

# Risks and Histoprognotic Factors of Colorectal Cancer in East of Algeria

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## ABSTRACT

The frequency of colorectal cancer (CRC) is gradually increasing in the Algerian population. It ranks 3rd among the most common cancers.

Diet and lifestyle are the factors that plays a role in the development of these cancers.

CRC is a major public health problem; it is essential to determine the factors causing this disease.

In our retrospective study conducted at the Cancer Center from January to December 2019, which involved 60 cases with CRC, it was noted that the most representative age group is between 51 and 60 years old (46.7%). There is a predominance of the female sex with 60% of the cases against 40% of the male sex.

Obesity Type 2 represents the highest rate of cases with 45% and overweight with 43.3%.

We note that 75% of patients have no surgical history and 25% are operated.

The left colon and the transverse colon are the most affected (53.85% and 30.77%). It is noted that the class with the highest rate is grade T3N2Mx with 46% of cases.

Our results show that obesity, as well as diabetes and hypertension and family history of digestive cancers are closely related to colorectal risk.

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## INTRODUCTION

In Algeria, the incidence of this cancer remains low compared to developed countries with 14 cases/10,000 inhabitants in men and 13.8 cases/10,000 inhabitants in women. (Abes, 2015), this type of cancer is more common in men than in women and generally occurs after the age of 50, it is the leading cause of death from cancer and the second most common type (Abid, 2009)

Environmental factors that may contribute to the development of some cancers, such as lifestyle, dietary habits, and specific drugs, can affect the chance of developing CRC. The majority of cases of CRC occur in industrialized nations since it has been closely linked to a Western lifestyle: obesity, meat intake, excessive flushing, cigarette smoking, and alcohol drinking. The incidence of CRC has increased globally in tandem with the developing economy (Gataa, Z., 2017).

The objective of this study is to identify the various factors which favor the development of CRC within the framework of a study based on a semi-quantitative and qualitative questionnaire of 30 cases followed within the radiotherapy department at the level of the anti-inflammatory center. cancer (CAC) Batna and 30 cases followed in the operating room at CHU Batna.

## MATERIALS AND METHODS

From January to December 2019, 30 patients with CRC were monitored in the radiotherapy department at the Batna anti-cancer center (CAC) and 30 cases monitored in the operating theater at the CHU level.

On the statistical level, all the information was centralized on the SPSS 25 software which allowed the analysis of the results. (Table 1)

### KEYWORDS:

Colorectal cancer,  
Factor risk  
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**Table 1:** Epidemiological characteristics of patients

Characteristic	Number of patients (%)
Average age (51-60)	46.7
Sex	14
Man	24
Women	36
Weight (66-70)	16.7
Obesity Type 2	45
low fiber diet	76.7
Tobacco consumption	40
<i>Medical history</i>	
Any	33.3
hypertension	35
DID	21
ASTHMA	6.7
<i>Family history</i>	
1st degree	53.3
2nd degree	26.7
<i>Position of the tumor</i>	
Right colon	7.7
Left colon	53.8
Transverse colon	30.8
<i>TNM Classification</i>	
T3N2Mx	46%
T3N2M0	10%
T3N0M1	14
T3N0M0	6
T3N1Mx	10
T3N2M1	6
T3NxM0	6
8 (TON1Mx)	2

## RESULTS AND DISCUSSIONS

We observe in our series of 60 patients that age is more significant between 51 and 60 years with an average of 38.3. Our results are similar to the studies of Mallem (2010), Sedrati et al (2013), Maamri (2015), which indicate that the most representative age group of CCR is between 50 and 59 years old. (Mallem, 2010), (Maamri. 2015), (Sedrati, 2013).

There is a female predominance with a rate of 60%; on the other hand, the majority of studies show that there is a male predominance. These results are in agreement with a Moroccan retrospective study showing a female predominance with 50.75% of women and 49.24% of men. (El Housse, 2015).

There is a predominance in patients weighing less than 60 kg with a rate of 25%. Type 2 obesity is the most representative with 45%, followed by overweight patients with 43.33%. This observation is similar to that of a recent study carried out in the United States, which revealed that two-thirds of cancer patients are overweight (BMI is over 25) and half of these are obese. This study shows a relationship between obesity and an increased risk of colorectal cancer (Blomain, 2016).

Prospective case-control studies have always associated excess weight (or body mass index BMI (kg/m<sup>2</sup>)) with an increased risk of colorectal cancer (Dai, 2007).

Our results are statistically significant and similar to a meta-analysis carried out on 56 case-control and cohort studies, the results of which show that people with overweight (BMI

between 27.5 and 29.5) have an increased risk of developing CRC with 24 % and obese people (BMI over 30) have a 41% risk (Chan, 2010). A recent study carried out in the United States reveals that two thirds of cancer patients are overweight (BMI is over 25) and half of these are obese. This study shows a relationship between obesity and increased risk of cancer (Blomain, 2016).

It is noted that the patients have a diet low in fiber (76.79%). These results are in agreement with a prospective European multi-centre international EPIC study. These results also suggested that dietary fiber could play a protective role against CRC (Fabre 2000), (Jänne, 2000).

In our study, we note that arterial hypertension (HTA) and insulin-dependent diabetes (IDD) are the most representative diseases with respectively 35% and 21%.

We have 53.3% of patients with a first-degree familial risk of CRC. Our results are consistent with the study by Orsini and Wolk which shows from a meta-analysis of 15 studies, including more than 2.5 million patients that people with diabetes have a 30% higher risk of CRC compared to non-diabetics. (Chan, 2010).

A relationship between diabetes and cancer has been clearly demonstrated. In fact, we observe in diabetic patients an increase in the occurrence of different types of cancer, in particular pancreatic, hepatic and colorectal cancer (Gariani, 2010). According to the National Cancer Institute, the risk of developing this type of cancer is two to two and a half times higher when a first-degree family member (parent, brother, sister, or child) has already had colorectal cancer (Cancerinfo Guide, 2020).

The left colon and the transverse colon are the most frequently touched with 53.85% and 30.77%. At the level of the rectum, we observe that the upper part of the rectum and the middle rectum are the most frequent with 23.9%. These results are consistent with the study by the National Cancer Institute, where 40,500 new cases were diagnosed in 2011, two thirds of which were located in the colon, just under a third in the rectum. Thus, according to western registries, the results conducted show that the incidence of left colon cancer is higher than that of right colon cancer (Fabre, 2000), unlike the Arizona cancer registry showing that tumors on the right side were more common among white and African Americans (Jandova, 2015).

Lymph node involvement is an important prognostic factor that predicts metastasis spread. Our series shows that the class with the highest rate is T3N2Mx with 46%, this observation is consistent with those of Tebibel (2014) where patients have stage IIA tumors (pT3NXMX), followed by 12 individuals or 17.64% at stage IIIC (pT3N2MX) (Tebibel, 2014).

## CONCLUSION

Colorectal cancer presents a real public health problem in the world due to its high frequency compared to other diseases.

Our retrospective study made it possible to highlight certain risk factors for colorectal cancer and to trace the profile of patients belonging to a population of the wilaya of Batna.

It was carried out on a population of 30 patients with CRC who were monitored in the radiotherapy department at the anti-cancer center (CAC) Batna and 30 cases monitored in the operating theater at the CHU Batna.

The results of our studies affect subjects aged on average 38.3 years with a predominance of female patients.

BMI is considered a powerful risk factor; our patients have a high rate of BMI where we observe a state of overweight and type 2 obesity in more than 80% of cases. The class with the highest rate is T3N2Mx with 46%,

CRC is multifactorial (There are genetic factors, environmental factors, lifestyle risk factors, and background risk factors.

From our result, we can deduce that the different factors that allowed CRC to occur are the following: age, obesity and overweight, meat consumption, smoking, family history such as diabetes and risk.

Ethical approval :MY WORK DOES NOT REQUIRE ANY ETHICS APPROVAL BECAUSE IT IS AN EPIDEMIOLOGICAL STUDY

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