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A Two- year review of Colorectal Cancer at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia

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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. Although data from Ethiopia is unavailable, a recent report from Global cancer statistics center shows an increasing incidence in the sub-Saharan Africa which is also our observation. The objective of this study was to assess the hospital prevalence, common presenting symptoms, common presenting signs, site, stage and histology of colorectal cancer.***

Methods: ***A retrospective cross-sectional study design, by reviewing of patient records collected from 2010 to 2011was used. Patient card numbers with colorectal and anal cancer were retrieved from registry log book in the department of surgery. Individual patient card was retrieved from the hospital record office. A total of 120 out of 142 patient cards were included in the study. Data were entered using epi-data, version 3.0 and was analyzed using SPSS for windows version 21, and descriptive data analysis using frequency was made to answer the research question.***

Results: ***The mean age of the study subjects was 47 ± 16 years, ranging between 18 and 83 years. A third was below the age of 40 years, 58% were men, nearly half came from Addis Ababa, and 20% presented as an emergency. Study subjects presented with rectal bleeding (63.0%), abdominal pain (54.3%), weight loss (44.9%), tenesmus (39.4%), change in bowel habit (48.0%) and symptoms of obstruction (17.3%). The study revealed mass on Digital Rectal Examination in 50%, anemia in 24.4%, abdominal mass in 22.8% and signs of obstruction among 11.8% of patients. The common sites of cancer were the rectum in 48.3% of cases followed by caecum (12.5%), sigmoid colon (11.5%) and recto-sigmoid junction (10.8%). More than half of the study subjects had stage III to IV disease. More than 94% of the patients had histologically proven adenocarcinoma. Thirty four percent of the cases had either inoperable or unresectable tumor indicative of delayed presentation. The hospital mortality was 8.0%.***

Recommendation: ***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.***

Introduction

Cancer is the leading cause of death in the West and the second leading cause of death in developing countries[1]. It is estimated that Cancer will become the cause of over 13 million deaths a year by 2030 in countries where traditionally the biggest problem were infections. According to Global Cancer Statistics, the number of new cases with colorectal cancer rose from 12.7 million in 2008 to 14.1 million by the year 2012. Colorectal cancer is the 3rd most common malignant neoplasm worldwide and the 5th in Sub-Saharan Africa. Colorectal cancer is the 3rd most commonly diagnosed cancer in males and the 2nd in females[2]. The life time probability of colorectal cancer diagnosis is 4.1% in women and 5% in men[3]. The crude incidence of colorectal cancer in Sub-Saharan Africa for both sexes was found to be 4.04 per 100,000 populations (3.69 for women and 4.38 for men) with 1.2:1 male to female ratio[4]. There are few papers written on

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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[5].

The objective of this study was to assess the hospital prevalence, common presenting symptoms, common presenting signs, site, stage and histology of colorectal cancer.

Patients and Methods

Retrospective cross sectional study design was used. All colorectal cancer cases seen in 2010-2011 were considered eligible for inclusion. Medical record numbers of colorectal and anal cancer cases were retrieved from log book in the department of surgery. Using the medical record numbers, individual patient card was retrieved from the hospital record office. Surgical residents were involved for data collection. Data were collected using a structured questionnaire. A total of 120 out of 142 patient cards were included in the study. Data were entered using epi-data, version 3.0 and was analyzed using SPSS for windows version 21, and descriptive data analysis using frequency was made to answer the research question. Proportion and Chi square were used as appropriate.

Results

There were 142 patients in two years' time but the records of only 120(86%) patients could be retrieved for analysis. 69 (58%) were males with a male to female ratio of 1.3:1. Fifty six (49%) of the study subjects were between the age group of 40 and 60, while 44(36.6%) were under the age of 40 years. Sixty one (50.4 %) of the patients were from the capital, Addis Ababa (Table 1).

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, weight loss and tenesmus in 48%, 45% and 39 % respectively. Palpable abdominal mass was present in 29(23%) of patients and mass in the rectum was detected in 60(50%) cases. Twenty four percent of the patients were found to be anemic (Table 2). As demonstrated on Table 3, 48.3% of the tumors were located in the rectum. The sigmoid and the recto sigmoid junction were seats of tumor in12.5% and 10.8% respectively. Hence sigmoid, rectosigmoid and rectum combined were the commonest (71.6%) sites involved in this study.

Adenocarcinoma (94.8%) was the most frequently reported cancer. Of the 92 cases whose pathological stage of the tumor was documented only 8.7 % had stage I disease. It is worth noting that significant proportion (41.5%) of the cases had stage II disease which is amenable for curative surgery. The remaining 16.3 % and 31.5% of the cases were stage III and IV cancers respectively which are late stages (Table 4).

According to this study Anterior and Low Anterior Resection combined with Abdomino-Perineal Excision (38%) were the commonly performed procedures among the elective cases which correlate to the frequently encountered tumor site. Twenty percent of the tumors were unresectable while 12.5% inoperable. Only 38(65.5%) patients of the rectal cancer cases had tumors amenable for resection while the remaining 20 (34.4%) were either unresectable or inoperable. (Table 5)

Age, sex and place of residence were analyzed with site of tumour and stage of disease; and there was no significant association which may be attributed to the small sample size.

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Table 1. Socio-demographic characteristics of colorectal cancer cases in Tikur Anbessa Hospital (TAH), 2010-2011

Features		**Frequency**	**Per cent**
Sex	Male	69	58%
	Female	51	42%
	Male: Female	1.3:1	
Age	less than 20	5	4%
	20- 40	39	32%
	41-60	56	49%
	61 and above	20	17%
Address	Addis Ababa	61	50.8%
	Out of Addis	59	49.2%

Table 2. Mode of Presentation 120 Colorectal Cancer cases to TAH, 2010-2011

Presentation	**Frequency**	**Percentage**
Elective	96	80%
Emergency	24	20%
Symptoms		
Rectal bleeding	80	63%
Abdominal pain	69	54%
Bowel habit change	61	48%
Wt. loss	57	45%
Tenesmus	50	39%
Obstruction	22	17%
Abdominal mass	16	13%
Symptoms of anaemia	6	5%
Signs		
Mass on DRE	60	50%
Presence of anaemia	31	24%
Abdominal mass	29	23%
Obstruction	15	12%

Table 3. Site of tumour in cases of colorectal and anal cancers in TAH, 2010-2011

Site of tumour =120	**Frequency**	**Per cent**
Caecum	15	12.5
Ascending colon	1	0.8
Hepatic flexure	7	5.8
Splenic flexure	4	3.3
Descending colon	7	5.8
Sigmoid colon	15	12.5
Rectosigmoid Junction	13	10.8
Rectum	58	48.3

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Table 4. Histology type and stage of confirmed colorectal cancer cases in Tikur Anbessa Hospital, 2010-2011

Histology Type No=97	**Frequency**	**Percent**
adenocarcinoma	92	94.8
Carcinoid	2	2.1
Lymphoma	1	1
Maltoma\ MALT LYMPHOMA	1	1
Sarcoma	1	1
Stage No=92		
I	8	8.7%
II	40	41.5%
III	15	16.3%
IV	29	31.5%

Table 5. Type of surgery for 102 elective Vs 25 emergency cases in TAH 2010-2011

Type of Surgery	**Elective**	**Emergency**	**TOTAL**
Right Hemicolectomy	6	2	8
Extended right Hemicolectomy	5	1	6
Left Hemicolectomy	8	4	12
Sigmoid Resection	6	1	7
AR + primary anastomosis	5	1	6
LAR +primary anastomosis	8	1	9
LAR +Colostomy	2	-	2
APR	24	-	24
Operated, advanced unresectable tumor	16	7	23
Inoperable advanced (EUA)	8	6	14
Hartmann's colostomy	4	1	5
Others	4	0	4
TOTAL	**96**	**24**	**120**

Discussion

Although prevalence could not be determined due to the limitation of data, it seems that there is an increasing trend of colorectal cancer cases based on this study which showed 142 cases in just two years compared to previous study from the same institute by Tessema et al[5] which reported 131 cases over 5 years' time. Increased awareness and improved access to health service might play a role in increasing the number of colorectal cancers seen, however this may

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not be the sole explanation as this might as well be due to the change in life style of the population as a whole since this has also been witnessed in other researches from Africa [6, 7, 8].

The mean age of the study subjects was 47 ± 16 years which is in consistency with the findings of Tessema et al, Senait and a study from Tanzania which were 47, 47 and 46 years respectively[5,7, 9]. However, it is in great dissimilarity with reports from developed world where elderly populations dominate the picture[10].

Thirty six percent of patients were under the age of 40 years which is in line with the studies from Ethiopia, Nigeria and Tanzania[5,6, 7, 8, 9], but in clear contrast with a study from the west, which reported a much lower prevalence of 2 to 6% among this age group[11]. This needs further study to determine why this significant difference is seen between the two geographic locations in terms of disease distribution.

In this study a slight male preponderance was seen with a male to female ratio of 1.3:1 which is similar to a study done in Tanzania[7] where the ratio is 1.6:1;this is unlike studies from the West where the male to female ratio is 1:1 with a very little male preponderance for Rectal cancer[10]. According to this study the major clinical features were rectal bleeding, change in bowel habits, abdominal pain and palpable rectal mass on digital rectal examination which is in line with the previous report from the same hospital and other studies in Africa [5, 6, 7, 8].

Majority (80%) of the cases were operated on elective bases similar to the study from Tanzania where 86.5% of the study subjects were operated as an elective[7]. On the other hand Hwang from Vernon Jubilee hospital, Canada reported that 43% of his patients presented as an emergency with obstruction (59%), perforation (9%) and haemorrhage (34%)[12]. Obstruction was the sole cause of emergency admission in our study.

The combined involvement of the Sigmoid and rectum (71.6%) is a bit higher than that of Lagos[13] and Tanzania[7] whose report shows 54.8%. This distribution further falls down for western countries where there is clear change in distribution from left to right[14]. The reason for this anatomical difference among these countries is not clear.

Adenocarcinoma was the commonest histology type (94.8%), this is similar to studies conducted by Tessema et al[5] (92%) from Ethiopia and studies from Tanzania and Nigeria which revealed 98.8% and 84.1% respectively [7, 15]. Only 92 patients had a complete pathological diagnosis with only 8.7% presenting as stage I tumour which is in accord with the studies from African set up (16). In this study, lymph node metastases (stage III) were relatively less (16.3%) compared to distant metastasis (31.5%) which was mainly liver metastasis. This is in agreement with the previous report from the same hospital by Tessema et al[5]. However, it is in contrast with Chalya et al[7] the finding from Tanzania where lymph node and distant metastases were encountered in 30.4% and 24.7% respectively. A similar metastatic pattern to that of Chalya et al[7] was reported by Yawe et al[17] in Nigeria. The advanced stage definitely makes the chance of cure gloomy whatever means of treatment we utilize. The domination of hematologic route for distant metastases in our set up is yet to be clarified.

The Fact that 32.3% of our patients were either inoperable or had unresectable tumour tells that there was a significant delay in presentation which is similar to the report from Tanzanian[7]. The figure rises to 37% when rectal cancer was considered separately. Late presentation in our series could be due to lack of awareness, low level of education, and lack of accessibility to health care facilities which could be an area of future research. Some of the cases were being treated as parasitic disease which further added to the delay. As most of the tumours in our

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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 diarrhoea cannot be overemphasized. Early diagnosis could have avoided Abdominoperineal resection with permanent colostomy in some of the patients.

Surgery continues to be the primary treatment option for colorectal cancer patients and resection has been the standard procedure for cancers primarily localized to the colon and rectum[16]. Complete resection of colorectal cancer with excision of adjacent lymph nodes is the only chance of cure in early stage cancer[18]. Some 50.2% of our patients had either stage I or II cancers who were candidates for surgery with curative intent. This figure was 33% for the previous study in the same set up by Tessema et al[5] which may show that there is some improvement in early diagnosis. However, it is difficult to tell if this is due to increased awareness from the patients' side, improved diagnostic facility in the institution or a mere chance.

Limitation of the study

The small sample size has made it difficult to see the significance of some of the statistics; in addition the data were incomplete from patient medical record. As the study relies on the accuracy of written record important data was not available. Since Tikur Anbessa University Hospital is a tertiary hospital with the only oncology service in the country advanced cases are more likely to be referred here hence the findings may be difficult to generalize. As a cross sectional study: cause and effect cannot be established.

Conclusion

About two third were above 60 years with mean age of 47 years and 58% were men. Fifty percent of the patients presented with a palpable mass on Digital Rectal Examination signifying the importance of a thorough physical examination. Nearly half 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.

Recommendation

Build the capacity of health care providers on early identification and referral of cases, and also improve the capacity of the health facilities by availing the much needed diagnostic tools. Create awareness among the community through different media to increase care seeking behavior for improved outcome. 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 colorectal cancer.

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References

1. Alice Graham, Davie Adeloye, Liz Grant, Europi Theodoratou, Harry Campbell Estimating the incidence of colorectal cancer in Sub-saharan Africa. Journal of Global Health; December 2012 vol.2 No 2 020404 pp1-14
2. AhmedinJemal, Freddie Bray, Melissa M. Center, Jacques Kerlay, Elizabeth Ward, David Forman , Global Cancer Statstics, CA Cancer J Clin 2011;61:69-90
3. Rebecca Siegel, Carol DeSantis, AhmedinJemal Colorectal Cancer statstics. CA Cancer J Clin 2014;64:104- 117
4. Alice Graham, Davies Adeloye, Liz Grant, EvropiTheodoratou Harry Campbel: Estimating the incidence of colorectal cancerin sub-Saharan Africa: Asystematic analysisJ Glob Health. 2012 Dec; 2(2):20404. doi: 10.7189/jogh.02.020204
5. T. Ersumo, A Ali andO. Johnson Cancer of the lower GI tract: a five year experience in Ethiopia East Afr Med J 1998,Vol.75 No. 6; 342-346
6. David M. Irabor. Colorectal Carcinoma: Why is there a lower incidence in Nigerians when compared to Caucasians?, Jounal of cancer epidemiology Vol 2011, article ID675154
7. Philipo L Chalya,Mabula D Mchembe, Joseph B Mabula, Peter F Rambau, Hyasinta J, Mheta K, Eliasa M, and NestoryM: Clinicopathological patterns and challenges of management of colorectal cancer in a resource limited setting: a Tanzanian experience. World Journal of surgical Oncology 2013, 11:88
8. T. Ersumo Colorectal adenocarcinoma in young persons: a review of 40 cases. East and cent Afri J of Surg vol. 5 No 1; 43-46
9. Ashenafi S: Frequency of Large bowel cancers as seen in Addis Ababa University, Pathology Ethiop med j 2000, 38(4): 277-282
10. Michael RB, Keighley Norman, S. Williams Surgery of the anus Rectum and Colon Third edition , 2008 vol. 1;p 980
11. Mitry E, BenhamicheAM, Jouve JL, Clinard F, Finn-Faivre C, Faivre J: Colorectal adenocarcinoma in patients under 45 years of age: comparison with older patients in a well-defined French population. Dis colon Rectum 2001, 44(3):380-387
12. Hamish Hwang Emergency presentation of colorectal cancer at a regional Hospital: an alarming trend? BC Medial journal 2012; Vol 54 No. 2
13. Guillem JG, Puig-La Caller Jr,J,CelliniC, Murray VM, Ng J,Fazzari M, Paty PB: Varying features of early age-of-onset "sporadic" and hereditary nonpolyposis colorectal cancer patients. Dis Colon Rectum 1999,42: 36-42
14. Takada H, Ohsawa T, Iwamoto S, Yoshida R, Nakano M, Imada S, Yoshioka K, Okuno M, Masuya Y, Hasegawa K, Kamano H, HiokiK, Muto T, Koyama Y,: Changing site distribution of Colorectal cancer in Japan. Dis Colon Rectum 2002, 45; 1249- 1254
15. Ponz De Leon M, Marinom, Benatti P, Rossi G Menigatti M, Pedroni M, Di GrigarioC, Losi L, Borghi F, Scarselli A, Ponti G, Roncari B, Zengardi G, Abati G, Ascari E: Trend of incidence, Sub-site distribution and staging of colorectal neoplasm in the 15-year experience of a specialized cancer registry. Ann Oncol 2004, 15; 940-946
16. Cunningham D, Atkin W, Lenz HJ, Lynch HT, Minsky B, NordlingerB, Starling N: Colorectal cancer. Lancet 2010, 375: 1030-1037
17. Yawe KT, Bakari AA, Pidiga UH, Mayun AA: Clinicopathological pattern and challenges in the management of colorectal cancer in sub-Saharan Africa. J Chinese Clin Med 2007, 2:688-695.
18. National comprehensive Cancer Network: NCCN Clinical practice guidelines in oncology: colon cancer. V.2.2010.2010.