

A clinicopathologic analysis of colorectal cancers diagnosed by histology of colonoscopy-derived specimens in Lagos, Nigeria

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Abstract

Introduction: Colorectal cancer (CRC) is one of the leading causes of cancer-related deaths in Nigeria. Emerging data indicate there is a gradual increment in the uptake of colonoscopy as an essential tool in CRC diagnosis in the country. This article seeks to document the clinico-pathologic patterns of CRC that were diagnosed via histology of colonoscopy-derived samples and highlight differences and relationships in site-specific disease.

Methods: This was a retrospective study over a period of five years, carried out in two private medical centres in Lagos State, Nigeria. Patients who had a diagnosis of CRC from the histology of colonoscopy-derived tissue samples were included in the study. The records were then scoured for the demographic, clinical presentation and pathology data

Results: A total of 84 subjects were included in this study and there were 47 (56%) males and 37 (44%) females with a male to female ratio of 1.3:1. The mean age and standard deviation was 56.6 ± 13.9 years. Thirty seven subjects (44%) were aged 50 years and below. Patients with left-sided disease constituted the majority 64 (76.2%) in this series and the most common colonic sub-site was the rectum/rectosigmoid 35 (41.7%). Bleeding per rectum was by far the commonest presenting complaint 45 (53.6%) and this was the only symptom that was significantly associated with left-sided CRC ($p=0.003$) while right-sided lesions were associated with unexplained anemia ($p=0.032$) and abdominal pain/discomfort ($p=0.02$). Adenocarcinoma was the most frequently encountered histological subtype 61 (72.6%).

Conclusion: The study finds that a high proportion of subjects afflicted with CRC are in the young age groups. Hematochezia was the most common presenting complaint and rectal/rectosigmoid the most common colonic location of CRC lesions. A significant relationship was found between sidedness and specific symptoms at presentation.

Keywords: Colonoscopy, Colorectal Cancer, Histology, Nigeria

Résumé

Introduction: Le cancer colorectal (CCR) est l'une des principales causes de décès liés au cancer au Nigeria. Les données émergentes indiquent qu'il y a une augmentation progressive de l'adoption de la coloscopie en tant qu'outil essentiel dans le diagnostic du CCR dans le pays. Cet article vise à documenter les schémas cliniques et pathologiques du CCR qui ont été diagnostiqués via l'histologie d'échantillons dérivés de la coloscopie et à mettre en évidence les différences et les relations dans la maladie spécifique au site.

Méthodes : Il s'agissait d'une étude rétrospective sur une période de cinq ans, réalisée dans deux centres médicaux privés de l'État de Lagos, au Nigéria. Les patients qui avaient un diagnostic de CCR à partir de l'histologie d'échantillons de tissus dérivés de la coloscopie ont été inclus dans l'étude. Les dossiers ont ensuite été parcourus pour les données démographiques, de présentation clinique et de pathologie

Résultats : Un total de 84 sujets ont été inclus dans cette étude et il y avait 47 (56%) hommes et 37 (44%) femmes avec un rapport homme/femme de 1,3:1. L'âge moyen et l'écart type était de $56,6 \pm 13,9$ ans. Trente-sept sujets (44%) étaient âgés de 50 ans et moins. Les patients atteints d'une maladie du côté gauche constituaient la majorité 64 (76,2%) dans cette série et le sous-site colique le plus courant était le rectum/recto-sigmoïde 35 (41,7%). Le saignement per rectum était de loin la plainte la plus courante 45 (53,6 %) et c'était le seul symptôme significativement associé au CCR du côté gauche ($p = 0,003$) tandis que les lésions du côté droit étaient associées à une anémie inexplicquée ($p = 0,032$) et douleur/trouble abdominale ($p = 0,02$). L'adénocarcinome était le sous-type histologique le plus fréquemment rencontré 61 (72,6 %).

Conclusion: L'étude révèle qu'une forte proportion de sujets atteints de CCR se trouve dans les tranches d'âge jeunes. L'hématochézie (sang rouge vif dans les selles) était la plainte de présentation la plus fréquente et le rectum/recto-sigmoïde la localisation colique la plus fréquente des lésions du CCR. Une relation significative a été trouvée entre le caractère latéral et les symptômes spécifiques lors de la présentation.

Mots clés : *Coloscopie, Cancer colorectal, Histologie, Nigeria*

Introduction

Global estimates put colorectal cancer (CRC) as the 2nd commonest cause of cancer-related deaths worldwide [1]. Nigerian researchers have contributed over 6 decades worth of scientific material and current data agree with the estimates from the World Health Organization [1-3]. The importance of colonoscopy in various aspects of the management of CRC cannot be over emphasized as has long been highlighted by local and international professional bodies [3,4]. A significant contributor to the recent upsurge in local published content about the disease has been slow but gradual uptake in colonoscopy as a diagnostic tool work in the country [5-9]. As definitive diagnosis of CRC still rests on histopathological identification and the increasing use of colonoscopy has meant that the procedure has become an essential tool for deriving tissue for diagnosis of this disease.

The study presents an assessment of specified clinical and pathological parameters in Nigerian patients whose definitive diagnosis of CRC was reached upon histological diagnosis of specimens that were obtained during colonoscopy. For the purposes of analysis, anal cancers were grouped under the heading of CRC.

in Clinix Healthcare (from August 2014 till December 2019) and Afriglobal Medicare (March 2017 till April 2019) were mined for study data. The said centres carry out regular out-patient diagnostic colonoscopy procedures as part of multiple diagnostic services. Patients who had a diagnosis of CRC from the histology of colonoscopy-derived tissue samples were included in the study. No patient was included twice as some of these patients did multiple procedures (e.g. for diagnosis and following surgery).

The histological diagnosis was obtained from the centers' histopathology records of the colonoscopy-derived biopsy samples. The identified patients were then selected and their demographics, presenting complaints and endoscopic findings were procured from the relevant entries in copies of the patients' results.

Ethical considerations

Ethical approval was obtained from the Lagos University Teaching Hospital Health Research Ethics Committee prior to commencement of the study.

Statistical analysis

The following data were retrieved and entered into a proforma designed for this study: basic demographics, the indication and findings on colonoscopy and the histology report.

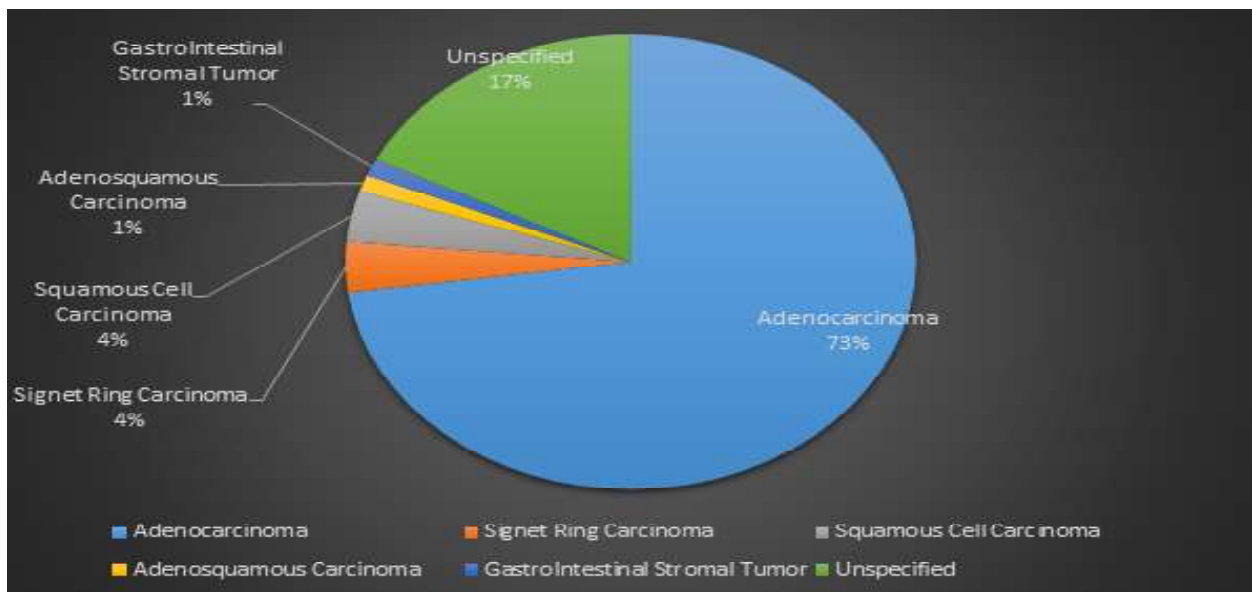


Fig. 1: Distribution of histological subtypes of colorectal cancer.

Methods

This was a retrospective study over a period of five years, carried out in two private medical centres in Lagos State, Nigeria. The records of endoscopy suites

Discussion

Diagnostic colonoscopy has already been established as being of cardinal benefit in the diagnosis of CRC both locally and internationally by professional

gastroenterology bodies [3,4]. This foundational truth is what the benefit of this study draws on. CRC diagnosis having been clinched, an analysis was then carried out on various relevant clinical and pathological parameters.

A slight male preponderance was noted in the study cohort (ratio male 1.3:1 female). This finding is in keeping with current global (GLOBOCAN), sub-Saharan and national estimates [1,2]. Our analysis also showed that patients who are 50 years of age or less accounted for more than 40% of this study population (Table 1). This worrying statistic has been mirrored from data across a good number of regional and other sub-Saharan African-based publications and from the most recent of similar local works [2,5,6,10-14]. Scientific reviews have attempted to draw attention to the concerning implications of such findings but there remains no concerted research nor policy aimed at truncating its existence [15,16]. This consistent finding clearly portrays the striking difference in the age-specific prevalence of CRC among black Africans vs. those in the West and beyond. Perhaps, it is the *under*-emphasis of this devastating statistic that has resulted in some dismissing this significant proportion of CRC-afflicted young people in Africa as “negligible” [17].

Our results show that hematochezia is the most common complaint at colonoscopy (Figure 3). They also reveal that there is a statistically significant association between left-sided CRC and bleeding per rectum (Figure 2). The two aforementioned findings are to be expected and agree with various other published Nigerian publications [5-8]. Abdominal pain/discomfort was shown to be associated with right-sided CRC alongside unexplained anemia in this study. This latter finding is in keeping with submissions from Nigeria and beyond [11,18]. The importance of anemia in CRC (most commonly in right-sided disease) cannot be overemphasized as patients with this sign are known to present with worse staging and have higher mortality [19-21]. The results of our analysis did not support the recent surge in scientific literature pointing to a significant association between right-sided CRC and female sex or advancing age [22,23]. The reason for this might be related to the relative small numbers of our study population.

With regards to anatomical location, an overwhelming preponderance of left-sided, in general, and rectal/rectosigmoid lesions, in particular, was found in this study (Figure 4). This fact has long been clearly demonstrated across all geo-political regions of the country [2,6]. A report by Oribabor and colleagues from Ekiti State, South-West, Nigeria argues for a right-sided predominance of CRC in the

country [24]. But their numbers are rather scant (33 patients over a 7 year period- average of less than 5 patients a year) and the cross-sectional nature of their work without any longitudinal follow up means that the publication is grossly underpowered to make generalizations that would be tenable country-wide. The fact that these lesions tend to present with hematochezia should be enough to raise the clinical suspicion of an enlightened patient and any well-informed medical practitioner [25]. Additionally, the clinical detection of many CRC lesions in Nigeria is within the expertise of the average Nigerian doctor because of their proximity to the anal verge as many of these tumors are in the rectal/rectosigmoid region. This important point was referenced by Anyanwu in his work on the sub-site distribution of CRC in the South Eastern part of Nigeria as he noted that “In the absence of screening procedures in the foreseeable future, public enlightenment to patients and physician continuing education are key to earlier diagnosis...” of CRC [25].

Analysis of histopathological reports of these patients reveals that adenocarcinoma is by far, the most predominant subtype of CRC in this population- a finding that is widely accepted as it has been severally documented by previous researchers [2]. As in a publication by Umana et al, only a single case of gastrointestinal stromal tumor was seen in that study as well- thus underscoring the rareness of this type of malignant lesion in the Nigerian colon [7].

Conclusion

This paper’s evaluation of clinical and pathological parameters of CRC patients draws on the benefit of the colossal usefulness of colonoscopy as a tool in the diagnosis and management of CRC. The important finding of a high proportion of young Nigerians with this disease is a cause for concern and it is hoped that this work will help provoke concerted effort at research into and policy against this phenomenon. The CRC site-specific findings in this and other studies should be considered as germane reason to raise public and health-workers enlightenment levels in order to bridge the gap to early diagnosis, at least before the onset of other well established CRC screening programs.

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