were moderately differentiated adenocarcinoma in 32 (55.2%), 19 (32.7%) were well-differentiated and only 7(12.1%) were poorly differentiated carcinoma (fig 4), (Fig 5).

#### 4. DISCUSSION

In our study, the number of males was greater than that of females, which is as that is consistent with both national and international data (Cascinu et al., 1996), (Ibrahim et al., 2008) (Murphy et al., 2010) (Ahmed et al., 2014) (The Global Cancer Observatory, 2018). The mean age of the patients at the time of diagnosis was 58 years (57 in females and 59 in males), with the majority of patients being older than 49 years (n = 44; 77 %). This finding is similar to those stated in other Middle-Eastern countries and are much higher than in Western countries as reported in a study conducted at Egypt in which the mean age of patients was 51 years with 25% of cancers occurring in patients aged less than 40 years (Al-Jaberi et al., 2003), while in some other reports show higher CRC rates in younger patients aged 40 years or younger as reported in 2–6% of CRC cases in France, Italy, and Taiwan and in 17–36% in Sudan, Saudi Arabia, and Iran (Lee et al., 1994), (Al-Ahwal and Al-Ghamdi, 2005) (The Global Cancer Observatory, 2018). The most common presenting symptom among our study population was abdominal pain, in contrast to others that reported rectal bleeding to be the most common presenting symptom. This may enlighten that CRC patients usually present late because these patients may be seen by other specialties.

Regarding colonic cancer site of occurrence among our study population it is found that 39.7% (n=23) of tumors originated from the sigmoid colon, those developing from recto-sigmoid, ascending and descending colon constitute (17; 29.3%), (10; 17.2% and (8; 13.8%) of cases respectively, this is not the case as reported in other studies in which most of the lesions were localized in the distal colon and the rectum (Qayyum and Sawan, 2009) (Aljebreen, 2007), (The Global Cancer Observatory, 2018).

Regarding histopathological grading of our cases, more than half of adenocarcinomas were moderately differentiated adenocarcinoma in 32 (55.2%), 19 (32.7%) were well-differentiated and only 7(12.1%) were poorly differentiated carcinoma this was in consistent with other studies in KSA which showed that most common type of colonic malignant tumor had well-differentiated to poorly-differentiated adenocarcinomas (Al-Ahwal and Al-Ghamdi, 2005) (Qayyum and Sawan, 2009), (The Global Cancer Observatory, 2018).

#### 5. CONCLUSION

Our study showed that CRC is not uncommon among Saudi patients and the rate is being highest in the 6<sup>th</sup> and 7<sup>th</sup> decades of life. Our analysis of daily clinical practice provided valuable information as all consecutive patients of a secondary-care governmental hospital were included. The future needs of this demographic variation must be anticipated. Greater awareness of the potential for CRC in young people must be emphasized to all physicians. Further study is required to be undertaken to find out whether CRC affecting the young population is due to regional factors or whether it is indicative of a changing pattern of occurrence of CRC. If the latter, supplementary and advanced studies have to done to determine genetic factors. Additional studies are also required to determine the value and cost-effectiveness of a screening program and the appropriate age for screening especially in Saudi Arabia.

#### Conflict of interest

This research is not funded and there is no conflict of interest to declare.

#### Funding

None

#### REFERENCE

1. Ahmed G, Basel E, Aida A, Anthony A. Colorectal cancer in Egypt is commoner in young people: Is this cause for alarm?. Alexandria Journal of Medicine. 2014;50: 197–201.
2. Al-Ahwal M, Shafik Y, Al-Ahwal H. First national survival data for colorectal cancer among Saudis between 1994 and 2004: what's next? BMC Public Health 2013;13: 73-7
3. Al-Ahwal MS, Abdo Al-Ghamdi A. Pattern of colorectal cancer at two hospitals in the western region of Saudi Arabia. Saudi J. Gastroenterol. 2005;11:164-9
4. Al-Jaberi TM, Yaghan RJ, El-Heis HA. Colorectal cancer in young patients under 40 years of age. Comparison with old patients in a well-defined Jordanian population. Saudi Med. J. 2003; 24:871-4.

5. Aljebreen AM. Clinico-pathological patterns of colorectal cancer in Saudi Arabia: younger with an advanced stage presentation. *Saudi J. Gastroenterol.* 2007;13:84-7.
6. Alnuwaysir M, Baral N, Alhadhari H. Colon Cancer Awareness and Attitude among Adult, Al-Dammam, Saudi Arabia. *Advances in Cancer Prevention.* 2016;01-04.
7. Al-Radi A, Ayyub M, Al-Mashat F, Barlas S, Al-Hamdan, et al. Primary gastrointestinal cancers in the Western region of Saudi Arabia, Is the pattern changing. *Saudi Med J* 2000;21: 730-734.
8. Alsanea N, Abduljabbar A, Alhomoud S, Ashari L, Hibbert D, Bazarbashi S. Colon cancer in Saudi Arabia: incidence, survival, demographics and implications for national policies. *Annals of Saudi Medicine.* 2015;35:196-202.
9. Al-Sheikh Y, Shaik A, Shaik A. Colon cancer: A review of the genome-wide association studies in the kingdom of Saudi Arabia. *Saudi Journal of Gastroenterology.* 2015;21:123.
10. Arnold M, Sierra MS, Laversanne M, et al. Global patterns and trends in colorectal cancer incidence and mortality. *Gut* 2017;66:683-91.
11. Bader T, Ismail A. Higher prevalence of KRAS mutations in colorectal cancer in Saudi Arabia: Propensity for lung metastasis. *Alexandria journal of medicine,* 2014; 50: 203-209.
12. Cusack JC, Giacco GG, Cleary K, Davidson BS, Izzo F, Skibber J, et al. Survival factors in 186 patients younger than 40 years old with colorectal adenocarcinoma. *J Am Coll Surg* 1996; 183: 105–12.
13. Goel S, Negassa A, Khot A, Goyal D, Guo S, Nandikolla A. Comparative Effectiveness Research: The Impact of Biologic Agents in Ethnic Minorities With Metastatic Colon Cancer. *Clinical Colon Cancer. Clin Colorectal Cancer.* 2017;30:187-6.
14. Ibrahim EM, Zeeneldin AA, El-Khodary TR, Al-Gahmi AM, Bin Sadiq BM. Past, Present and Future of Colorectal Cancer in the Kingdom of Saudi Arabia. *SJG.* 2008;14:178–182
15. Lee PY, Fletcher WS, Sullivan ES, Vetto JT. Colorectal cancer in young patients: characteristics and outcome. *Am Surg* 1994;60 :607–12.
16. Murphy G, Devesa SS, Cross AJ, Inskip PD, McGlynn KA, Cook MB. Sex disparities in colorectal cancer incidence by anatomic subsite, race and age. Published online 2010; May 25.
17. Qayyum A, Sawan AS. Profile of colonic biopsies in King Abdul Aziz University Hospital, J eddah. *J. Pak Med. Ass oc.* 2009;59:608-11.
18. Saudi Cancer Registry, Saudi Health Council Kingdom of Saudi Arabia. *Cancer Incidence Report Saudi Arabia 2018.*
19. The Global Cancer Observatory, 2018 <https://gco.iarc.fr/today/data/factsheets/populations/682-saudi-arabia-fact-sheets.pdf>.
20. Zubaidi A Multiple primary cancers of the colon, rectum, and the thyroid gland. *The Saudi J Gastroenterol* 2008;14: 202-205.