

Colorectal Cancer in Patients Younger than 45 years old: Clinical Aspects and Prognosis at the Yaounde Central Hospital, Cameroon

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Abstract

Background: Colorectal cancer (CRC) is on a constant rise in Africa and increases with age, particularly above 50 years old. This study aimed firstly to determine the clinical, endoscopic, and histological aspects of CRC, and secondly, to evaluate the prognosis of CRC in young patients under 45 years at the Yaounde Central Hospital. **Methodology:** Over a period of 10 years, we studied the records of patients operated on for CRC at the Yaounde Central Hospital. The study included all patients under 45 years old suffering from CRC. It excluded patients older than 45 years and patients below 45 who did not suffer from CRC and/or had a different type of tumor. **Results:** Overall, out of 264 digestive tract cancer cases operated on, 41 patients under 45 years had a CRC, representing a prevalence rate of 15.53%. The most common clinical presentation mode was rectorrhagia, occurring in 70.7% of cases (n=29). The most common endoscopic anatomical location was the rectum, 58.5% (n=24). Adenocarcinoma was the most

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common histological type, with 23 cases (56.1%). Overall survival after 5 years stood at 43.7%. **Conclusion:** CRC here is of rectal seat and adenocarcinoma type. The major issue with the disease is late diagnosis, which would explain the severity of prognosis from the outset.

Keywords: colorectal cancer, young patients, prognosis, adenocarcinoma, Cameroon.

1 Introduction

Colorectal cancer (CRC) is a malignant tumor that develops at the expense of the mucosa of the colon and the rectum [1]. This is the most frequently diagnosed digestive tract cancer worldwide [1]. It has always been considered a disease of the elderly. Its occurrence in young patients has sometimes been included in the registers of rare diseases [2]. However, the proportion of CRC-affected patients under 45 years old has been on the rise for several years now [2]. It varies according to region, with a rate of 1 to 4% in Western countries such as the United States, France or Scotland. The highest prevalence is recorded in countries of the Middle East such as Turkey (18%) or Saudi Arabia (26%) [2].

Data collected in Egypt put CRC prevalence among young patients at 38% [3]. A study conducted in the Yopougon health district in Ivory Coast found a prevalence of 15.5% among young subjects under 30 years old. [4] In Cameroon, Takongmo *et al.* [5], in a study on CRC conducted in Yaounde in 1996, showed that 47.61% of patients were under 40 years old and had the same clinical profile and prognosis as elderly subjects.

Genetic defects play a certain role here, especially familial adenomatous polyposis (FAP) and Lynch syndrome, also referred to as hereditary non-polyposis colorectal cancer (HNPCC). Generally, this cancer comes from a malignant transformation of an adenomatous polyp that goes successively through several stages: genesis, growth and malignant transformation. This explains the emphasis on early detection, which is a very important phase in the fight against this cancer [6, 7].

There are several controversies surrounding the epidemiological, clinical, pathological parameters, and presentation of CRC, as well as prognostic factors and survival. While some studies suggest that young patients have a poorer prognosis [8,9], others on the contrary have found no difference in survival as compared to older subjects [2]. The poor prognosis in young patients is apparently related to late diagnosis, which is due firstly to the non-specificity of clinical signs and, secondly, to the aggressive histological type and grade [2].

The aim of this study was, firstly, to determine the clinical and endoscopic (or anatomical) presentation of CRC and its histological nature in young patients

under 45 and, secondly, assess the prognosis of the patients to improve CRC treatment in Cameroon.

2 Methodology

This was a retrospective cross-sectional descriptive study conducted in the gastroenterology and visceral surgery services of the Yaounde Central Hospital. The patient records used were compiled from 1 January 2005 to 30 April 2015.

The study included all patients under 45 years diagnosed with CRC and having a complete medical record that matched the study variables: demographic (age, gender), endoscopic, histological, and clinical outcome. The age criterion for subjects below 45 years was chosen following the Bethesda criteria [10].

The study excluded all patients that were aged 45 years and above, had an incomplete record and/or had tumors in locations other than colorectal.

A questionnaire was drawn up for each patient, specifying: patient identification, age, sex, the clinico-pathological characteristics of the CRC (presentation mode, discovery method, anatomical location, initial metastases at time of diagnosis), history and risk factors for colorectal cancer (personal or family history of CRC), pathological classification, type of treatment, and average survival time.

The data was processed using Epi-info 7, Microsoft Office Excel 2013, and SPSS version 20.0 (IBM, Chicago, USA). Averages and their standard deviations were calculated for quantitative variables, proportions were calculated for qualitative variables, and the Chi-squared test was used to compare variables. The significance threshold was set at 0.05.

3 Results

In total, 264 cases of digestive tract cancers were operated upon, including 41 CRC subjects below 45 years, representing a prevalence of 15.53%. The mean age was 34.17 years \pm 8.77, with 24 men (59%) and 17 women (41%), representing a sex (male/female) ratio of 1.7.

According to presentation mode, there were: abdominal pains in 95.1% (n=39) of the cases, alteration of the general state in 87.8% (n=36), rectal bleeding in 70.7% (n=29), anemia in 68.3% (n=28) of cases, the occlusive syndrome in 14.6% (n=6), and ascites in 9.7% (n=4) of cases. (Figure 1)

According to medical history, 2.43% (n=1) of patients had ulcerative colitis, 4.87% (n=2) had a family history of polyps, and 29.26% (12) had no history.

As regards method of discovery, preoperative discovery was the most common, occurring in 16 cases (39%), followed by proctosigmoidoscopy with 12 cases (29.3%), and total colonoscopy with 8 cases (20%).

As concerns location, the rectum was the most recurrent anatomical location with 58.5% (n=24) of the patients. The other locations were, in order of frequency, the right colon, the rectosigmoid hinge, the cecum, the left colon, the sigmoid, and the transverse colon (Figure 2).

According to pathological results, adenocarcinoma was the most common histological type, occurring in 56.1% (n=23) of patients, followed by colloid (mucinous) carcinoma in 24.5% (n=10) of patients, and undifferentiated carcinoma (n=8) in 19.5% of patients.

Following Dukes' classification, there were: 14 cases of Dukes A (34.1%), 9 cases of Dukes B (21.9%); 7 cases of Dukes C (17.1%), and 11 cases of Dukes D (26.8%).

At diagnosis, 11 of 41 patients (26.8%) had metastases, mainly in the liver and the peritoneum.

With regard to surgical treatment, abdominoperineal resection was the type of surgery most performed, occurring in 36.6% (n=15) of cases.

Overall survival after 5 years was 43.7%, assessed using the Kaplan-Meier actuarial curve.

The overall survival rate of patients with no initial metastasis at diagnosis was 58%, and that of those with metastases stood at 19%. (Curve 1)

4 Discussion

CRC prevalence in our series stands at 15.53% as compared to all digestive tract cancers. These figures are consistent with data from the literature, which, according to region, range from 1 to 4% in Western countries such as the United States, France, Scotland, and are higher in countries of the Middle East such as Turkey (18%) and Saudi Arabia (26%) [2]. However, this prevalence is still underestimated for lack of a screening policy in the country and the limited number of gastroenterologists, who can be found only in the two major cities of Douala and Yaounde.

Males accounted for 59% of our study population with a sex (male/female) ratio of 1.7. This ratio differs from that recorded by Mahdi et al. in a single-center study in Tunisia in 2010, where the male/female ratio was 1 [11]. However, in our study, the proportion of young subjects under 45 (15.53%) suffering from CRC as compared to all digestive tract cancers is close to that recorded in the said study, which stands at 14.2% [11].

The average age in our study was 34.17 years \pm 8.77. In the studies conducted by Mahdi M et al., Suleyman A et al., and Ibrahim OK et al., the average age was 32, 35, and 31 years respectively [11, 12,13].

We could not accurately establish medical history and risk factors due to the retrospective nature of the study and the difficulty involved in determining hereditary risk factors in our environment, particularly with regard to the Bethesda criteria for HNPCC (*hereditary non polyposis colorectal cancer*) and FAP (*familial adenomatous polyposis*). However we recorded ulcerative colitis in 2.43% of the study population, and 4.87% of the population had cases of adenomatous polyps in their family history. This result is similar to that obtained by Mahdi et al., who showed that there were risk factors in 2.5% of the patients in their study [11].

The most common method of discovery was intraoperative discovery (39%), followed by proctosigmoidoscopy (29.3%). Two reasons can be used to justify this result. Firstly, the non-specificity of clinical signs, which could guide practitioners to other pathologies. Whereas, in case of occlusion, patients undergo surgery immediately. Similarly, in cases of rectal bleeding, the patient is often referred for a proctosigmoidoscopy. Secondly, young age and the low frequency of this disease in our environment contribute to delay in diagnosis.

With regard to location, the most recurrent site was the rectosigmoid. Our results are consistent with data from the literature [11, 12, 14, 15].

At the histological level, adenocarcinoma was the most common type (56.1%). Suleyman et al., in a study conducted in Istanbul in 2003, showed that adenocarcinoma is the most common histological type of CRC regardless of age [12].

Survival after 5 years was 58% for patients without any initial metastasis and 19% for patients with initial metastases. In a retrospective hospital study conducted in France in 2004, Noah et al. showed that, the less advanced a tumor was, the life expectancy was [16]. In our study, young patients with initial metastases had a 32% rate of survival after 5 years and those without initial metastases had a 77% rate of survival after 5 years. The poor survival rate in our study is due to delay in treatment. Patients usually arrive in our hospitals at a metastatic stage. The delay in diagnosis of CRC in Cameroon can be blamed on self-medication and poverty.

McKay A et al., in a study conducted in Canada in 2014, showed that at the same stage of colorectal adenocarcinoma, the prognosis is better in young patients. Indeed, old age is associated with a poor prognosis, while young age is an independent predictor of better survival [17]. However, tumor differentiation and gender have no impact on survival [12].

5 Conclusion

CRC prevalence in our environment is on rise, but it is still underestimated considering the absence of screening policies. The poor prognosis is related to delay in diagnosis and treatment, which is yet to be adapted to comply with modern protocols.

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