

**PATTERN AND STAGE AT PRESENTATION OF COLORECTAL
CANCER IN SAINT PAUL'S HOSPITAL MILLENEUM MEDICAL
COLLAGE /ADDIS ABABA /ETHIOPIA**

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IV. ACRONYMS:

CRC: Colo rectal cancer

CRM: Circumferential surgical resection margin

DRE: Digital Rectal Examination

EOCRC: Early Onset Colo Rectal Cancer

GIST: Gastro Intestinal Stromal Tumor

LN: Lymph Node

MSQC: Michigan Surgical Quality Collaborative

NEC: Neuro Endocrine Tumor

OPD: Out Patient Department

SPHMMC: Saint Paul's Hospital Millennium Medical Collage

TAH: Tikur Anbessa Hospital

V. ABSTRACT

Background:

Colorectal Cancer is the third most common cause of admission and death in the West; and till recently it was thought to be an uncommon disease in Africa and Asia. A recent report from Global cancer statistics center shows an increasing incidence in the sub-Saharan Africa. The magnitude of EOCRC incidence in Ethiopia increased, contributing to significant morbidity and mortality. This may be related to economic transition and westernization. A recent study at Tikur Anbessa Specialized Hospital in Addis Ababa, Ethiopia showed that an overall mortality rate was 67.46% with 1-year overall survival rate was 63.16% . Poor survivals of CRC patients in Ethiopia is largely due to advanced stage of the disease and lack of timely treatment, and highlight the urgent need for improved access to cancer treatment in the region

Objective:

The main objective of this study was to assess the pattern and Stage at presentation of colorectal cancer in SPHMMC from Jan 1/2019-Dec 31/ 2022

Methods

Institution based cross sectional study was conducted. All patients operated from referral clinic and emergency OPD with a diagnosis of biopsy proven colorectal cancer on the study period, which fulfilled the inclusion criteria was included in the study. And data was collected from patient record and pathologic result using structured questionnaire by principal investigator and residents. After checking the completeness of data, it was analyzed using SPSS to answer the research question.

Result:

The mean age of the study subjects was 54 years, ranging between 22 and 84 years. A fourth (23.8%) was below the age of 40 years, 51.7 % were men, and 73.5% presented as an elective. The most common symptom was rectal bleeding 55.6% followed by abdominal pain (51.1%), change in bowel habit (44.0%). The study revealed mass on Digital Rectal Examination in 33.1%, signs of obstruction in 30%. The common sites of cancer were the rectum in 26.5% of cases followed by sigmoid colon (19.9%), caecum (13.9%). 39.7 % of the study subjects presented in late stage disease. More than 78 % of the patients had histologically proven adenocarcinoma. Out of 151 operated pts around 51 % LN harvested were <12 LN with average LN was 10. And tumor margin positive were 7.3 % which all were radial margin mean while the Lymph-vascular and perineural invasion was found to be 11.2% and 3.9%.

Conclusion:

56% of the patients presented with a complain of rectal bleeding and 33% of them had palpable rectal mass on Digital Rectal Examination signifying the importance of a thorough physical examination. Around 40 % of the study subjects had advanced cancer (stage III and IV) which shows a big gap on early diagnosis and referral; both at community and facility level.

In more than half of operated patients the number of lymph node harvested were less than 12 lymph nodes which are inadequate for pathological staging and it has a negative impact on proper management. Around 7.3% of operated patients were positive for surgical margins that are at risk for local recurrence and distal metastasis

Recommendations:

Colorectal Cancer is a problem of significant magnitude and as the outcome of treatment depends largely on the early detection of cases a detailed research should be done to see the factors which hamper early detection and referral of cases to the tertiary health facilities where multidisciplinary management is available..

Adequate lymph node harvesting is paramount essential for staging and subsequent managing of patients with CRC. So Operating surgeons should give a great focus on it

Attaining of margin positive surgery to the level of zero should be a target for quality improvement through the identification of best practices among general and CRC surgeons

1. Introduction

1.1 back ground

Colorectal cancer is the third most common cancer worldwide, in terms of incidence, but second in terms of mortality and an estimated 1.9 million cases of colorectal cancer and 930 000 deaths were estimated in 2020. Representing about one in 10 cancer cases and deaths, the highest incidence rates were in Northern America, Australia, New Zealand, Europe, and South Korea (1). Rates were low in Africa and South Central Asia (1). Although colorectal cancer is widely regarded as uncommon in sub-Saharan Africa, it is probably underestimated (2). There were approximately 40,400 cases in Africa in 2012, representing 3% of the global burden (3). There are no reliable figures in most countries in Africa, as less than 2% of the population is covered by high quality cancer registries (3).

In contrast to incidence, mortality from colorectal cancer in sub-Saharan Africa is considerably higher than in developed countries. The most recent reported 5-year survival rates from this region were 8.3% in Uganda and 17.4% in Zimbabwe (4,5). In contrast, more current 5-year survival rates from the United States and England and Wales were 64.9% and 58.7% (6,7)

In Ethiopia the exact number of cancer incidence or prevalence is not known. There are few papers written on colorectal cancer in Ethiopia. Tessema et al (1992-1996) reported from Tikur Anbessa hospital, Addis Ababa, 131 cases in five year time which accounted for 30 % of all GI malignancies (8).

The signs and symptoms of colon cancer are varied, nonspecific, and somewhat dependent on the location of the tumor in the colon as well as the extent of constriction of the lumen caused by the cancer. In the past 4 decades, the incidence of cancer in the right colon has increased in comparison to cancer arising in the left colon and rectum. Cancers located in the left colon are

often constrictive in nature. Patients with left-sided colon cancers may notice a change in bowel habit, most often reported as increasing constipation. Sigmoid cancers can mimic diverticulitis, presenting with pain, fever, and obstructive symptoms. Cancers in the right colon more often are manifested with melena, fatigue associated with anemia. (9–11).

While resource limitations and late presentation are the major causes of the high mortality in sub-Saharan Africa, it is likely that certain biological factors associated with aggressive tumor behavior also contribute. Colorectal cancer in sub-Saharan Africa is characterized by a high frequency of early-onset disease, often with mucinous and signet ring cell morphology (9–11).

The objective of this study was to assess the pattern, common clinical presentation, tumor site, stage and histology of colorectal cancer , number of lymph node harvested for pathologic evaluation and surgical margin status

1.2 Statement of the problem

Cancer is predicted to be an increasingly important cause of morbidity and mortality in few decades, in all regions of the world. The estimated incidence of 12.7 million new cancer cases in 2008 [3] will rise to 21.4 million by 2030, with nearly two thirds of all cancer diagnoses occurring in low and middle income countries [12]. Colorectal cancer is the 3rd most common malignant neoplasm worldwide and the 5th in Sub-Saharan Africa. And is the 3rd most commonly diagnosed cancer in males and the 2nd in females [12].

Despite this growing burden, cancer continues to receive low public health priority in Africa, largely because of limited resources and other pressing public health problems, including communicable diseases such as AIDS/HIV, malaria, and tuberculosis. It may also be in part due to a lack of awareness about the magnitude of the current and future cancer burden among policy makers, the general public, and international private or public health agencies (13).

As much as 95% of cancer patients in the African countries are diagnosed at late- or end-stage disease (14). The delayed diagnosis for these patients is due to the low level of cancer awareness between the population and the health workers, culture and constraints on access to specialized care (14).

Due to poor cancer registry in Ethiopia, the exact number of cancer incidence or prevalence is not known. Recent prospective cohort study published on 2023 in TAH showed that an overall mortality rate was 67.46% this is due to advanced stage of the disease and lack of timely treatment, and highlight the urgent need for improved access to cancer treatment (15). Therefore Institution based study like this within the country may facilitate cancer control strategic plan and will improve insight to policymaker about pattern and type of cancer.

1.3. Significance of the study

Colorectal cancer is a genetically heterogeneous gastrointestinal malignancy with variable presentation and prognosis, representing a significant cause of morbidity and mortality

worldwide. It is currently the third most diagnosed cancer and the fourth most common cause of cancer-related death [1]. According to the Global Cancer Observatory (GLOBOCAN) estimates from 2020; there were 1.9 million new cases of colorectal cancer, making up 10% of all newly diagnosed malignancies, and the tumor was responsible for 9.4% of all cancer-related deaths with high rates of late diagnosis and increased mortality in sub-Saharan Africa. Furthermore, there is an alarming uptrend in the incidence of early onset colorectal cancer (EOCRC) across the globe. There is, however, limited data available on the incidence and genetic characteristics of EOCRC from resource-poor countries, particularly Africa including Ethiopia. In Africa, CRC has emerged as a feared cause of cancer-related mortality, where it is associated with late diagnosis, younger age and rapid metastasis. (3)

There are few papers written on colorectal cancer in Ethiopia, and almost nil from this institution. So this study will assess the pattern and clinical presentation of CRC in our institution. And it also evaluates the number of lymph node harvesting for pathologic evaluation, surgical margin status. It can also act as baseline study for further research in our hospital.

2. Literature Review

Diagnosis of CRC is a rare occurrence in patients less than 40 years. Thereafter, the incidence increases sharply with every decade of life. In developed countries, the risk of colon cancer is 1 in 10 males after the 8th decade of life (16). The life time risk of sporadic CRC is 5% and it accounts for 90% of the cases diagnosed in patients above 50 years [12].

According to retrospective study from Tikur Anbessa hospital forty nine percent of the study subjects were between the age group of 40 and 60, while 36.6% were under the age of 40 years. 58% were males with M: F ratio of 1.3:1 [17]. And other study from the same institution showed a comparable result, 46% of studied cases were below age of 40 with M: F ratio 1:1 [18]. Amore recent study from the same institution revealed a 25% of the patients were below the age of 38 years, and 75% of the patients were below the age of 60 years (15)

Retrospective study from Tanzania showed that 38.3% of colorectal cancer patients were found to be below the age of 40 years and males outnumbered females by a ratio of 1.6:1. [9]. Higher figures of colorectal cancer patients aged below the age of 40 years were also reported in other studies [19, 20]. According to study from Zimbabwe which compares the demographic and pathological characteristics of colorectal cancer between Caucasians and black Africans, a higher proportion of black Africans with colorectal cancer were younger than 40 years at diagnosis compared to Caucasians [2]. Study from Pakistan also showed Early onset (<45 yr.) sporadic CRC accounted for 32% of all CRC [21]

The paper which a review of work done on colorectal cancer in Nigeria over the last 40 years shows male/female ratio of were equal, and the peak age remains around 44 years, there was also a significant subgroup of the under-30s.[22]

The study which attempted to analyze molecular, genetic, and pathological characteristics of colorectal cancer in Ghana showed that median age at diagnosis of colorectal cancer was 54 years with a range between 14 and 90 years. Of 89 subjects, 34% were diagnosed with colorectal

cancer before age 50, and 7% were diagnosed at age 50. Number of female patients was slightly higher than males with F: M 1.7:1 [23].

According to retrospective study from Tikur Anbessa hospital Of the 120 cases, 80 % presented as an elective and 20% as an emergency. Bleeding per rectum and vague abdominal pain were the leading symptoms in 63% and 54% followed by change in bowel habit (48%), weight loss (45%) and tenesmus (39 %). Palpable abdominal mass was present in 23% of patients and mass in the rectum was detected in 50% cases. Twenty four percent of the patients were found to be anemic [17].

In other study from Tikur Anbessa hospital on Clinicopathological Features and Outcomes of Sporadic Colorectal Cancer (CRC) in Ethiopian which focus on young-onset CRC showed that Young-onset patients most commonly presented with symptoms of abdominal pain 41% and rectal bleeding 18% . Emergency presentation was more common in young-onset patients with bowel obstruction was the most common clinical presentation [18]

Another recent 2023 published A prospective cohort study in TAH which was done in 209 patients revealed that 61.2% had rectal cancer, while 38.8% had colonic cancer. Nearly two-thirds of the patients had presented with bowel habit changes (constipation, diarrhea, or tenesmus) and a similar number presented with rectal bleeding. Of the 128 rectal cancer patients, 117 (91.4%) presented with rectal bleeding, and 82 (64%) had bowel habit changes. Only 20.1% of the 81 colonic cancer patients presented with rectal bleeding. (15)

The most common clinical presentation in retrospective study from Tanzania is Rectal bleeding (54.2%) Change in bowel habit (51.8%), Abdominal pain (46.1), Constipation (42.2%) Weight loss (36.7%), Anemia (29.5%), Abdominal mass (16.9%), Feeling of incomplete evacuation (10.2%) and Anal mass (9%) [9]

Bleeding per rectum was the most common complaint in 40 yr. review study from Nigeria, followed by malaise, an abdominal mass and lastly large bowel obstruction. The occurrence of large bowel obstruction ranged from 3.8% to 33% of patients. [19]

The common sites of CRC in study from Tikur Anbessa Hospital were the rectum in 48.3% of cases followed by caecum (12.5%), sigmoid colon (11.5%) and recto-sigmoid junction (10.8%). Adenocarcinoma was the most frequently reported cancer (94.8%). [16]. In another

study from the same institution revealed that rectal cancer predominance. Young-onset individuals were more predisposed to right-sided tumors (22.73% v 17.07%) and were the only cases of transverse colon involvement (5%) and multiple/synchronous tumors (4.55%). [18]

More than three-fourths (79.4%) of the patients were found to have advanced disease (stages III/IV). Of the 104 patients who underwent surgery, 53.8% were not staged preoperatively (15)

Other study from Ghana showed that Nearly 27% of all tumors were located in the proximal colon (cecum, ascending colon, hepatic flexure, transverse colon), 23% in the distal colon (descending colon, sigmoid), and 50% of tumors were in the rectum. The histologic grade of tumors was 25% well differentiated, 50% moderately differentiated, and 25% poorly differentiated. Mucinous carcinomas were found in 14% and signet ring cell carcinomas were found in 3% of cases [23]

Tanzanian study also showed left-sided tumors preponderance, especially recto-sigmoid, in this study 95% was adenocarcinomas with more than 50% histologic grade was moderately differentiated. It also showed that patients <40 years of age tended to have poor prognostic tumors such as mucinous and signet ring carcinoma. [9]

Another Study from Zimbabwe showed colonic predominance in both black Africans and Caucasians. Signet ring cell and mucinous carcinomas were more common in black patients (4% and 7%) compared to Caucasians (1% and 4%) [2]

True oncologic resection requires the removal of all lymphatic tissue in the drainage field in order to accurately stage a patient with colorectal cancer. Accurate staging determines both prognosis and whether further treatment is warranted. According to the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES), examination of a minimum of 12 lymph nodes is recommended for adequate staging. (24). the status of lymph node metastasis is a key factor for predicting the prognosis of a patient's CRC (25). With Increasing negative lymph node count has been reported to be associated with better outcomes in patients with colon cancer. (26)

According to retrospective chart review performed in Carillion Roanoke Memorial Hospital, 371 patients had open and 110 had laparoscopic colonic resections and on average, 17.85 lymph

nodes were removed during open resections and 18.91 lymph nodes during laparoscopic resections. [24]

Treatment of rectal cancer has dramatically improved over the last twenty years. During previous years surgeons and pathologists have focused mainly on distal longitudinal margin as the main parameter for anal conservation. New knowledge on the prognostic role of circumferential margin and its influence on loco-regional recurrence rate and patients' survival have led to a more standardized surgery and the definition of the total mesorectal excision concept. As a consequence the rates of positive circumferential margins and loco-regional recurrence have decreased in population studies as well as in prospective randomized trials (27). The presence of microscopic tumor cells within 1 mm of the circumferential surgical resection margin (CRM) is the endpoint most strongly associated with local recurrence in rectal cancer and doubles the risk of developing distant metastases(28,29) . Cohort study conducted in Michigan hospital revealed that the crude positive margin rate was 6.15 % (95 % CI 4.6-7.4 %) (30)

3. Objectives

3.1. General objectives

To describe the pattern and Stage at presentation of colorectal cancer in SPHMMC from Jan 1/2019-Dec 31/ 2022

3.2. Specific objectives

1. To describe the common clinical presenting of colorectal cancer
2. To describe the histologic grade and stage of colorectal cancer
3. To describe the number of lymph node harvested and surgical margin status of resected tissue

4. METHOD AND MATERIAL

4.1 Study area and study period

The study was conducted in SPHMMC, A.A, the capital city of Ethiopia, commenced rendering its referral from every corner of Ethiopia. It provides a broad range of medical services to both in and out patients of all age groups.

As such, the hospital can be designated as the most advanced medical facility, by all accounts, and is one of the largest hospitals in the country with the total capacity of about 750 inpatient beds in all departments and other specialty units. The hospital is also used as a research center. Meanwhile colorectal unit has two referral clinic and three OR table activity per week.

4.2 Study design

Cross sectional study design was used

4.3 Population

4.3.1 Source population

The source population was all patients who were seen in SPHMMC with diagnosis of colorectal ca

4.3.2 Study population

The Study population was all > 14 years old operated and biopsy proven CRC patients who were seen in SPHMMC from 1/2019-Dec 31/2022

4.3.3 Inclusion and exclusion criteria

Inclusion criteria: All operated Patients as elective and emergency based during the study period with a diagnosis of colorectal ca was included.

Exclusion criteria:

Patient without post-operative biopsy result

Patients with incomplete clinical and pathological data

Patients after neo adjuvant therapy

Benign colorectal tumors

4.4 Sampling techniques and sample size

All operated Patients as elective and emergency base with biopsy proven CRC from Jan 1, 2019- Dec 31 2022

4.5. Data collection instrument and methods

Patients who were operated as emergency and elective base with a diagnosis of colorectal ca were selected and their charts retrieved from elective and emergency procedure log book and charts was collected from pt record office and only those with biopsy proven CRC were selected and data was collected from patient card and biopsy result using structured questionnaire by principal investigator and residents.

4.6 Data quality control

The data collection instrument was pretested on 10 % of operated CRC patients who are operated as emergency and elective base prior to actual data collection to check missed information so as to make possible amendments. Selection and training of data collector was done. Checking for completeness and consistency of collected data at the end of each day was done throughout data collection period.

4.7 Data processing and analysis

After the data, completeness checked it analyzed using SPSS. Finally the data presented in tables and graphs.

4.8 Ethical consideration

Prior to data collection a formal letter of permission was collected from SPHMMC, department of surgery and forwarded to SPHMMC, administrative office to get permission for the study. Purpose and procedure of study was explained to SPHMMC, administrative office and other concerned body to avoid ambiguity. Patient's record was kept confidential

4.9. Dissemination of the result

The findings of this study will be disseminated to SPHMMC, department of surgery and finally attempt will be tried to publish it

4.10. Operational definition

Early stage of CRC: Stage I and Stage II

Late stage of CRC: Stage III and Stage IV

5. Result

5.1. LIST OF FIGURES

Fig 5.1.1: Age distribution of CRC patients

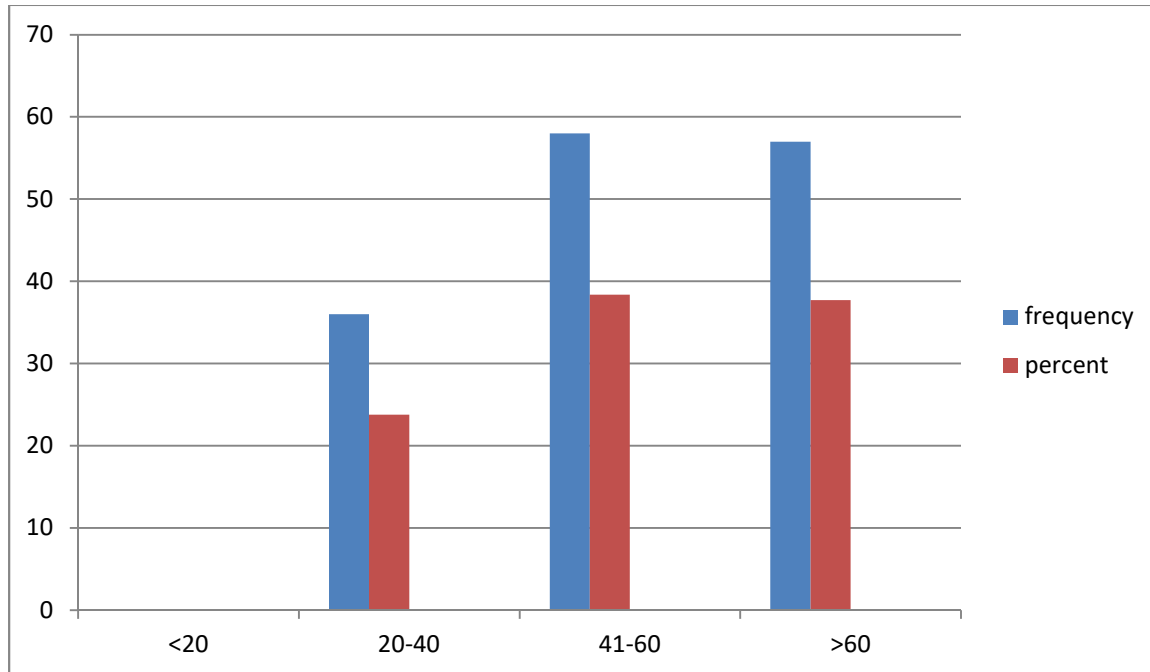


Fig. 5.1.2 site of CRC patients at presentation

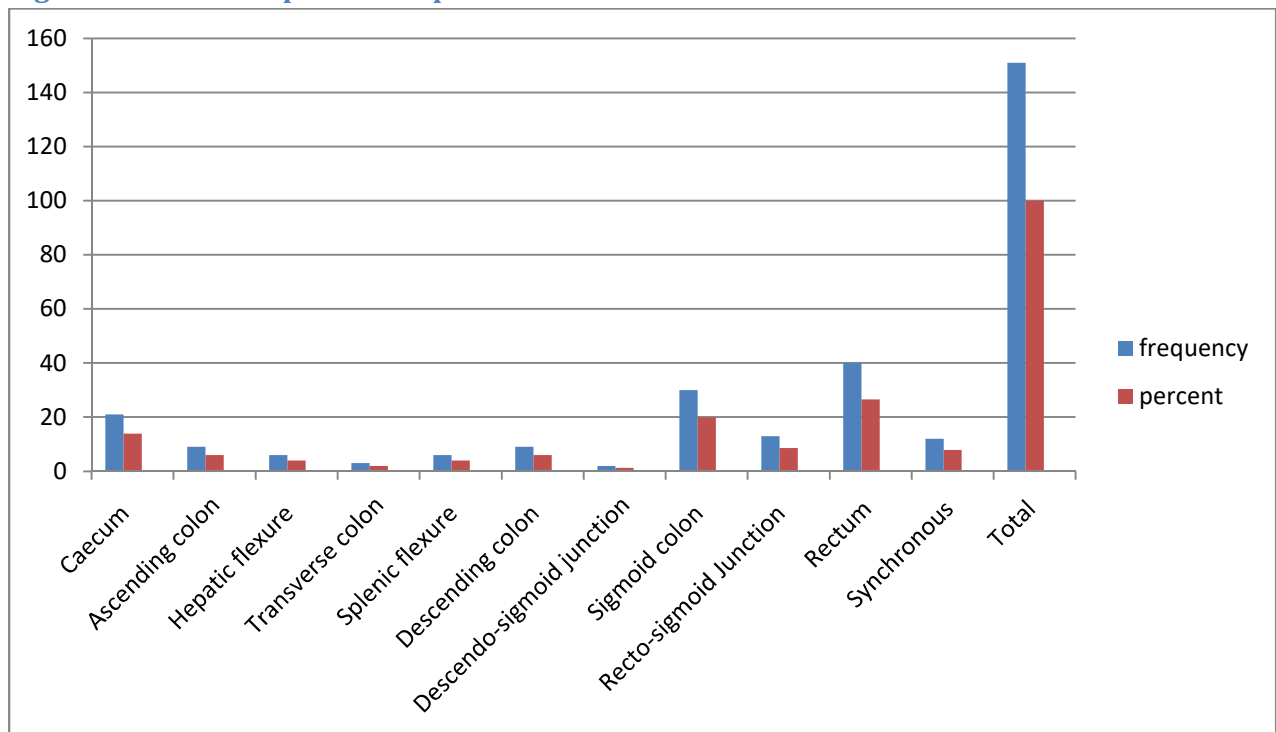
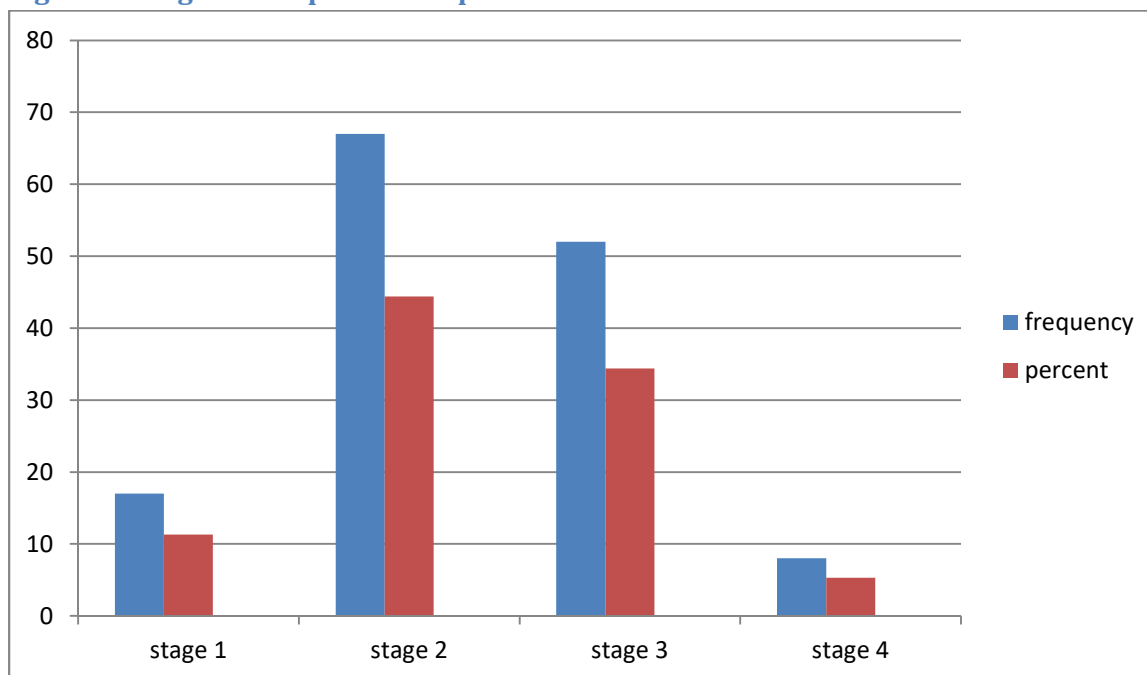


Fig 5.1.3: Stage of CRC patients at presentation



5.2. List of tables

5.2.1: Mode of Presentation

Table 1: Mode of Presentation Colorectal Cancer cases in SPHMMC from Jan 1/2019-dec 31/2022G.C

Features		Emergency Frequency (%)	Elective Frequency (%)	
Sex	Male	27(34.6%)	51(65.4%)	78(51.7%)
	Female	13(17.8%)	60(82.2%)	73(48.3%)
	Total	40(26.5%)	111(73.5%)	100%
	M:F ratio	1.06:1		
Age	<20	0	0	0
	20-40	11(44%)	25(56%)	36(23.8%)
	41-60	13(22.4%)	45(77.6%)	58(38.4%)
	>60	16(28%)	41(72%)	57(37.7%)
Total	100%	40(26.5%)	111(73.5%)	100%

5.2.2: Sign and Symptoms of CRC patients at presentation

Table 2: Sign and Symptoms of CRC patients at presentation in SPHMMC from Jan 1/2019-dec 31/2022G.C

Symptoms	frequency	Percent
Rectal bleeding	84	55.63
Abdominal pain	78	51.1
Bowel habit change	67	44.4
Wt. loss	53	35
Tenesmus	40	26.5
Obstruction symptoms	43	28.5
Abdominal Swelling	11	7
Symptom of anemia	20	13
others	18	11.9
Signs		
Mass on DRE	50	33
Presence of anemia	40	26.5
Abdominal tenderness	25	16.5
Obstruction signs	45	30
NO SIGN	38	25

5.2.3: Site of tumor

Table 3: Site of tumor in cases of colorectal cancers in SPHMMC from Jan 1/2019-dec 31/2022G.C.

		Site of tumor						
stage	Age	Right colon	Transverse colon	Left colon	Recto-sigmoid junction	rectum	synchronous	Total
Early stage	20-40	3(1.9%)	1(0.6%)	7(4.6%)	3(1.9%)	1(0.6%)	0(0%)	15(9.9%)
	41-60	5(3.3%)	0(0%)	12(7.9%)	2(1.3%)	3(1.9%)	53.3(%)	27(17.8%)
	>60	12(7.9%)	0(0%)	20(13.2%)	5(3.3%)	4(2.6%)	3(1.9%)	44(29.1%)
	Early total	20(13%)	1(0.6%)	39(25.8%)	10(6.6%)	8(5.3%)	8(5.3%)	86(57%)
Late stage	20-40	3(1.9%)	1(0.6%)	8(5.3%)	2(1.3%)	4(2.6%)	0(0%)	18(11.9%)
	41-60	4(2.1%)	1(0.6%)	13(8.6%)	3(1.9%)	5(3.3%)	2(1.3%)	28(18.5%)
	>60	4(2.1%)	0(0%)	6(4%)	0(0%)	2(1.3%)	0(0%)	12(7.9%)
	Late total	11(7.2%)	2(1.3%)	27(17.8%)	5(3.3%)	11(7.2%)	2(1.3%)	58(38.4%)
	total	31(20.5%)	3(1.9%)	66(43.7%)	15(9.9%)	19(12.6%)	10(6.6%)	151(100%)

5.2.4: Histology type and grade of colorectal cancer cases

Table 4: Histology type and stage of confirmed colorectal cancer cases in SPHMMC from Jan 1/2019-dec 31/2022G.C

Histology type	Frequency of tumor grade	Grade frequency and percent			
		Well differentiated	Moderately differentiated	Poorly differentiated	Not metioned
ADENOCARCINOMA	118(78.1%)	61(51.7%)	50(42.4%)	7(5.9%)	0(0%)
MUCINOUS	12(7.9%)	4(33.3%)	1(8.3%)	0(0%)	7(58.3%)
SIGNET RING CELL	9(6%)	0	1(11.1%)	2(22.2%)	6(66.7%)
SQUAMOUS CELL	1(0.7%)	0	0	1(100%)	0

CARCINOMA					
NEURO ENDOCRINE CARCINOMA	1(0.7%)	0	0	0	1(100%)
GIST	6(4%)	0	1(16.7%)	1(16.7%)	4(66.7%)
LYMPHOMA	2(1.3%)	1(50%)	0	0	1(50%)
MIXED	2(1.3%)	1(50%)	1(50%)	0	0
TOTAL	151(100%)	67(44.4%)	54(35.7%)	11(7.3%)	19(12.6%)

5.2.5. Number of LN for pathologic evaluation in operated CRC pt

Table 5: no of LN harvested for pathologic evaluation in operated CRC pts in SPHMMC from Jan 1/2019-dec 31/2022G.C

stage	LN>12	LN <12	Total
Stage1	11(7.2%)	6(3.9%)	17(11.3%)
Stage2	41(27.2%)	26(17.2%)	67(44.4%)
Stage 3	30(19.8%)	22(14.6%)	52(34.4%)
Stage 4	5(3.3%)	3(1.9%)	8(5.2%)
No mentioned	6(3.9%)	1(0.6%)	1(0.6%)
total	93(61.6%)	58(38.4%)	151(100%)

5.2.6: surgical margin status of operated CRC pts

Table 6: surgical margin status of operated CRC pts in SPHMMC from Jan 1/2019-dec 31/2022G.C

Stage	Type of margin	No of LN>12	No of LN <12	Total
Early	RADIAL	3(2%)	2(1.3%)	5(3.3%)
	LYMPHOVASCULAR	7(4.6%)	3(2%)	10(6.6%)
	PERI-NEURAL	2(1.3%)	1(0.6%)	3(2%)
Late	RADIAL	5(3.3%)	1(0.6%)	6(4%)
	LYMPHOVASCULAR	4(2.6%)	2(1.3%)	6(4%)
	PERI-NEURAL	2(1.3%)	1(0.6%)	3(2%)

6. Discussion

In this study we aimed to evaluate the common clinical presentation, stage, the number of lymph node harvested and margin status of resected tissue. Many studies including ours showed that younger population was frequently affected particularly in the age group between 20-60 years. The mean age our study was 54 years which is in consistency with study conducted in Ghana which was 54. 23.8% of patients were under the age of 40 years which is lower than the studies from Ethiopia (29.6%), Tanzania (38.3%) 9, 15. But it is higher than from the study conducted in North America and Europe (7%) 21. In this study a slight male predominant was seen with a male to female ratio of 1.06:1 which is slightly lower than the study conducted in Tikur Anbessa, which was 1.3:1 and 1.6:1 (9, 17). But almost the same ratio with another study in Tikur Anbessa and Nigeria w.c was 1:1 (18, 22). On the contrary study from Ghana revealed slightly female predominant 1:1.4 (23). The reason for gender disparity might be both genetic and environmental factors such as diet, hormonal exposure, reproductive history or willingness to seek medical help. Common clinical presentations were bleeding per rectum, abdominal pain, bowel habit changes, weight loss, and palpable rectal mass on digital rectal examination which is in line with study conducted in Tikur Anbessa and other studies in Africa 9, 15, 17, 18, 19. Majority (73.5%) of the cases were operated on elective bases similar to the studies from Tikur Anbessa 17, 18.]. Left side CRC (66.3%) is a bit lower than that of Tikur Anbessa and Ghana w.c were 73.6% and 73%, (17, 23). This distribution further falls down for western countries where there is clear change in distribution from left to right (9-11). The reason for this anatomical difference among these countries is not clear. Adenocarcinoma was the commonest histology type (78.1%), this is lower than to study conducted in Tikur Anbessa hospital by Tesema and Zemenfes and study from Ghana, Tanzania which were 92%, 92%, 100%, 95% (8, 9, 17, 23). Out of the 118 patients with adenocarcinoma the most common histologic grade was well differentiated (51.7%) followed by moderately differentiated (42.4%) and poorly differentiated (5.9%) unlike the study conducted in Ghana which the most common histologic grade was moderately differentiated (50%) 23. Mucinous and signet ring cell were 7.9% and 6% which are higher than from the study conducted in Zimbabwe and Ghana (2, 23). When we see the pathological stage of operated patients it was 11.3%, 44.4%, 34.4%, and 5.3 % for stage I, II, III, IV. And a late stage account 40% which is similar with the study conducted by Zemenfes where late stage is 47% (17) but significantly lower than with study conducted in the same institution which was 79% (15). Late presentation

in our series could be due to lack of awareness, low level of education, and lack of accessibility to health care facilities , low degree of suspicion for pts came with GI complain which could be an area of future research. As most of the tumors in our series were located in the rectum, digital rectal examination could have picked some of them and further delay might have been prevented. Therefore the role of digital rectal examination in adult patients coming with bloody and or mucoid diarrhea cannot be overemphasized. Early diagnosis is important as delay in diagnosis may lead to dismal outcome. Identifying and controlling the risk factors of colorectal carcinoma can minimize prevalence, death rate and also the cost of treatment

The status of lymph node metastasis is a key factor for predicting the prognosis of CRC patient's. Increasing negative lymph node count has been reported to be associated with better outcomes in patients with colon cancer. In our study around 51% of harvested lymph nodes were less than twelve lymph Nodes, with the average lymph Nodes were ten this is lower than with study conducted in Carillion Roanoke Memorial Hospital, where the average lymph Nodes removed were 17.85 and 18.9 with open and laparoscopic tumor resection (24)

In our study the surgical margin positive are 7.3% and all are radial margin. this is slightly higher than with study conducted by Michigan Surgical Quality Collaborative (MSQC) which were 6.15 % (95 % CI 4.6-7.4 %) ;(30) The presence of microscopic tumors cells within 1 mm of the circumferential surgical resection margin (CRM) is the endpoint most strongly associated with local recurrence in rectal cancer and doubles the risk of developing distant metastases (28, 29) in our study the Lymph-vascular and perineural invasion are found to be 11.2% and 3.9%

7. Limitation of the study

The small sample size has made it difficult to see the significance of some of the statistics; in addition as the data is collected from chart important data may be unrecorded. Hence it is a cross sectional study: cause and effect cannot be established. As the study is conducted in operated pts CRC w.c excludes biopsy proven un-operated pts it makes difficult to generalize the research findings.

8. Conclusion

A fourth of CRC patients were below forty with two third CRC patients were below the age 60 years with mean age of 54 years and 51% were men. Fifty six percent of the patients presented with a complain of rectal bleeding and thirty three percent of them had palpable rectal mass on Digital Rectal Examination signifying the importance of a thorough physical examination.

Around 40 percent of the study subjects had advanced cancer (stage III and IV) which shows a big gap on early diagnosis and referral; both at community and facility level.

In fifty one percent operated patients the number of lymph node harvested were less than twelve lymph node with average lymph node harvested ten lymph node s which is inadequate for pathological staging and it has a negative impact on proper management . Around 7.3% of operated patients were positive for surgical margins that are at risk for local recurrence and distal metastasis

9. Recommendation

Symptoms like blood in stool, abdominal pain, weight loss, altered bowel habits and anemia should not be taken lightly and should be properly investigated. For All pts with rectal bleeding we should do digital rectal examination

There should be capacity Building training for health care providers on early identification and referral of cases generally at national level through different media to increase care seeking behavior for improved outcome.

A fourth of patients were below the age of forty so the cut of age for screening protocol should be revised

There should be proper documentation of data at all levels so as to use for future research, advocacy purpose and informing policy makers.

Further research should also be done to identify determinant factors of CRC

Adequate lymph node harvesting and surgical free margin rates should be a target for quality improvement through adopting best practices among general and CRC surgeons

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