Revista MedEs
Revista Científica Estudiantil de Matanzas
MedEst. 2025 Vol.5; e395 ISSN: 2789-7567 RNPS: 2524

ORIGINAL ARTICLE

Behavior of advanced colorectal cancer diagnosed in the Department of Gastroenterology, Matanzas 2023

Comportamiento del cáncer colorrectal avanzado diagnosticado en el departamento de Gastroenterología, Matanzas 2023

Roxana Ávalos García [1*], https://orcid.org/0000-0003-4561-1676

Pedro Del Valle Llufrío [1], https://orcid.org/0000-0003-2212-0727

Gerardo Ambioris Tejada Fernández [1], https://orcid.org/0009-0008-6066-1675

Félix Manuel Ponce Rodríguez [1], https://orcid.org/0009-0009-7725-3253

Juliana Mercedes Tarajano Márquez [1], https://orcid.org/0009-0003-1613-3748

Caridad Caballero Boza [2], https://orcid.org/0000-0002-8393-9245

[1] "Faustino Pérez" Provincial Teaching Clinical-Surgical Hospital. Matanzas, Cuba.

[2] "Eliseo Noel Caamaño" Provincial Pediatric Hospital. Matanzas, Cuba.

***Corresponding author:** roxyavalos.mtz@infomed.sld.cu

Received: 25/02/2025

Accepted: 15/07/2025

How to cite this article: Ávalos-García R, Del Valle-LLufrío P, Tejada-Fernández GA, Ponce-Rodríguez FM, Tarajano-Márquez JM, Caballero-Boza C. Behavior of advanced colorectal cancer diagnosed in the Department of Gastroenterology, Matanzas 2023. MedEst. [Internet]. 2025 [cited access date]; 5:e395. Available in: https://revmedest.sld.cu/index.php/medest/article/view/395

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

ABSTRACT

Introduction: colorectal cancer (CRC) causes high morbidity and mortality worldwide, in Cuba, and in Matanzas. Symptoms vary depending on the location of the tumor and the stage of the disease.

Objective: to determine the behavior of advanced colorectal cancer diagnosed in the Gastroenterology Department.

Methods: a descriptive, prospective study was conducted at the Faustino Pérez Provincial Clinical and Surgical Teaching Hospital in Matanzas, from January to December 2023. The sample consisted of 102 patients with a clinical, endoscopic, and histological diagnosis of CRC, seen in a multidisciplinary gastrointestinal consultation. Variables such as age group, sex, risk factors, presentation, endoscopic and histological type of lesion, location, stage, and treatment were analyzed. Data were collected on a spreadsheet prepared by the authors.

Results: the predominant group was male, aged 61 to 80 years, with poor lifestyle habits and attitudes such as smoking, frequent alcohol consumption, obesity, a sedentary lifestyle, low intake of fruits, grains, and vegetables, and consumption of red beans more than three times a week. The predominant presentation was anemia, and the most common location was the rectosigmoid colon. The most common type of ulcerated, circumscribed tumor was the endoscopy. Adenocarcinoma was the most common histological type in patients with stage II disease who had curative surgical treatment.

Conclusions: the results demonstrated that CRC continues to be a health problem in Matanzas, but it can be diagnosed in early stages of the disease, with curative treatment options available.

Keywords: Colorectal Cancer; Colon Neoplasia; Colon Tumor; Colon Adenocarcinoma

RESUMEN

Introducción: el cáncer colorrectal (CCR) provoca elevada morbimortalidad en el mundo, en Cuba y en Matanzas. Los síntomas varían según la localización del tumor y el estadio de la enfermedad.

Objetivo: determinar el comportamiento del cáncer colorrectal avanzado diagnosticado en el departamento de Gastroenterología.

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

Métodos: se realizó un estudio descriptivo, prospectivo en el Hospital Provincial Clínico Quirúrgico Docente "Faustino Pérez" de Matanzas, de enero a diciembre del 2023. El universo fue de 102 pacientes con diagnóstico clínico, endoscópico e histológico de CCR, atendidos en consulta multidisciplinaria de vía digestiva. Se analizaron variables como: grupo etario, sexo, factores de riesgo, forma de presentación, tipo endoscópico e histológico de la lesión, localización, estadio y tratamiento. Los datos se recogieron en una planilla elaborada por los autores.

Resultados: predominaron los pacientes de 61 a 80 años, del sexo masculino, con hábitos y estilos de vida inadecuados como: tabaquismo, consumo frecuente de alcohol, obesidad, sedentarismo, poca ingestión de frutas, cereales y verduras e ingestión de canes rojas más de tres veces a la semana. La forma de presentación predominante fue la anemia y la localización más frecuente el rectosigmoide. El tumor tipo II ulcerado delimitado prevaleció en la endoscopia. El adenocarcinoma fue el tipo histológico más frecuente en pacientes con estadio II de la enfermedad con tratamiento quirúrgico curativo.

Conclusiones: los resultados demostraron que el CCR sigue siendo un problema de salud en Matanzas, pero se logra diagnosticar en estadios iniciales de la enfermedad con posibilidades de tratamiento curativo.

Palabras clave: Adenocarcinoma de Colon; Cáncer colorrectal; Neoplasia de colon; Tumor de colon

INTRODUCTION

Colorectal cancer (CRC) is an uncontrolled growth of cells in the colon and/or rectum. Colorectal cancer generally begins as a growth on the inner lining of the colon or rectum, called a polyp. [1] This type of cancer is one of the easiest to diagnose. Cure rates are high if detected early because it also takes a long time to develop. Colorectal cancer constitutes a major health problem due to a series of changes that begin with a mutation or a similar process and continue with progression, in which genetic and environmental factors may be involved. [2]

Colorectal cancer has a long evolution, and its symptoms can vary depending on the location of the tumor. Those found in the ascending colon usually cause anemia, changes in bowel habits, and dyspepsia. However, those located in the descending colon present with gastrointestinal bleeding, abdominal pain, and a palpable tumor. The most common discomfort occurs in the advanced stages of the disease. However, these symptoms are not exclusive to colon

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

cancer and can occur in other conditions such as hemorrhoids or certain digestive disorders. [3]

It is recommended to see a doctor as soon as these symptoms appear to facilitate a proper diagnosis. Patients with colon cancer may, in some cases, experience diarrhea and, in others, constipation. The latter is common in those who previously had a normal bowel rhythm. However, more frequently, the patient suffers periods of constipation combined with periods of diarrhea. [4]

CRC is one of the most common cancers worldwide. [5] In Cuba, the mortality rate is 174,6 per 100,000 inhabitants, and the number of deaths increases significantly from year to year. It is the leading cause of years of potential life lost (17,2 years), the fifth leading cause of incidence, and the third leading cause of mortality for both sexes. In Matanzas, the death rate from malignant intestinal tumors, excluding the rectum, increases each year. [6,7]

The aging population, combined with unfavorable risk factors, habits, and lifestyles, may be contributing to this increase. [8,9] Overall, the lifetime risk of developing colorectal cancer is approximately 1 in 23 (4,3 %) for men and 1 in 25 (4,0 %) for women. The risk is slightly lower in women than in men. Other factors may also affect the risk of developing colorectal cancer. [9]

Previous institutional studies reported a decrease in the incidence of diagnosed CRC, in compliance with the national screening program for this entity in the past decade. The COVID-19 pandemic caused a decrease in the total number of diagnostic endoscopic procedures performed in 2020-2021 to ensure social distancing as a measure to combat the spread of the coronavirus. This may have influenced the fact that many cancer patients with CRC presented to the emergency department with symptoms of some complication, as they did not receive an early diagnosis of the disease.

Therefore, this study aims to determine the behavior of advanced CRC diagnosed in the Gastroenterology Department with the restoration of endoscopic procedures in the Matanzas region.

MATERIALS AND METHODS

A descriptive, prospective study was conducted at the "Faustino Pérez" Provincial Clinical and Surgical Teaching Hospital in Matanzas, Cuba, between January and December 2023. The sample consisted of 102 patients with a clinical, endoscopic, and histological diagnosis of CRC who met the selection criteria and were seen in a multidisciplinary gastrointestinal consultation. Inclusion criteria: patients over 18 years of age of both sexes with an

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

endoscopic and histological diagnosis of CRC and consent to participate in the study. Exclusion criteria: patients whose histological diagnosis could not be confirmed for any reason and who decided to withdraw from the study.

Variables such as age group, sex, risk factors, presentation, endoscopic and histological type of lesion, location, stage, and treatment were analyzed. Data were collected on a form prepared by the authors. The results were presented in tables as numbers, percentages, and ratios. The study complied with the Declaration of Helsinki and was approved by the Institutional Ethics Committee. Anonymity, confidentiality, and written informed consent were guaranteed. The authors declare no conflicts of interest and no external funding.

RESULTS

Of the 102 patients studied, those aged 61 to 80 years predominated, accounting for 45,10 %; 66 patients were male, representing 64,71 % (Table 1).

Table 1. Distribution of patients with colorectal cancer by age group and sex

Age group	Male		Female		Total	
	No	%	No	%	No	%
From 18 to 40 years old	1	0,98	1	0,98	2	1,96
From 41 to 60 years old	34	33,33	10	9,80	44	43,14
From 61 to 80 years old	26	25,49	20	19,61	46	45,10
80 and over	5	4,90	5	4,90	10	9,80
Total	66	64,71	36	35,29	102	100

Source: Data collection form

Table 2 showed a predominance of 93 patients with poor habits and lifestyles, such as smoking, frequent alcohol consumption, obesity, a sedentary lifestyle, low intake of fruits, grains, and vegetables, and eating red beans more than three times a week, which represented 91,18 % of the total, with similar behavior in both sexes.

Table 2. Distribution of patients with colorectal cancer according to risk factors

Risk Factors	Male	Female	Total

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

	No	%	No	%	No	%
Genetic	16	15,69	10	9,80	26	25,49
Personal medical history	35	34,31	21	20,59	56	54,90
Habits and lifestyles	60	58,82	33	32,35	93	91,18
Environmental	0	0	3	2,94	3	2,94

Source: Data collection form

Table 3 shows the clinical presentations, with anemia predominating in 40 cases (39,22 % of the total), 30 in men and 10 in women, followed by gastrointestinal bleeding in 29 cases (28,43 %).

Table 3. Distribution of patients with colorectal cancer according to clinical presentation

Clinical presentations	Male		Female		Total	
	No	%	No	%	No	%
Dyspepsia	2	1,96	2	1,96	4	3,92
Anemia	30	29,41	10	9,80	40	39,22
Hemorrhage	16	15,69	13	12,75	29	28,43
Obstruction	8	7,84	2	1,96	10	9,80
Inflammation	4	3,92	5	4,90	9	8,82
Palpable tumor	6	5,88	4	3,92	10	9,80

Source: Data collection form

The most common location was the rectosigmoid colon, with 46 cases, representing 45,10 % of the tumors, according to Table 4.

Table 4. Distribution of patients with colorectal cancer by tumor location

Tumor location	Male	Female	Total

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

	No	%	No	%	No	%
Rectosigmoid colon	30	29,41	16	15,69	46	45,10
Ascending colon	5	4,90	2	1,96	7	6,86
Cecum	8	7,84	3	2,94	11	10,78
Transverse colon	8	7,84	3	2,94	11	10,78
Descending colon	12	11,76	12	11,76	24	23,53
Total	66	64,71	36	35,29	102	100,00

Source: Data collection form

In Table 5, the predominant endoscopic tumor type was ulcerated type II, defined in 45 patients (44,12 % of the total), followed by polypoid type I, with 30 cases (29,41 %).

Table 5. Distribution of patients with colorectal cancer by endoscopic tumor type (Paris Classification)

Endoscopic tumor type	Male		Female		Total	
	No	%	No	%	No	%
Type I: Polypoid	20	19,61	10	9,80	30	29,41
Type II: Delimited ulceration	29	28,43	16	15,69	45	44,12
Type III: Infiltrating ulceration	11	10,78	7	6,86	18	17,65
Type IV: Diffuse infiltrating	4	3,92	2	1,96	6	5,88
Type V: Advanced, unclassifiable	2	1,96	1	0,98	3	2,94

Source: Data collection form

Table 6 showed a predominance of patients diagnosed with stage II disease, with 48 patients. Of these, 38 underwent curative treatment (37,25 %), one patient received neoadjuvant oncologic treatment and surgery (0,98 %), and nine patients underwent curative radiotherapy and surgery. The latter were those with tumors located in the rectum.

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

Table 6. Distribution of patients with colorectal cancer according to tumor stage and definitive management.

Tumor stage	Final conduct									
	Curative surgery		Palliative surgery		Neoadjuvant Oncology Treatment and Surgery		Adjuvant oncological treatment and surgery		Radiotherapy and curative surgeries	
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**
Stage 0	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
Stage I	30	29,41	0	0,00	0	0,00	0	0,00	0	0,00
Stage II	38	37,25	0	0,00	1	0,98	0	0,00	9	8,82
Stage III	3	2,94	0	0,00	6	5,88	4	3,92	1	0,98
Stage IV	0	0,00	1	0,98	5	4,90	4	3,92	0	0,00

Source: Data collection form.

DISSCUSION

The study found that colon cancer incidence increases over the years, being frequent in patients over 50 years of age, as also reported by Galiano de Sánchez, [10] whose results coincided with the present study. Ahsan Raza et al., [11] also pointed out that the greatest increase in colon cancer occurs during the fifth decade of life. In relation to these criteria, the National Academy of Medicine of Mexico stated, [12] in terms of age distribution, that colon cancer is observed as a disease typical of adulthood and a very marked increase in the incidence rate from 45 years of age in both men and women, this increase continues until reaching its maximum value in the population of 65 years and older (164 and 117 per 100 000 inhabitants, respectively). Regarding incidence rates by gender, it was observed that both the overall

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

incidence rate (16,6 vs. 15,3 per 100 000 inhabitants) and the rates by age group are practically equivalent between the sexes. [13]

In fact, the Pan American Health Organization published a report that colon cancer is more common in the Caribbean, with a rate adjusted to the world population of 15,5 per 100 000 inhabitants. It ranks third in cancer incidence for both sexes and accounts for 8-9 % of all new cases. In Central America, it ranks fourth among males, with a rate adjusted to the world population of 9,5 and fifth among females, with a rate adjusted to the world population of 9,1. [5]

The reports are conclusive in supporting the results. Colon cancer incidence increases with age, and the risk becomes latent after the age of 60, and it can affect both sexes equally. Regarding dietary habits, it is known that consuming diets rich in saturated fats from animal sources increases the risk of colon cancer. It has been suggested that the type of fat is less important once total calorie intake is adjusted for weight and age. In contrast, the intake of omega-3 polyunsaturated fats has been shown to have a protective effect, as it inhibits the βII signal of protein kinase C and restores the response of the transforming growth factor β (TGFβ) receptor II. [14,15]

The consumption of red meat is often an added risk factor for colon cancer in poor dietary habits. The temperature at which the meat is cooked plays a role, as higher temperatures produce more heterocyclic amines. Similarly, if the meat is fried or barbecued, in fact, in these cases, the consumption of meat with these characteristics doubles the prevalence of adenomas in colon cancer. [16]

It is important to note that the coexistence of two or more risk factors increases the risk of colon cancer. Classifications sometimes overlap when referring to environmental factors and toxic habits, so the presence of multiple risk factors is an important aspect in determining the prevalence of this cancer in the population.

The presentation depends on the location of the tumor, with lower gastrointestinal bleeding being common, as tumors of the descending colon are more common than tumors of other segments, followed by the rectosigmoid colon. However, the study showed a predominance of anemia in patients, which is a clinical manifestation of tumors of the ascending colon, where gastrointestinal bleeding often occurs occultly. However, in many cases, signs of scant, recurrent bleeding may appear, and the bleeding may not show any interest until it impacts daily life, as occurred in these cases.

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

Galiano de Sánchez [10] suggested that when bleeding is evident and abundant, it almost always corresponds to advanced stages of the disease.

The most common signs and symptoms of distal cancer (colon descending to the rectum) may present with changes in bowel habits, decreased stool caliber, and gastrointestinal bleeding. [15,16] The division of colon cancer into right and left colons may contribute to classificatory and/or statistical discrepancies, but among the manifestations, the presence of blood in stools is clearly seen as a prevalent clinical manifestation in this type of patient. This allowed us to corroborate the results of the investigation, which coincided with the reviewed studies.

Rectosigmoid colon tumors were more common in the cases studied. This location is consistent with several international studies. [17,18] A study conducted at another institution in the region by Umpierrez García et al. [19] also reported that the frequency of tumors in this segment is due to the anatomical influence of the angulations of the sigmoid colon, with narrowing of the lumen, which makes complete emptying of the cavity difficult in patients with risk factors such as those described above—poor eating habits and lifestyle choices. These factors are easily modifiable through primary care health measures.

National and international studies report that more than 50 % of colon tumors are polypoid, while the ulcerated and unclassifiable advanced forms are less common. The polypoid subtype is a more common exophytic tumor in the colon, which usually presents with iron deficiency anemia due to blood loss caused by superficial erosions of the tumor mass. Villous cancers are exophytic protrusions, sometimes of considerable size, with a cauliflower-shaped surface and a tendency to ulcerate, with a predilection for the rectum. The ulcerated type is the most common form of rectocolic cancer, with prominent, irregular edges that are hard to the touch with biopsy forceps. [20] This ulceration can grow and encompass the entire intestinal circumference, clearly compromising the colonic lumen. The characteristic radiological image is the "napkin-ring stricture" or "bitten apple," as occurred in the cases studied. [21]

Significantly, most patients had an adenocarcinoma-type epithelial tumor, except for one who presented a mesenchymal tumor, specifically a lymphoma. A similar result was reported by García Espinosa A et al. [22] in a study conducted in Pinar del Río in 2020, which reported a predominance of adenocarcinoma in 99,39 % of patients diagnosed with colorectal cancer. Guibert Adolfo LA et al. [23] in Camagüey found similar results, with

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

adenocarcinoma being the most common histological variety. This histological variety develops due to factors that promote mucosal damage, as mentioned above, which promote changes and mutations at the cellular and glandular levels in the carcinogenesis process. [18]

Surgery is the cornerstone of colon cancer treatment; 70 to 80 % of patients have tumors that can be resected with curative intent, although adjuvant radiotherapy, chemotherapy, or both are useful in selected patients. Among patients who have undergone resection for localized disease, the five-year survival rate is 90 %, as reported in their study by Calva Arcos M and Acevedo Tirado MT. [21]

Other experts [14,24,25] suggest that two out of three patients with colon cancer are candidates for surgery. Surgery involves complete resection of the tumor, with the edges of the colon section removed from the tumor to allow tumor-free margins. Furthermore, surgery must resect the lymph nodes associated with the tumor site. This lymph node resection must be performed down to the base of the associated vascular territories. This criterion emphasizes that surgery seeks complete cancer cure in patients with colonic tumors and is another element that leads to its practice whenever feasible. These criteria lead to the declaration that the rationale for adjuvant chemotherapy treatment is based on the possibility of eliminating residual microscopic disease or possible micrometastases after potentially curative surgery. Therefore, surgery will always be the survival or curative procedure par excellence in colon cancer, as it is in other neoplasms.

The authors acknowledge the limitations of the study's single-center, descriptive design, which may limit the generalization of its findings to other populations. Although the sample of 102 patients provides relevant data, its small size did not allow for detailed analyses by specific subgroups. Furthermore, potentially influential factors such as access to screening programs, the presence of associated comorbidities, or the cumulative impact of the COVID-19 pandemic on delayed diagnosis were not systematically assessed. Another important limitation is the cross-sectional nature of the study, which prevented the evaluation of long-term outcomes such as overall survival or sustained therapeutic response. Despite these limitations, which do not invalidate the results obtained, the authors highlight the need for future multicenter studies with analytical designs that allow for the evaluation of prognostic variables with longer follow-up periods.

CONCLUSIONS

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

The behavior of CRC in the patients studied was similar to national and international reports. It was shown that the diagnosed patients presented with early stages of the disease for which surgery was the curative treatment. However, there is still much to be changed in the way and lifestyle of the population to reduce morbidity and mortality from this entity, which still constitutes a health problem.

BIBLIOGRAPHIC REFERENCES

1. Bofill-Falcón AL, Hernández-Ortega A, Sánchez-Cruz JC, Collazo-García S, Sánchez-Hernández RC. Causas de muerte en pacientes con cáncer colorrectal en el quinquenio 2016-2020. Colón, Matanzas. Rev Méd Electrón. [Internet] 2022 [cited 22/11/2024]; 44(3). Available in: https://revmedicaelectronica.sld.cu/index.php/rme/article/view/4876

2. The American Cancer Society medical and editorial content team. Chemotherapy for Colorectal Cancer [Internet] 2024 [cited 22/11/2024]; 5(1). Available in: https://www.cancer.org/cancer/types/colon-rectal-cancer/treating/chemotherapy.html

3. Davidson KW, Barry MJ, Mangione CM, Cabana M, Caughey AB, Davis EM, et al. US Preventive Services Task Force. Screening for Colorectal Cancer: US Preventive Services Task Force Recommendation Statement. JAMA. [Internet] 2021 [cited 22/11/2024]; 325(19):1965–77. Available in: https://doi.org/10.1001/jama.2021.6238 PMID:34003218

4. Vogel JD, Felder SI, Bhama AR, Hawkins AT, Langenfeld SJ, Shaffer VO, et al. The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Management of Colon Cancer. Dis Colon Rectum. [Internet] 2022 [cited 22/11/2024]; 65(2):148–77. Available in: https://doi.org/10.1097/DCR.0000000000002323 PMID:34775402

5. World Health Organization. Cancer incidence, mortality and prevalence worldwide. International Agency for Research on Cancer. Globocan [Internet] 2021. [cited 22/11/2024]. Available in: https://acsjournals.onlinelibrary.wiley.com/doi/abs/10.3322/caac.21660

6. Trujillo-Pérez YL., Rojas-Peláez Y., Carmenates-Álvarez BM., Reyes-Escobar AD., Pérez-Álvarez M. Comportamiento del cáncer colorrectal en el Hospital Provincial Clínico Quirúrgico Docente Amalia Simoni. AMC. [Internet] 2019 [cited 22/11/2024]; 23(2):188-197. Available in: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1025-02552019000200188&lng=es

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

7. MINSAP. Anuario Estadístico de Salud. Ministerio de Salud Pública de la República de Cuba. Dirección Nacional de Estadísticas para la Salud. 2020. La Habana. [Internet] 2021 [cited 22/11/2024]; Available in: https://salud.msp.gob.cu/disponible-edicion-49-del-anuario-estadistico-de-salud/

8. Álvarez-Escobar B, Mirabal-Requena J, Naranjo-Hernández Y, Valdés-Álvarez V. Sobrevida en adultos mayores con cáncer colorrectal: una revisión bibliográfica. Arch méd Camagüey. [Internet] 2021 [cited 22/11/2024]; 25 (1). Available in: https://revistaamc.sld.cu/index.php/amc/article/view/7097

9. Ávila Díaz D., Hernández González EA., Mitjans Hernández D. Abordaje sobre los factores de riesgo y tamizaje del cáncer colorrectal. Artículo de Revisión. I Jornada Virtual de gastroenterología y I Fórum de COVID 19 y Gastroenterología. Ciego de Ávila 2022. [Internet] 2022. [cited 22/11/2024]. Available in: https://gastroavila2021.sld.cu/index.php/gastroavila/2021/paper/viewFile/18/74

10. Galiano de Sánchez MT. Cáncer colorrectal (CCR). Actualización. Gastroenterologa, Clínica Marly, Bogora, Colombia. Asociaciones Colombianas de Gastroenterología, Endoscopia digestiva, Coloproctología y Hepatología. [Internet] 2015, [cited 22/11/2024]; 20(1): 43-53. Available in: https://www.gastrocol.com/congreso/

11. Ahsan Raza S, Jawed I, Jamil Zoorob R, Lee Salemi J. Completeness of Cancer Case Ascertainment in International Cancer Registries: Exploring the Issue of Gender Disparities. Front. Oncol. [Internet] 2020 [cited 23/11/2024]. Available in: https://doi.org/10.3389/fonc.2020.01148

12. Academia Nacional de Medicina de México. Epidemiología del cáncer de colon y recto. Acta de la Sesión "Extramuros". Programa integral de prevención y control de cáncer. Ciudad de México. [Internet] 2020 [cited 23/11/2024]. Available in: https://www.anmm.org.mx/actas2019/SE-20-marzo-2019.pdf

13. Morgan E, Arnold M, Gini A, Lorenzoni V, Cabasag CJ, Laversanne M, et al. Global burden of colorectal cancer in 2020 and 2040: incidence and mortality estimates from GLOBOCAN. Gut. [Internet] 2023 [cited 23/11/2024]; 72(2):338–44. Available in: https://doi.org/10.1136/gutjnl-2022-327736 PMID:36604116

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

14. Moreta MJ, Llach J, Moreira L. Cáncer colorrectal: factores de riesgo, diagnóstico y cribado. Medicina. [Internet] 2022 [cited 23/11/2024];44(3):372-85. Available in: https://www.revistamedicina.net/index.php/Medicina/article/view/2183

15. Shaukat A, Kahi CJ, Burke CA, Rabeneck L, Sauer BG, Rex DK. ACG Clinical Guidelines: Colorectal Cancer Screening 2021. Am J Gastroenterol. [Internet] 2021 [cited 24/11/2024]; 116(3):458-79. doi: 10.14309/ajg.0000000000001122

16. Vanegas Moreno DP, Ramírez López LX, Limas Solanoc LM, Pedraza Bernal AM, Monroy Díaz AL. Factores asociados a cáncer colorrectal. Rev. Méd. Risaralda [Internet]. 2020 [cited 24/11/2024]; 26(1):68-77. Available in: https://10.22517/25395203.23111

17. Conde T, Rodríguez Pino MY, Barrios PJ, García BA, Suz J, Díaz NM. Caracterización por imagenología del cáncer de colon. MediSur. [Internet] 2018 [cited 24/11/2024]; 8(2):3-8. Available in: http://www.medisur.sld.cu/index.php/medisur/article/view/1122

18. Flores-Altamirano M, Montiel-Jarquín ÁJ, López-Colombo A, López-Bernal CA, García-Galicia A, Garza-Sánchez J. Características clínicas e histopatológicas de los tumores malignos de colon por localización. Rev Med Inst Mex Seguro Soc. [Internet] 2023 [cited 23/11/2024]; 61(5):610-616. Spanish. doi: 10.5281/zenodo.8316446. PMID: 37769029; PMCID: PMC10599786.

19. Umpierrez García I, Castellanos Suárez J, Avalos García R, Morales Díaz M, Román Castellini EV, Cambet Umpierrez Y. Comportamiento del cáncer colorrectal diagnosticado por colonoscopia en el Hospital "Mario Muñoz Monroy". Matanzas. Rev Méd Electrón. [Internet] 2019 [cited 22/11/2024]; 41 (5). Available in: https://revmedicaelectronica.sld.cu/index.php/rme/article/view/3290

20. Sociedad Española de Oncología Médica. Caracterización clínica, epidemiológica y endoscópica del cáncer colorrectal. SEOM. [Internet]. [Internet] 2019 [cited 24/11/2024]. Available in: https://seom.org/images/Libro_Comunicaciones_SEOM2019.pdf

21. Calva Arcos M, Acevedo Tirado MT. Revisión y actualización en cáncer colorectal. Anales de Radiología México [Internet] 2019 [cited 24/11/2024]; (1):99-115. Available

in: http://www.revmedicaelectronica.sld.cu/index.php/rme/article/view/3290

22. García Espinosa A, García Villacampa G, Pérez González S. Caracterización clínica-epidemiológica del cáncer de colon y recto. Pinar del Río, 2012-2018. Actas del XXXI Fórum Nacional de Estudiantes de las Ciencias Médicas. Pinar del Río: Facultad de Ciencias Médicas "Dr. Ernesto Che Guevara de la Serna"; [Internet] 2020. [cited 21/11/2024]. Available in: http://www.forumestudiantilcienciasmedicas.sld.cu/index.php/forum/2020/paper/view/53

23. Guibert Adolfo LA, Quiroga Meriño LE, Estrada Brizuela Y, Maestre Ramos OM, Guilarte León G. Caracterización de los pacientes con cáncer de colon. Rev Arch Med Camagüey [Internet] 2018 [cited 23/11/2024]; 22(3):324-35. Available in: http://revistaamc.sld.cu/index.php/amc/article/view/5552/3140

24. Vogel JD, Felder SI, Bhama AR, Hawkins AT, Langenfeld SJ, Shaffer VO, et al. The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Management of Colon Cancer. Dis Colon Rectum. [Internet] 2022 [cited 23/11/2024]; 65(2):148–77. Available in: https://doi.org/10.1097/DCR.0000000000002323 PMID:34775402

25. Macdonald JS. Adjunvant therapy of colon cancer. CA Cancer J Clin [Internet] 2019 [cited 23/11/2024]; 49:202-219. Available in: https://pubmed.ncbi.nlm.nih.gov/11254865/

STATEMENT OF AUTHORSHIP

RAG: Conceptualization, data curation, funding acquisition, research, methodology, project administration, resources, software, supervision, validation, visualization, drafting, writing, reviewing, and editing the final work.

PdVLL: Conceptualization, data curation, research, methodology, supervision, validation, visualization.

GATF: Conceptualization, data curation, research, methodology, supervision, validation, visualization.

FMPR: Conceptualization, data curation, research, methodology, supervision, validation, visualization.

MedEst. 2025 Vol.5; e395
ISSN: 2789-7567 RNPS: 2524

JMTM: Conceptualization, data curation, research, methodology, supervision, validation, visualization.

CCB: Conceptualization, data curation, research, methodology, supervision, validation, visualization.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

SOURCES OF FUNDING

The authors declare that they received no funding for the development of this research.