Colonic Pathology in Nairobi, Kenya: A review of colonoscopic and HistopathologicaL Profiles of 418 patients

Lodenyo H[1], Rogena E[2, 3], Sitati[3]

1. Kenya Medical Research Institute
2. University of Nairobi
3. Diagnostic and Medical Legal Laboratory, Nairobi

SUMMARY

<u>BACKGROUND</u>: **Symptoms of digestive disorders are among the most common causes of consultations to health workers worldwide. But from Sub-Saharan African there is a shortage of information on morphological profiles, morbidity, mortality and epidemiology of digestive disease.**

The aim of this study was to do a retrospective analysis of records on colonoscopic findings and histological examination of patients evaluated between 2005 and 2011 with aim of establishing the profiles and characteristics of colonic lesions seen in Kenya.

<u>METHODOLOGY</u>: **Records of patients sent for colonoscopy in a busy private clinic were reviewed retrospectively. The records reviewed included patients demographic data, appearance of colon at colonoscopy and histological findings of biopsied samples.**

The records were retrieved from the clinic and the laboratory files and entered into an EXEL spread sheet. The data was cleaned and analyzed using SPSS Version 17. The patients had been referred from both public and private hospitals countrywide.

<u>RESULTS</u>: **Four hundred and eighteen patients were seen over the 6 years; 247 male and 171 female (ratio 1.4:1) mean age for the entire group population was 45± 20 years. Of these 10.8% were normal, 51.9% were non-specific colitis, 12.7% Adenocarcinoma, 9.3% Ulcerative colitis and 7.7% amoebic colitis. Well differentiated adenocarcinoma was the commonest neoplasm, the most frequent histopathological pattern in this category.**

<u>CONCLUSION</u>: **Ulcerative colitis and Amoeabic colitis and cancer of the colon are frequent and appear to be on the increase.**

Introduction

Flexible endoscopic examination of the colon has become the standard method of colonic mucosal examination in diagnosis and disease therapeutic interventions. Diseases once thought to be rare in Africans are becoming more frequently diagnosed, sometimes rather late after the patients have

undergone a lot of suffering because of a low index of suspicion and hence delayed colonoscopic evaluation.

Symptoms of digestive disorders are among the most common causes of consultations to health workers worldwide. But from Sub-Saharan Africa there is a shortage of information on morbidity, mortality and epidemiology of digestive diseases. The literature on the patterns of upper gastro-intestinal conditions in Africa is slightly more though many diseases such as non-ulcer dyspepsia remain uninvestigated. The literature on diseases of the lower digestive tract is even more limited.

Inflammation of the colon is a major cause of abdominal pain and rectal bleeding. Inflammation may be due to physical damage such as irradiation or specific immunologic sensitivity such as lactose intolerance. Infection and ischaemia are other important causes of colitis. Bowel inflammation of unknown cause commonly referred to as inflammatory bowel disease and non-specific colitis are also common (1).

Colorectal cancer (CRC), the third most prevalent cancer worldwide (2) was once thought to be uncommon in Africa (3). However, experience now suggests its occurrence is on the increase in African populations (4).

Endoscopic studies are of great value in diagnosis and assessment of inflammatory bowel disease, non-inflammatory bowel disease ulcerating conditions, infectious bowel disease and detection of polyps, dysplasia and carcinoma.

In the belief that digestive disease patterns are changing in developing geographic regions, we decided to conduct a retrospective analysis of records on patients seen in a busy gastroenterology clinic in Nairobi for a period of six (6) years 2005 to 2011.

The aim was to do a retrospective analysis of records on macroscopic and histological findings during colonoscopic examination of patients evaluated between 2005 and 2011.

Methodology:

A retrospective review was conducted on records of patients sent for colonoscopy in a busy outpatient clinic in Nairobi. The records reviewed included patient demographic data, appearance of colon at colonoscopy and histological findings of biopsied samples. The patients came from all parts of the country and were referred from both public and private hospitals and clinics.

Data Management

Data was entered using Microsoft EXEL software. Range checks and missing data were checked and corrected appropriately. Descriptive analysis and statistics (standard deviation, means, medians and range) were calculated using SPSS version 17.0 for software. Outputs are presented in form of tables and bar charts shown in the results.

Results:

Four hundred and eighteen patients were seen over the 6 year period; 247 were males and 171 females (male to female ration of 1.4:1). Mean age ±SD for the entire group population was 45 ± 20 years. The range was 6 − 106 years

168

Figure 1: Age distribution of the study patients who had biopsies taken and examined (both sexes)
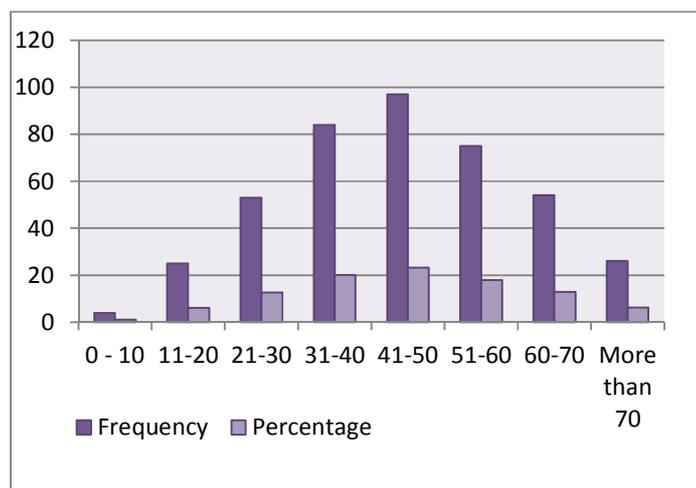
Most patients were in the 30 – 60 years age group

Table 1: Histopathological profiles from the biopsies submitted.

	Condition	Frequency	% of Total
1	Colitis non–specific	217	51.9
2	Malignant Neoplasims	54	12.9
	(i) Sarcoma	1	0.2
	(ii) Adenocarcinoma	53	12.7
3	Normal	45	10.8
4	Colitis – ulcerative	39	9.3
5	Colitis amoebic	32	7.7
6	Polyps		
	- Mild to moderate dysplasia	19	4.5
	- Severe dysplasia	5	1.2
7	Others	7	1.7
	Total	418	100

Inflammatory bowel disease is still only ulcerative colitis and amoebic colitis still remains common

**Figure II: Conditions seen between 2005 – 2010, compared with 2011 alone**
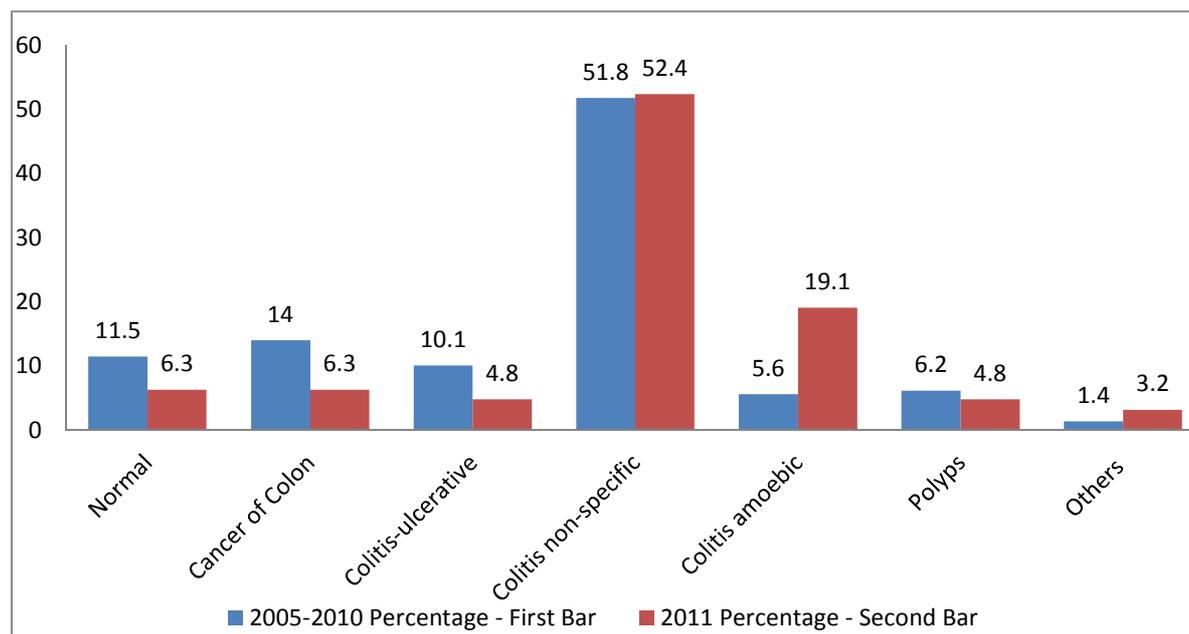
Amoebic colitis appears to be on the increase

Table 2: Condition by gender

| Condition	Male	Female	Total
Normal	30 (12.1%)	15 (8.8%)	45
Neoplastic lesions	31 (12.6%)	23 (13.5%)	54
(i) Poorly differentiated	3 (1.2%)	0 (0%)	5
(ii) Well differentiated	27 (10.9%)	23 (13.5%)	50
(iii) Sarcoma	1 (0.4%)	0 (0%)	1
Colitis ulcerative	24 (9.7%)	15 (8.8%)	39
Colitis non–specific	117 (47.4%)	100 (58%)	217
Colitis amoebic	20 (8.1%)	12 (7%)	32
Polyps with mild to moderate dysplasia	15 (5.7%)	4 (2.3%)	17
Polyps with severe dysplasia	5 (2.0%)	0 (0%)	5
Others	5 (2.0%)	2 (1.2%)	7
Total	247	171	418

Figure 3: Cancer of the Colon: Distribution by age-group
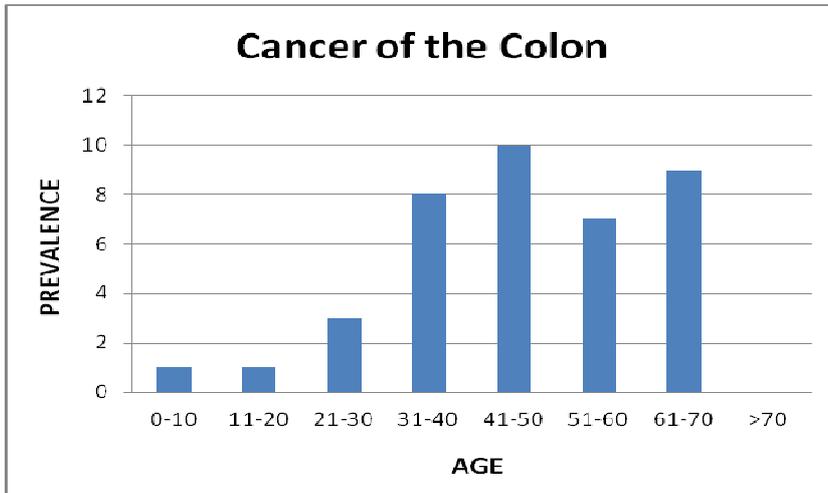
Cancer of the colon appears to start early in our patients.

Figure 4: Ulcerative Colitis: Distribution by age-group
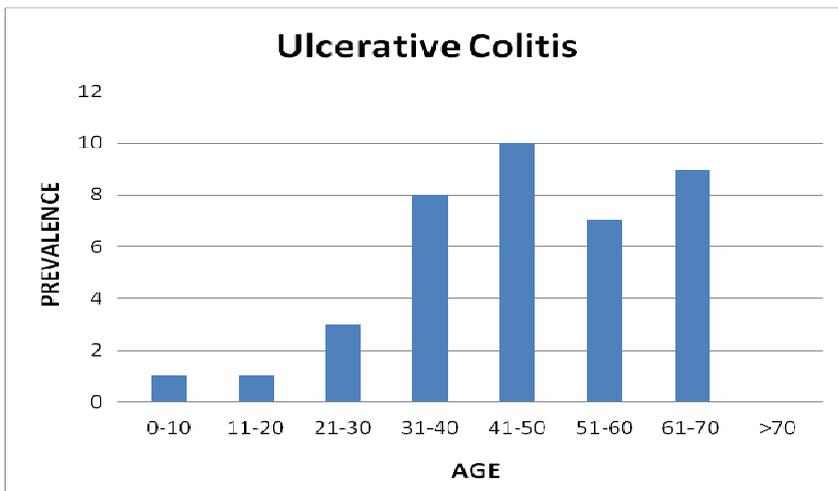
Inflammatory bowel disease (uc) is largely a middle age disease in our patients.

Discussion

Inflammatory bowel disease was rare in Africa before 1990 (5). Reports from over 75 mission hospitals in 24 Sub-Saharan African countries showed that out of over a million people seen about 13,000 presented with bloody diarrhoea but only 22 cases of inflammatory bowel disease were diagnosed. This is in contrast to 12 patients out of 165 seen by Proffesor Ogutu in Kenyatta National Hospital in 1996 – 1998 (7.3%) (14)and 9.3 % in our study suggesting a steady increase in ulcerative colitis. Crohn's disease still remains rare in our setting. Studies from Sudan also show ulcerative colitis is still more common and affects more males than female, a pattern seen in

171

Sudan and rural India as well (7). This pattern is also seen in our study as shown in Table 2. Colorectal cancer was also considered to be rare in rural Africa. However, in a ten year review from West Africa, data, appearance of colon at colonoscopy and histological findings of biopsied samples at histopathology from Nigeria and Ghana as shown by Iliyasu et al in Ibadan and Dakubo et al in Accra respectively showed that is (8,9) colorectal carcinoma appears to be not so rare. Ogutu's study in Nairobi and our study also show that colorectal cancer appears to be on the increase. However, its prevalence still appears to be low compared to developed societies (10). However, it does not seem to be influenced by racial factors (11). Mean age of presentation remains between 40 – 50 years. Inflammatory bowel disease which is also becoming common also predisposes to colorectal cancer (12).

Colonic adenomatous polyps were rare in black Africans up to as late as 1998 as reported by Sega from Baragwanath (13). However, Ogutu's study and ours show that their prevalence is on the increase. The majority of cases occur after the age of 30 years (Figure 3) though all age groups are from second decade of life are affected.

Majority of our patients had non-specific colitis (52%). The non-specific colitis tended to affect more women (85%) than men (47.4%) while polyps appear to be more common in men (7.7%) than in women (2.3%). Non-specific colitis was also common 10 years ago as reported by Ogutu. Histopathological diagnosis of Non-specific colitis may not conclusively exclude a unconfirmed infection or drug reaction

Our reports show an apparent increase in amoebic colitis from an average of 5.6% from 2005 – 2010 compared to 19.1% in 2011. This maybe due to changing patterns of amoebiasis in HIV infection or due to contamination of our water sources or emerging resistance to *E.histolitica* to commonly used medications for treatment. Our data also shows that most of the conditions occurred in equal proportion in both gender as shown in Table 2

These results show that conditions that were thought to be rare in Kenya are increasingly being seen and appear to be on the increase when data of 2005 – 10 is compared with that of 2011 and study by Ogutu.

The patients came from all parts of the country and were referred from both public and private hospitals and clinics.

Conclusion

Ulcerative colitis, amoebic colitis and cancer of the colon are common and are gradually increasing as well. High index of suspicion is needed by clinicians in order to facilitate early detection and appropriate treatment.

References:

1. O'Morain C., Tobin A., Lee E., Suzuki Y. and O'Riordan T., Criteria of Case Definition of Crohn's Disease and Ulcerative Colitis. *Scand J. Gastroenterol* 1989; (**Suppl. 170**) 7 – 11.

2. Redaeli A., Cranor W. C., Okano G. T., Reese P. R., Screening Prevention and Socio-Economic Costs associated with the

treatment of colorectal cancer . *Pharmaco-economics* 2003; **21**: 1213 – 1238.

3. Lennard –Jones. Classification of inflammatory bowel disease. *Scand J. Gastroenterol* 1989; **(suppl. 170)** 2 – 6.

4. Mayberry J, Mann R
Inflammatory bowel disease in Rural Sub–Saharan Africa: Rarity of diagnosis in patients attending mission hospitals. *Digestion* 1989; **444**:172–6.

5. Van Hal SJ Start DJ, Rotedar R, Marriot D. Ellis J. T; Harkness J. L.
Amoebiasis: Current status in *Australia Med. Journal* Aust. 2007; **186**:412–6.

6. Khalifa S. El, Mudawi Hon, Fedail S. S. Presentation and Management of Inflammatory bowel disease in Sudan
Trop Gastroenterol 2005:26: 194 – 6. Digestion 1990; **47**:42–6.

7. Probert CSJ., Mayberry JF., Mann R., Inflammatory bowel disease in rural indian sub–continent: a survey of patients attending mission hospitals. *Digestion* 1990; **47**:42–6

8. Iliyasu Y, Ladipo J. K., Alcang E. T, Adebamono C. A, Ajao Oti, Aghadiuno P. U. A twenty year review of malignant colorectal neoplasms at University College Hospital, Ibadan, Nigeria Dis. *Colon Rectum* 1996; **39**:536–40.

9. Dakubo J. C, Naaeder S. B, Yettey Y, Gyasi R. K.
Colorectal carcinoma: an up–date of current trends in Accra.
West Afr. J. Med 2010; **29**:178–83.

10. Stephen J. D. O'Keefe. Danching. Nevin Mahmoud, Antonia R. Sepulveda, Mashudu Manage, Judith Arch, Haytham Adada, tian van der Merwe. Why do African Americans get more colon cancer than native Africans. *J. Nuti.* 2007; **137**: 175s – 182s.

11. Ashenafis. The frequency of large bowel cancer as seen in Addis Ababa University Pathology Department. *Ethiop. Med. J.* 2000; **38**:277 – 82.

12. Munkholm P. Review Article. Incidence and Prevalence of Colorectal Cancer in Inflammatory bowel disease. *Aliment. Pharmacol. Ther.* 2003; **18 (suppl. 2)**: 1 – 5.

13. I Segal Rarity of colorectal adenomas in African black population. *Eur. J. Cancer Prev.* 1998;**7**:387–91

14. Ogutu EO, Okoth FA, Lule GN. Colonoscopic findings in Kenyan African patients. *East African Medical Journal.* 1998; **75(9)**:540–543.