

# Colorectal Cancers in Mauritania: Clinical Aspects and Treatment

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## Abstract

The aim of our study was to determine epidemiological, clinical and therapeutic profile of colorectal cancers in Mauritania. **Patients and Methods:** It was a retrospective multicentric study conducted over 5 years in Nouakchott National Hospital Centre and in private clinics of Mauritania. All cases of colorectal cancers histologically confirmed were included. The Astler and Collier classification was used to classify lesions by level of extension. **Results:** 225 patients were included with a sex ratio (M/F) of 1.39, an average age of 52.3 years. Location of the lesion was rectal (37.7%) and colonic (62.3%). Clinical manifestations were dominated by rectal bleeding (26.9%), occlusive syndrome (16.5%) and transit disorders (11.6%). Endoscopic lesions were of stenosing (45.2%), ulcero-burgeoning (39%), ulcerous (7.5%) and burgeoning (4.7%) types. Histological profiles were adenocarcinoma (88.9%), carcinoma (3.1%) and lymphoma (2.6%). The work-up for extension revealed metastasis in 33.6% of cases. These were stage B (49%) and C (36%) among the 95 cancers that received the Astler and Collier classification. The treatment was curative (80.83%) and palliative (19.16%). **Conclusion:** Colorectal cancer is a reality in Africa. However, its diagnosis still remains delayed, which increases the prognosis, hence the need to promote screening tests.

## Keywords

Colorectal Cancer, Diagnosis, Prognosis, Mauritania

## 1. Introduction

At global level, colorectal cancer (CRC) is the most common digestive cancer [1]. In

Europe, its incidence is high due to population ageing. Its prognosis was improved through the development of screening and treatment of pre-cancerous lesions [2] [3]. In Africa, colorectal cancer data are mainly derived from endoscopic and surgical series. This is a male ailment between 45 and 60 years [4]. In Senegal, often late diagnosis is made in patients with rectal bleeding in 45% and occlusive syndrome in 31% of cases [5]. In Sub-Saharan Africa, adenocarcinoma of Lieberkünüen type is the predominant histological type in over 97% of cases [6] [7] [8]. The prognosis remains poor with a low 5-year survival [5]. The aim of this Senegalese-Mauritanian study was to determine epidemiological, clinical and therapeutic profile of colorectal cancer in Mauritania, a buffer country between the Maghreb and Black Africa.

## 2. Patients and Methods

It was a descriptive retrospective multicentric study of 225 cases of colorectal cancer conducted from 1 January 2008 to 31 December 2012 at the National Hospital Centre of Nouakchott (in internal medicine, hepato-gastroenterology, anatomypathology and general surgery departments) and in private clinics of the capital city (Nouakchott, Mauritania). All cases of colorectal cancers histologically confirmed were selected and those with incomplete files were not included. Recruitment was carried out from the hospital records. The register of the anatomy pathology departments was also used for histological reports of biopsies and surgical specimens. Data were collected from a pre-determined survey sheet including:

- **Sociodemographic data:** age, sex, antecedent.
- **Clinical data:** discovery circumstances, clinical signs, associated pathologies, lower gastro intestinal endoscopy (location, macroscopic aspects), computed tomography (extension work-up), complete blood count, and histological data. The Astler and Coller Classification [9] made it possible was used to classify lesions by level of extension.
- **Treatment Data:** chemotherapy, surgery, radiotherapy as appropriate.

Data entry was carried out using the Epi Info software version 6 and Microsoft Excel. For analysis purposes, the following statistical tests were used: percentage, average.

## 3. Results

### 3.1. Sociodemographic Aspects

225 cases were included. These were 131 men and 94 women, *i.e.* a sex ratio (M/F) of 1.39. The average age was 52.3 years (4 - 90 years extremes). The most affected age group was between 46 - 60 years (41.3%), followed by those over 60 years (27.1%). Patients under 30 years were involved in 8% of cases. In our series, 126 patients (56%) were black (86 Harratin, 39 Black African Mauritanian and 1 Senegalese) and 99 other (44%) Caucasians (98 Moors and 1 Iraqi).

### 3.2. History and Aetiological Factors

An adenomatous polyp was found in 7 patients and adenomatous polyposis in 3 pa-

tients. In 4 patients there was a tumour recurrence (three rectal and one sigmoid location). Only one family history of colorectal cancer was found.

### 3.3. Clinical Aspect

The main clinical manifestations were: rectal bleeding (26.9%), occlusive syndrome (16.5%). The other symptoms were weight loss (13.5%), transit disorders (11.6%), rectal syndrome (6.4%), anal mass or haemorrhoidal syndrome (6.2%), clinical anaemia (4.4%), abdominal mass (4.4%) and appendiceal syndrome (1.3%) (**Table 1**).

### 3.4. Endoscopic Aspects

Low gastro intestinal endoscopy was performed in 64.8% of patients (92 sigmoidoscopies and 54 colonoscopies) and abdominal tomography in 21.1% of cases. Colorectal cancers were divided into 85 rectal cancers (37%) and 142 colon cancers (63%). Two cases of synchronous localizations (caecum and colon caecum + left-sided colon and caecum + recto sigmoid) were found. Endoscopic lesions were of the stenosing (45.2%), ulcero-burgeoning (39%), ulcerous (7.5%) and burgeoning types (4.7%). **Table 2** shows the distribution of colorectal cancers by location.

### 3.5. Biological and Histological Aspects

Tumour markers (CEA and CA 19-9) were assayed in 25 patients (11.1%). A high rate was found in 10 of them (40%). Anaemia was presented in 16 patients. An anatomopathological examination revealed adenocarcinoma in 88.9% of cases. **Table 3** shows the frequency of different histological types.

### 3.6. Evaluation of Extension

125 patients underwent a CT scan (103 colon cancers and 22 rectal cancers). Overall,

**Table 1.** Symptoms of colorectal cancers according location.

Symptoms	Rectum (n = 85)	Right-sided colon (n = 53)	Left-sided colon (n = 89)
Rectal bleeding	68.2%	11.3%	26.9%
Weight loss	17.6%	20.7%	20.2%
Anaemia	4.7%	11.3%	3.3%
Pain	14.1%	33.9%	32.5%
Diarrhoea	7%	16.9%	13.4%
Constipation	8.5%	20.7%	11.2%
Rectal syndrome	12.9%	0%	1.1%
Occlusion	4.7%	30.1%	38.2%
Appendicular syndrome	0%	5.6%	0%
Anal mass/Haemorrhoidal syndrome	15.2%	1.8%	0%
Anorectal fistula	1.1%	0%	0%

**Table 2.** Distribution of cancers by location.

Localisation of colorectal cancers	Series	Sex-ratio (H/F)	Percentage
Caecum	13	5/8	9%
Right-sided colon	Ascending colon	23/14	26%
	Colonic corner		
Transverse colon	5	2/3	4%
Left-sided colon	Descending colon	19/13	23%
	Colonic corner		
Sigmoid	55	22/33	39%
Rectum	85	61/24	37%

**Table 3.** Frequency and topographical distribution of histological types of CRC.

HISTOLOGICAL TYPES	Series (n = 225)	
<b>Adenocarcinoma</b>	200	88.8%
Well-differentiated Luberkhunien	139	61.7%
Moderately differentiated Luberkhunien	34	15.1%
Poorly differentiated Luberkhunien	5	2.2%
Mucinous	22	9.7%
<b>Carcinoma</b>	7	3.1%
Epidermoid	4	1.7%
Poorly differentiated	2	0.8%
Polymorphous	1	0.4%
<b>Lymphoma</b>	6	2.6%
<b>Malignant undifferentiated tumour</b>	4	1.7%
<b>Mixed tumour</b>	3	1.3%
<b>Tumour with spindle-shaped cells GIST</b>	1	0.4%
<b>Melanoma</b>	1	0.4%
<b>Leiomyosarcoma</b>	1	0.4%
<b>Neuroendocrine carcinoma</b>	1	0.4%

metastasis was found in 42 patients (33%). Of the 103 colon cancers, 29 cases (28%) of metastasis were found (11 livers, 6 lung, 8 peritoneal carcinosis, 6 lymph node, 4 small intestines, 7 adnexal and 1 brain). Of the 22 rectal cancers, there was a metastasis in 13 cases (59%) (3 livers, 6 lungs, 5 adnexal, 2 lymph node, 1 small intestine and 1 peritoneal carcinosis). Only 95 cancers received the Astler and Collier classification presented in **Table 4**.

### 3.7. Therapeutic Aspects

Among the 225 patients, 167 (74.2%) received treatment. The remaining 58 (25.7%)

**Table 4.** Classification of cancers according Astler and Collier classification.

Astler and Collier Classification	Series		Right-sided colon	Left-sided colon	Rectum
<b>A</b>	0	0%	0	0	0
<b>B</b>	47	49%	17	23	7
<b>C</b>	34	36%	11	17	6
<b>D</b>	14	15%	6	6	2
<b>Total</b>	95	100%	33	47	15

were lost to follow-up. The treatment was curative (surgery) in 135 cases (80.83%) and palliative (chemotherapy or radiation) in 32 cases (19.1%). Curative treatment involved 44 (86.2%) cancers of the right-sided colon, 47 (79.6%) cancers of the left-sided colon and 45 (78.9%) of rectal cancers.

## 4. Discussion

Difficulties of this study are related to its retrospective nature and the high number of patients lost to follow-up.

This article is derived from a retrospective study conducted in a university hospital for a thesis of medicine. This kind of work doesn't require in Senegal and in Mauritania the approval of ethic committee.

### 4.1. Epidemiological Data

The African series on colorectal cancer are primarily derived from hospital data. Over a period of 5 years, 225 cases of CRC were collected. This figure is higher than those found in Senegal by Sarr *et al.* [10] and Konate *et al.* [5] who reported 15 and 71 cases, respectively. In Togo, Darré *et al.* [11] in the pathology department reported 57 colorectal cancers over a 10 year period, representing 2.8% of all cancers.

The average age of 52.3 years corroborates with the African data [5] [7] [12]. Averages of younger age are reported by others [13] [14]. This predominance of cases prior to the sixth decade was also reported in the United States among African-Americans [15]. In the Europe, colorectal cancer occurs more frequently in elderly persons [1] [2] [3]. Colorectal cancer is a predominantly male condition. However, Sarr *et al.* [10] in Senegal, Diarra *et al.* [8] in Mali and Diallo *et al.* [13] [15] in Gabon reported a sex ratio in favour of women.

In our series, 56% were black people and 44% white people. A North American study conducted by Sangeeta *et al.* [16] reported an increase in CRC incidence in African-Americans compared to white people. Apart from genetic predisposition, environmental factors and poverty limiting access to health care are probably involved.

### 4.2. Clinical Aspects

Rectal bleeding was the CRC discovery circumstance in 26.9% of cases. This symptom

is quite frequently reported by African authors in proportions of 43 to 46% [5] [13]. It is usually the proof indicative of a rectal injury (65% in this location). Saïdi *et al.* [17] in Kenya found it in 79% of rectal localization and 21% of colon among 253 CRCs. Occlusive syndrome usually complicates left-sided colonic tumour. This is a symptom of poor prognosis. In the series of 22 cancers revealed by an occlusion of Konaté *et al.* [6], 50% of patients died within a year after surgery. The frequency of other revealing manifestations varies according the authors [6] [10] [13].

The diagnosis of CRC was established through the lowerendoscopy in 65% of cases. In the surgical series, the endoscopy achievement rate is lower between 49% and 56.4% [5] [13]. This low achievement rate is probably due to the lack of equipment and sometimes to a peroperative revelation. In most studies, colonic location predominates. Konaté *et al.* [5] in Senegal reported more colonic locations in 59.2% against 40.8% in the rectum. A similar distribution is found in Gabon with 57% and 42%, respectively [13]. However, a more rectal location was reported in Marocco in 57% [15].

### 4.3. Histological Aspects and Extension

Adenocarcinoma is the predominant histologic lesion (88.9%). This is in accordance with African and international literature data. Carcinomas come second with 3.1% [1] [2] [3] [11] [12] [15]. Thoracic-abdominal-pelvic tomography scanis the gold standard for extension work-up. However, only 55% of our patients received it due to financial inaccessibility. None of our patients underwent a rectal echo endoscopy because of unavailability of the latter. Overall, metastasis was found in 42 patients (33%). Of the 103 colon cancers, 29 cases (28%) of metastasis were found. Of the 22 rectal cancers, there was a metastasis in 13 cases (59%).

### 4.4. Classification

In Africa, colorectal cancer is diagnosed at a later stage. Of the 95 cancers that received the Astler and Collier classification, 49% were discovered at a stage where the tumour did not enter through the colonic wall (Stage B), 36% already had a loco-regional invasion (Stage C) and 15% were metastatic (Stage D). In Mali, Traoré *et al.* [18] reported 28.8%, 50% and 21.2% for the stages II, III and IV, respectively using the TNM classification. In the Gabonese series [13], patients in stages II and III represented 34% and 46%, respectively. Similar data are reported in the Maghreb with 41.6% for stage II and 37.5% for stage III [12]. However, in Europe and the United States the diagnosis is made at an earlier stage through mass screening and in patients at risk [1] [3] [4] [16].

### 4.5. Treatment and Survival

Only 74.2% underwent surgery and 37% received adjuvant treatment. Our national oncology center that can provide this treatment was only established in 2010 and the cost of treatment is borne by patients. In rectal cancer, Bonjer *et al.* [19] report similar results between open surgery and laparoscopy. In our series, we were not able to study the survival because of the retrospective nature of the study and the high percentage of

lost to follow-up. African data show a low rate of 5-year survival. In Senegal, it stands at 5% in colorectal cancer and 15% in rectal cancer [6] [7]. In 25 European Union countries the average value of the 5-year survival is greater than 50% [1]. In these countries, the screening and treatment of polyps as well as mass screening account for this improved prognosis [20]. However, there is a need to improve education on CRC screening [21].

## 5. Conclusion

Colorectal cancer is not rare in Africa as is evident from reported cases. Its diagnosis is later and its prognosis is poor. Adenocarcinoma is the most common histological type.

## 6. Suggestions

It is essential to promote access to endoscopy but also screening tests in persons at risk. Diagnosis and treatments centers should be implemented by the decisors markers.

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