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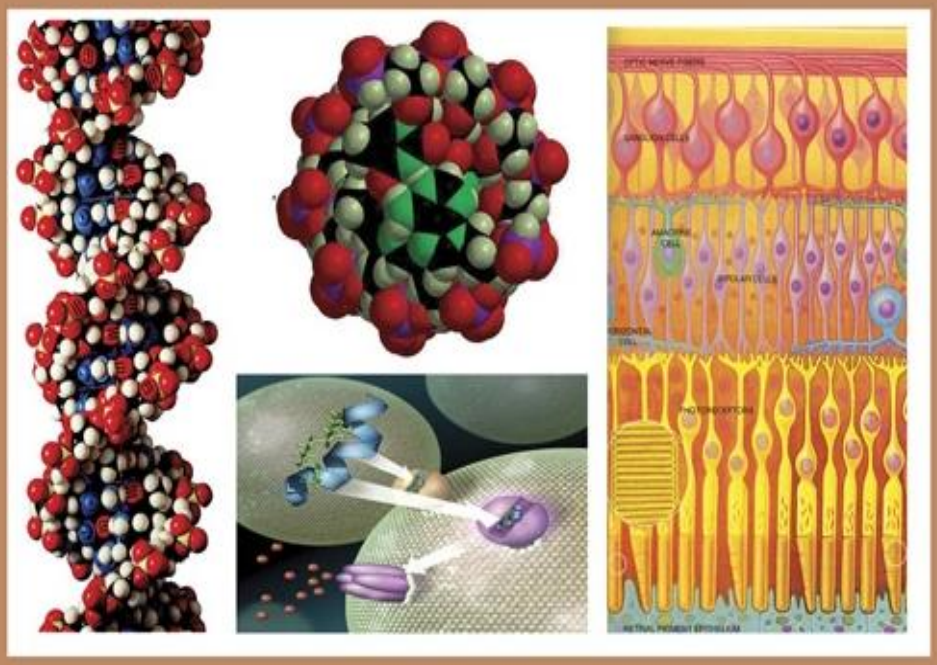

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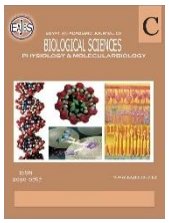

Epidemiological Aspect of Colorectal Cancer: A Retrospective Study in Sidi-Bel-Abbes Wilaya, Western Algeria

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ABSTRACT

Background: Colorectal cancer (CRC) is considered the third most common cancer worldwide, the second leading cause of death and represents a major public health problem in many countries. **Patients and Methods**: We undertook a retrospective study survey by reviewing files from the Medical Oncology Department of Hassani Abdelkader Hospital of Sidi Bel Abbes, during a period from January 2011 to February 2016, with the aim of studying the epidemiological, clinical, anatomopathological and therapeutic aspects of CRC. **Results**: a total of 236 patients of both sexes suffering from CRC were involved, Our study revealed a significant increase in incidence, a male predominance (sex ratio = 1.27), and a prevalent age range between 45-60 years old with a mean age of 58.25±13.78. Colon cancer represents 2/3, and rectal cancer represents 1/3 of our sample (respectively: 67, 8% and 32, 2%). Tobacco and alcohol consumption were studied as risk factors. Loss of weight, asthenia, anorexia, transit disorders, abdominal pain and faecal blood were the main involved clinical signs. We recorded a predominance of budding tumor forms (44.44%). Histologically: well-differentiated adenocarcinoma type is the most common (55%). We noted the presence of liver and lung metastases mainly. 76% of our patients underwent surgery, and Adjuvant chemotherapy was the main treatment for this type of cancer. **Conclusion**: According to the present study, we can affirm that our patients were victims of a late diagnosis due to the ignorance of their pathology, which unfortunately was already present at the time of the examinations.

INTRODUCTION

As the third most common malignancy and the second most deadly cancer (Xi & Xu, 2021), colorectal cancer (CRC) induces estimated 1.9 million incidence cases and 0.9 million deaths in both sex worldwide in 2020 (Sung *et al.*, 2021). Also in Algeria CRC is the second most commonly diagnosed cancer. The incidence and mortality rate of CRC has increased so the nation now ranks third in Africa in both these variables. In 2018, CRC rates ranked Algeria in first place among North African countries, with about 3000 deaths and more than 5500 new cases. Nonetheless, the incidence of CRC in Algeria is lower than that of many Mediterranean countries in Southern Europe (Negrichi & Taleb, 2021).

The term colorectal cancer refers to a slowly developing cancer that begins as a tumor or tissue growth on the inner lining of the rectum or colon. If this abnormal growth, known as a polyp, eventually becomes cancerous, it can form a tumor on the wall of the colon or rectum, and subsequently grow into blood vessels or lymph vessels, increasing the chance of metastasis to other anatomical sites. Talking about cancers beginning in the colorectal region, the vast majority (over 95%) are classified as adenocarcinomas (LOUNIS *et al.,* s. d.; Marley & Nan, 2016). Other less-common cancers of the colorectal region include carcinoid tumors (which begin in hormone-producing intestinal cells), gastrointestinal stromal tumors (which form in specialized colonic cells known as interstitial cells of Cajal), lymphomas (immune system cancers that form in the colon or rectum), and sarcomas (which typically begin in blood vessels but occasionally form in colorectal walls) (Marley & Nan, 2016). The development of molecular biology techniques has led to a better understanding of the genesis of CRC, opening up new horizons for therapeutic research with new and more efficient molecules.

Our study involves a retrospective epidemiological study including 236 cases diagnosed in the medical oncology department of the Hospital of Sidi Bel Abbes, whose aims are to evaluate the epidemiological characteristics of colorectal cancers, as well as to study their clinical, anatomopathological and therapeutic aspects.

MATERIALS AND METHODS

A retrospective study was performed by reviewing data records of 236 patients with colorectal cancer at the level of the medical oncology department of the Hospital of Sidi Bel Abbes spread over a period of 5 years from January 2011 to February 2016.

All data were gathered from the patient's medical files, first, we have frequency by year and tumor localization (colon or rectum), then: the patient's sex, age, personal and medical history; clinical parameters such as circumstances of discovery; Histological and anatomopathological data: macroscopic form, microscopic form, tumor topography (site of colon or site of the rectum); presence or absence of metastasis and site of metastasis if found; therapeutic approach: surgical treatment and chemotherapy.

Different data were analyzed using the SPSS 22.0 software (Statistical Package for the Social Science, IBM Corporation; Chicago, Il. August 2013). All results were reported as percentages and frequencies.

RESULTS

The present study included a total of 236 patients with colorectal cancer from January 2011 to February 2016 which revealed a high percentage of cases for the year 2014 **(**Fig. 1**)**. In our series colon cancer represents 2/3 of the case studies, and rectal cancer represents 1/3 with respectively 67, 8% and 32, 2%. The population studied was ranging from 24 to 90 years old with a mean age of 58.25±13.78. The most affected age group was 50-60 years old (27,5%). More than half of the selected patients were male (56%), and female patients constituted 44% of our sample. Regarding personal, family and medical history, 17% of patients had a family history of cancer and 8.5% had a family history of CRC. Tobacco consumption was exclusively in men, with 34.9% (46 men/132), while alcohol consumption was rarely noted (10 cases/132: 7.6%). It is also exclusively male, occasional and of an average duration of 5 years. Alteration of the general patient's state was associated most of the time with digestive disorders, in our series symptoms mainly consisted of a loss of weight (47.65%), asthenia (37.28%) and rarely anorexia (12.71%). Transit disorders (alternating diarrhea/constipation) represent the predominant sign of call since it is found in 50 patients (21.18%). Table 1 shows the epidemiological and clinical characteristics of the studied population

Histological and anatomopathological parameters show that, from the microscopic point of view, well-differentiated

adenocarcinomas are in the majority (55%), while medium to poorly differentiated adenocarcinomas constitutes 19.1% and 4.24% respectively. From the macroscopic point of view, the most frequent tumor form is budding (44.44% / n= 198). In 31.9% of the selected patients, the colon tumor is located in the sigmoid area. Rectum tumor involves 38.2% at the level of the lower rectum, 36.8% in the middle rectum and 25% in the upper rectum. 28% of the studied population has developed metastases, of which 43.94% were hepatic. Table 2 summarizes anatomopathological and tumor topographical characteristics.

Surgery remains the most reliable and most used means of therapeutic management of CRC, in fact, 76% of our sample have benefited from it. In addition, a number of 44.06% of patients were treated with adjuvant chemotherapy and 32% with palliative chemotherapy.

Table 3 shows the therapeutic characteristics of our studied population.

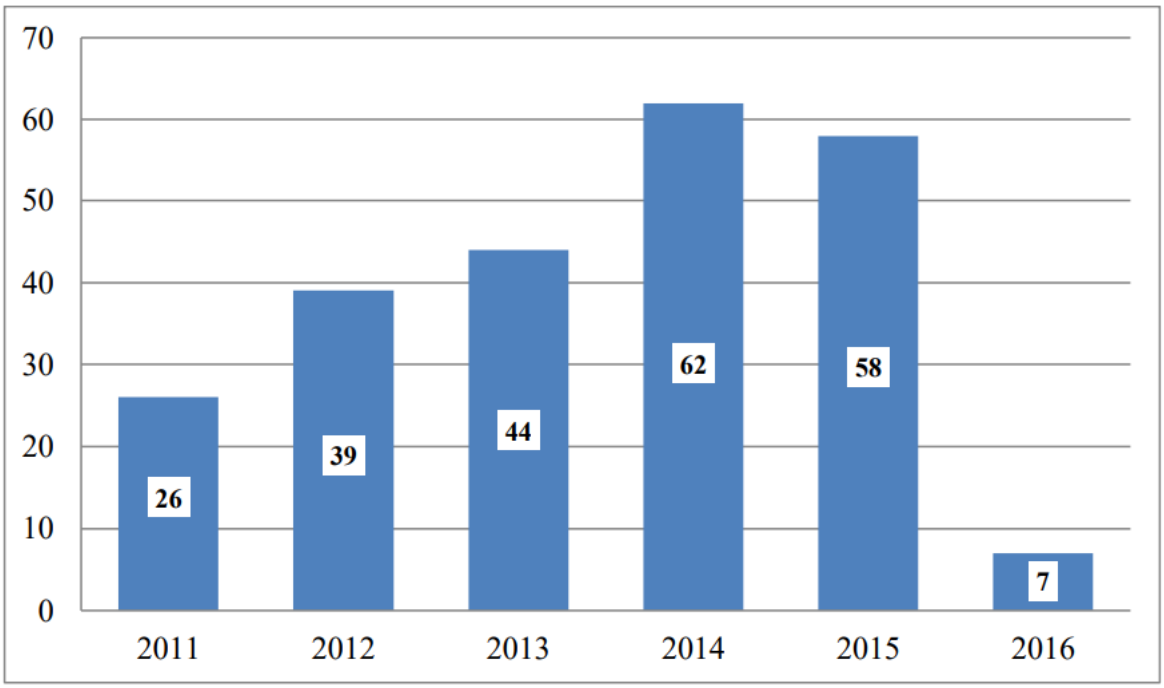

Fig. 1: distribution of colorectal cancer cases by year**.**

Table 1. Epidemiological and clinical characteristics

Variables	Number (%) or mean ± SD
Age(years)	58.25±13.78
[20-40[	25
[40-50[	36
[50-60[	65
[60-70[	53
[70-80]	44
[80-90]	13
Gender	
Females	104(44%)
Males	132(56%)
Tobacco consumption	46(34.9%)
Alcohol consumption	10(7.6%)
Circumstances Of Discovery	
Loss Of Weight	(47.65%)
Asthenia	(37.28%)
Anorexia	(12.71%)
Transit Disorders	50(21.18%)
Abdominal pain	(14,83%)
Faecal Blood	(16,9%)

Table 2. Anatomopathological and tumor topographical characteristics.

Variables	Number (%)
Histological Types	
Well Differentiated Adenocarcinomas	130(55%)
Medium Differentiated Adenocarcinomas	45(19.1%)
Poorly Differentiated Adenocarcinomas	10(4.24%)
Mucinous Or Colloidal Adenocarcinomas	24(10.16%)
Undifferentiated Adenocarcinomas	5(2.12%)
Melanoma	3(1.27%)
Tumor Form	
Budding	(44.44%)
Ulcerative-Burgeoning	(22.22%)
Infiltrator	(29.8%)
Colon topography	
Right Colonic Angle	21(13.12%)
Ascending Colon	4(2.5%)
Caecal	24(15%)
Transverse Colon	8(5%)
Sigmoid Colon	51(31.86%)
Rectosigmoidal Junction	24(15%)
Rectal topography	
Lower Rectum	29(38.16%)
Middle Rectum	28(36.84%)
Upper Rectum	19(25%)
Metastases	66(28%)
Sites Of Metastasis	
Liver	29(44%)
Liver-Lung	13(20%)
Lung	5(8%)
Peritoneum	3(4.55%)

Table 3: Therapeutic characteristics

Variable	Number (%)
Type Of Therapy:	
Surgery:	179 (76%)
Chemotherapy:	
Adjuvant Chemotherapy	104 (44, 06%)
Palliative Chemotherapy	76 (23, 21%)

DISCUSSION

1.Epidemiological Characteristics:

CRCs record an increasing frequency and currently occupy the 3rd place among all cancers. The average number of colorectal cancer in our series is comparable to other studies where CRC ranks also 3rd (Yu & Hemminki, 2020).

The proportion of colon and rectal cancers: in our sample, colon cancer constitutes the majority of colorectal cancers such as in literature, where colon cancers represent an overall 2/3 and rectal cancer a 1/3. our results are close to the world statistics, where colon cancer cases are almost double the number of rectal cancer cases (Rawla *et al.*, 2019). Also very similar to those of Alfonso Leiva *et al.* (Leiva *et al.*, 2017)

Distribution of colorectal cancers according to age: the mean age in our series is 58.25 with a standard deviation of 13.78. Our results are in agreement with the study of Hongyao yu (2019) who points out that CRC is rare among people ‹ 40 years old (Yu & Hemminki, 2020).

Distribution of colorectal cancers by sex: Through these results, we found a male predominance with 132 men (56%) and 104 women (44%). Sex ratio = 1.27. Men are more prone to developing CRC and the possibility increases after the age of 50 (Jin *et al.*, 2020).

As shown in the German study, a family history of CRC is a major risk factor for this disease (Yu & Hemminki, 2020): In our study, a family history of colorectal cancer appears in 8.5% of cases (20/ 236

cases). However, this rate is lower than found in the literature, which estimates the proportion of patients with a family history of colorectal cancer to be 14,4% (Jeon *et al.*, 2018). Concerning toxic history: Alcohol consumption and tobacco smoking also increase risks for colorectal cancer. In 2007, the International Agency for Research on Cancer (IARC) declared that there was sufficient substantiated evidence to infer that alcohol is a causal factor for colorectal cancer (Marley & Nan, 2016).

2.Clinical and Anatomopathological Characteristics :

Circumstances of discovery: the alteration of the general state is associated with digestive disorders in the majority of patients, talking about our series: loss of weight mainly appear (47.65%), less often asthenia (37.28%) and rarely anorexia (12.71%). Transit disorders represent the predominant sign of call since it is present in 50 patients (21.18%), represented most often by an alternation of diarrhea and constipation which join de literature (el Housse *et al.*, 2015)

Anatomopathological Characteristics:

Histological Type: the well-differentiated form of adenocarcinoma is the most frequent in our series (55% of cases), these numbers are closer to the reported one in the Moroccan work where well-differentiated adenocarcinoma represents 58,7% of cases (Belhamidi *et al.*, 2018).

Macroscopic form: budding form represents the most frequent form according to our sample (44.44%). Our results are different from those reported in the literature where 91.6% of the tumors were in ulcerating-budding form (Belhamidi *et al.*, 2018)

Topography of The Tumor: Colon tumor: our study revealed, in agreement with the literature, that the sigmoid colon was the most common tumor localization (Hultcrantz, 2021).

At the rectal zone, the entire rectum is generally affected (el Housse *et al.*, 2015): in agreement with the work of the Moroccan team, the lower and middle rectum are affected with almost the same percentage of cases: 38.16% and 36.84% respectively.

Metastasis: liver is commonly the sole site of metastasis for CRC and represents a major cause of mortality in CRC patients (Jin *et al.*, 2012). Also in our study, the most frequent metastases appear in the hepatic area (43.94%).

Therapeutic Conduct: as our results show, surgery remains the first choice of therapy for patients with CRC (Huang *et al.*, 2020).

Chemotherapy: 104 cases in our series (44.06%), were treated with adjuvant chemotherapy and 32% with palliative chemotherapy.

CONCLUSION

According to the present study, we can affirm that our patients were victims of a late diagnosis due to the ignorance of their pathology, which unfortunately was already present at the time of the examinations requested by the doctors.

These considerations underline the importance of information and health education campaigns, in order to encourage the population to consult from the beginning of the functional signs.

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Ethics approval: The ethics committee of the university Hospital approved our study.

Conflict of interest: The authors declare no conflicts of interest.

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