



**ORIGINAL RESEARCH PAPER**

**Surgery**

**PATIENT PROFILE OF COLORECTAL CARCINOMA AT H. ADAM MALIK MEDAN HOSPITAL FROM 2009-2013**

**KEY WORDS:** Colorectal cancer, lifestyle, diet, physical activity.

<b>Tugiono</b>	Surgery Resident of University of North Sumatra
<b>Asrul*</b>	Plastic Surgery Division of Faculty of Medicine University of North Sumatra – H. Adam Malik Medan Central General Hospital *Corresponding Author
<b>Bachtiar Surya</b>	Plastic Surgery Division of Faculty of Medicine University of North Sumatra – H. Adam Malik Medan Central General Hospital.

**ABSTRACT**

**Objective:** Colorectal cancer is the third most common cancer in the world in men and women, the second largest cause of death in cancer, and the leading cause of death in gastrointestinal cancer. The purpose of this study was to determine the description of colorectal cancer patients at H. Adam Malik General Hospital, Medan.

**Material and Method:** This research is non-experimental, retrospective descriptive. The study was conducted in the Digestive Surgery sub-division of the Adam Malik General Hospital in Medan in 5 years from January 2014 to December 2018. Data obtained from the medical record status were described and then analyzed and the percentages were calculated. Data that has been calculated is then arranged into a graph. The results of data analysis in this study are displayed by tabulation and descriptive tables.

**Results:** During the period of the study found medical record data that fulfilled the inclusion and exclusion criteria as many as 92 medical record data. From 92 medical record data based on age found the number of patients ≤ 55 and > 55 years was 49 and 43 samples. Based on the gender found the sex with the highest number of colorectal carcinoma was 48 men (52.2%). The sample has an average age of 54.66 years. The youngest age is 15 years and the oldest is 87 years. In this study, 67.7% of respondents were alive and 32.3% died in the first 3 years. In this study the majority of sufferers with higher secondary / higher education levels were 71 patients (73.96%), had less economic status 64 patients (66.6%), did not smoke, 62 people (64.58%), normoweight namely 78 people, rare physical activity, namely 83 patients, consuming a fiber diet that is less, namely 73 people. All patients with colorectal carcinoma in this study were not alcoholic drinkers.

**Conclusion:** The general characteristics of colorectal carcinoma patients in this study were more women than men, secondary education level, poor economic status, no smoking, normoweight, rarely physical activity, lack of fiber and meat diet and not alcoholic drinkers.

**INTRODUCTION**

Colorectal cancer is a malignant neoplasm originating from the structure of the large intestine (colon) and or rectum. Colorectal cancer (CRC) is a leading cause of morbidity and mortality in more than 9% of all cancer events worldwide. This is the third largest overall cancer in the world and the fourth most frequent cause of death.

Generally, colon carcinoma is rarely found before the age of 40 unless they are a complication of ulcerative colitis, granulomatous colitis, familial multiple polyposis, Gardner's syndrome, and Turcot's syndrome. (Takayama, 2006; Gatalica, 2008)

In the general population, the risk of colorectal cancer will significantly increase at the age of 50 years and be twice as large in the next decade. Rectal carcinoma is more common in men than women, but there is no striking sex difference in carcinoma in other colon regions. From epidemiological studies, it is concluded that there are very large environmental influences, especially diets, that play a real role in the causes of colon cancer, whose role is greater than in rectal cancer. (Basdanis, 2011; Ashktorab, 2009)

Hereditary factors can also act as triggers for the emergence of this type of cancer. As the genetic influence of polyposis carcinoma syndrome can be explained according to Mendel's law, genetic predisposition to cancer can occur in the general population. First degree relatives of patients suffering from colorectal carcinoma have a three-fold greater risk than controls (Gatalica, 2008; Basdanis, 2011).

The main importance of polyps is that they have the potential to become colorectal cancer. The evolution of cancer itself is a gradual process, in which the process starts from mucous cell hyperplasia, adenoma formation, progression from dysplasia to malignant transformation and -

invasive cancer. Activation of oncogenes, gene suppression inactivation, and chromosomal deletion enables the development of adenoma formation, development and improvement of dysplasia and invasive carcinoma. (Bommer GT, 2008)

Based on the description above the researchers were very interested in conducting research on the description of patients suffering from colorectal cancer at the H. Adam Malik General Hospital in Medan.

**METHOD**

This study is a retrospective descriptive study conducted in the Digestive Surgery Subdivision of H. Adam Malik General Hospital in Medan with a total sampling technique from all medical record status of colorectal cancer patients in the Digestive Surgery Subdivision from January 1, 2014 to December 31, 2019 which has been diagnosed with histopathological results.

The inclusion criteria of this study were patients who had been diagnosed with colorectal carcinoma and defective operative measures had been carried out, and the complete data recorded in the statutory medical record in Adam Malik General Hospital Medan. The exclusion criteria of this study were medical records that were not recorded properly and correctly, and patients who refused to do definitive surgery.

Data obtained from the medical record status is described and then analyzed and the percentage calculated. Data that has been calculated is then arranged into a graph. The results of data analysis in this study are displayed by tabulation and descriptive tables.

All statistical calculations are carried out using a computer-based statistical program. This study was approved by the Hospital Health Research Ethics Committee of the Faculty of Medicine, University of North Sumatra / Haji Adam Malik.

**RESULTS**

Data obtained from medical record records of H. Adam Malik General Hospital Medan patients with ICD-10 diagnosis code: C18.-C20. Colorectal carcinoma over a period of 5 years from January 2014 to December 2018 obtained 550 patients. From the existing 550 data, a complete examination of the data was carried out so that there were 460 complete medical record status and included as inclusion criteria. Forty-six statuses were excluded because incomplete reporting and results of definitive therapy were not achieved for various reasons.

During the period of the study found medical record data that fulfilled the inclusion and exclusion criteria as many as 92 medical record data. From 92 medical record data based on age found the number of patients ≤ 55 and > 55 years was 49 and 43 samples. This can be seen in table 5.1. Based on the gender found the sex with the highest number of colorectal carcinoma was 48 men (52.2%).

**Table 2.x. General Characteristics of Patients with Colorectal Carcinoma**

Variable	Frequency (n)	Percentage (%)
<b>Age</b>		
≤ 55	49	53.3
> 55	43	46.7
<b>Sex</b>		
Female	48	52.2
Male	44	47.8
<b>Level of education</b>		
Low	21	22.8
Middle/High	71	77.2
<b>Economic status</b>		
Deficient	62	67.4
Enough	30	32.6
<b>Current conditio</b>		
Live	62	67.4
Die	30	32.6
<b>Body Mass Index</b>		
overweight	17	18.5
normoweight	75	81.5
<b>Smoking</b>		
Yes	32	34.8
No	60	65.2
<b>Physical Activity</b>		
Rarely	81	88.0
Often	11	12.0
<b>Fiber diet</b>		
Enough	19	20.7
Deficient	73	79.3
<b>Meat diet</b>		
Rarely	80	87.0
Often	12	13.0
<b>Drink Alcohol</b>		
Yes	0	0
No	92	100
Total	92	100

**DISCUSSION**

Data obtained from medical record records of H. Adam Malik General Hospital Medan patients with ICD-10 diagnosis code: C18.-C20. Colorectal carcinoma over a period of 5 years from January 2014 to December 2018 obtained a total number of sampling data in as many as 460 patients. The sample has an average age of 54.66 years. The youngest age is 15 years and the oldest is 87 years. In this study, 67.7% of respondents were alive and 32.3% died in the first 3 years. This is in accordance with the literature that patients with stage III colorectal carcinoma have a life expectancy in 5 years 20-50%.

Research by Roni getting the youngest age was 19 years old, while the oldest age was 84 years old. The results of the study by Kastomo DR and Soemardi A (2003) in Dharmais Cancer

Hospital received the youngest age of 20 years and the oldest 71 years. It can be seen that there are variations in the age of the sufferer in a place compared to other places.

The results of statistical tests with a 95% confidence level indicate that the value of  $p < 0.05$  means that there is a statistically significant relationship between the results of colorectal cancer treatment with age. From the literature it is mentioned that age is a risk factor for colorectal carcinoma that cannot be modified. The risk of getting colorectal carcinoma begins to increase after the age of 40 years and increases sharply at the age of 50-55 years, the risk has doubled every subsequent decade, as well as increasing life expectancy, the risk of cancer in the elderly will continue to increase (Olwin, 2007)

In this study, the sex of the majority of the patients was 52.2% and men 44%. This was in accordance with the research by Roni in 2008, in which the majority of women were 54%, while men were 46%. Research by Sander 2012 in Malang also received more female patients, 89 (54.6%). Research by the national health survey in 2007 found that more women with colorectal cancer were 53.4%, while men were 46.6%. From the Globocan 2002 literature: Cancer Incidence, Mortality and Prevalance Worldwide JARC Cancer Base No. 5 version 2.0 (2004) states that in the whole world, 9.5% of men with cancer have colorectal cancer, whereas in women the figure reaches 9.3% of the total number of cancer patients. According to women's literature, they tend to immediately visit health services if they have complaints. In contrast to men who often hide complaints, so when it is known the type of disease is already at an advanced level so it is difficult to cure. The results of the 2007 Riskesdas show that the proportion of women is higher than the proportion of male sex.

The results of statistical tests with a 95% confidence level indicate that the value of  $p > 0.05$  means that there is no statistically significant relationship between the results of colorectal cancer treatment with sex.

In this study, the majority of patients with higher secondary / higher education levels were 71 patients (77.2%) compared to low education, ie 21 patients (22.8%). Research by Roni found that the highest level of education was patients with colorectal carcinoma who went to hospital. Dr. M. Djamil is a secondary education level (54.7%), while the national health survey reveals the highest percentage of cases found in respondents with low education as much as 77.0%, in respondents with secondary education as much as 13.3%, and decreasing in respondents educated high which is 9.7%. The level of education is often associated with the level of individual knowledge. Individuals who have a lot of knowledge tend to behave and behave according to their knowledge. Supposedly with relatively higher education and easy access to information, they have a relatively lower risk of gastrointestinal tumors / cancers. According to Notoatmodjo (1993) someone with knowledge will prevent a disease. if not, then he won't do anything. Someone who has a lot of knowledge and information about an illness will certainly take positive actions in responding to his health such as the speed of seeking treatment and treating his illness in accordance with the prevailing health methods.

The results of statistical tests with a 95% confidence level indicate that there is no significant relationship between the level of education and the results of breast cancer treatment with a value of  $p > 0.05$ .

Most of the sufferers had less economic status of 62 patients (67.4%) compared to the economic status of 30 people (32.6%). This is consistent with Newman LA 2002's study that patients with high socioeconomic status have the ability to come to health facilities, both at first service and referral level services, while those with low socioeconomic patients who

already have free medical facilities still do not come to health facilities because of the difficulty of transportation costs and family costs that accompany patients. Based on the results of statistical tests with a 95% confidence level, it shows that there is a significant relationship between economic status and the results of colorectal cancer treatment with  $p = 0.024$ .

Most of the patients were non-smokers, namely 60 people (65.2%), patients who did not smoke 32 people (34.8%). The national health survey obtained from smoking behavior shows that the largest percentage of cases (70.6%) do not smoke. The non-smoking control group was 67.5%. Research in Japan by Otani et al. 2003 found a significant relationship between smoking and colorectal cancer. Research Jung et al. in Korea states that smoking behavior is an important determinant of the occurrence of tumors / cancers of the digestive tract (surveillance). Smoking produces various toxic compounds, including polycyclic aromatic hydrocarbons, heterocyclic aromatic amines, and N-nitroso compounds. This tobacco carcinogen can cause permanent damage to the colorectal mucosa that enters the circulation after bronchoalveolar absorption into the bloodstream or through direct contact after consumption. It can be explained that someone who has been diagnosed with a tumor / cancer is more likely to stop smoking. It would be easier to advise someone to quit smoking if it is already sick compared to someone who has never or has never been sick. Research Jung et al. in Korea stated that smoking behavior is an important determinant of the occurrence of tumors / cancers of the digestive tract and found that the risk among respondents who had a smoking behavior every day who had previously smoked (ex-smoker) was almost the same

Based on the results of statistical tests with a confidence degree of 95%, it shows that there is no significant relationship between smoking habits and the results of colorectal cancer treatment.

Most of the sufferers are normoweight which is 75 people, while overweight is 17 people. This is in accordance with the national health survey study which found that the most colorectal cancer was found in normal weight sufferers, namely 127 sufferers (54%). In the survey stated that obesity is believed to be an important risk factor especially in colorectal carcinoma, the mechanism that has been studied is the presence of insulin like growth factor axis and adiponectin. IFG1 causes changes in mitogenesis and antiapoptosis at the cellular level (Renehan). But obesity has 1.7 times the risk of gastrointestinal cancer compared to people who have thin weight. From several studies showing that animal fats are eaten (for example beef) to 70 grams a day can increase the risk of high cancer. Demolition of fat in the body will produce gallic acid. In high doses this acid is thought to be the cause of "colon cancer".

Based on the results of statistical tests with a 95% confidence level, it shows that there is no significant relationship between obesity and the results of colorectal cancer treatment.

Most of the patients with rare physical activity were 81 patients compared to those who had enough physical activity, 11 sufferers. Devita et al. Showed a linear relationship between physical activity and colorectal cancer survival, which can be interpreted that a decrease in physical activity will reduce cancer survival (Devita Vt, hellman Rosenberg 2001)

Based on the results of statistical tests with a 95% confidence level, it shows that there is a significant relationship between physical activity and the results of colorectal cancer treatment where  $p = 0.016$ .

Most people with colorectal carcinoma are consuming a fiber diet that is less than 73 people compared to a sufficient fiber

diet, which is 19. The national health survey found that most people with colorectal carcinoma were on a less fiber diet, 215 people (92.3%). Isidro et al at Soetomo Hospital concluded that there was no significant relationship between colorectal cancer and fiber diet, perhaps colorectal incidents were predisposed to other multifactors, namely genetic factors and toxic substances. The mechanism by which certain dietary fiber can act to reduce the risk of colon cancer is thought to involve dilution, absorption, and removal of carcinogens, promoters of kokarcinogenesis, and / or tumors present in the intestine. Food fiber binds to bile acids and carcinogens, and has the potential to reduce toxic effects (El-Bayoumy, 1997)

Several epidemiological studies state that there is no protective effect of fiber consumption in patients who have been diagnosed with colorectal carcinoma

Based on the results of statistical tests with a 95% confidence level, it shows that there is no significant relationship between the fiber diet and the results of colorectal cancer treatment.

Most sufferers have a meat diet that is rarely 80 people compared to a high-meat diet of 12 people. The national health survey gets a diet sometimes meat or fatty foods more than 174 people (70.2%), followed by a diet never meat as many as 44 people (17.7%). Literature says beef fat increases iron content in the body; this is thought to be the cause of "colon cancer". Fat is a high energy conductor, this indirectly stimulates the growth (development) of cancer cells in the body (Nashimoto, 2002).

Based on the results of statistical tests with a 95% confidence level, it shows that there is no significant relationship between the meat diet and the results of colorectal cancer treatment.

All patients with colorectal carcinoma in this study were not alcoholic drinkers. While the national health survey study also found that most people with colorectal carcinoma did not drink alcohol, namely 235 people (95.1%). The literature states that alcohol consumption can stimulate rectal cell proliferation and increase cancer risk (Scheppach, 2000). The incidence of TRC may be related to other causes such as genetics and other behaviors

**CONCLUSION**

The general characteristics of colorectal carcinoma patients in this study were more women than men, secondary education level, poor economic status, no smoking, normoweight, rarely physical activity, lack of fiber and meat diet and not alcoholic drinkers.

**REFERENCES**

1. Anderson WF, Umar A, Brawley OW. Colorectal carcinoma in black and white race. *Cancer and Metastasis Reviews*; Mar 2003; 22: 67 – 82
2. Anke H. Identification of key genes for carcinogenic pathways associated with colorectal adenoma-to-carcinoma progression. *Tumor Biol* 2010; 31: 89–96
3. Ashktorab H, Nourai M, Hosseinkhah F, Lee E, Rotimi C, Smoot D. A 50-Year Review of Colorectal Cancer in African Americans: Implications for Prevention and Treatment. *Dig Dis Sci*. 2009; 54: 1985–90
4. Basdanis G, et al. A retrospective analysis of 2000 cases with colorectal carcinoma. *Tech Coloproctol* 2011; 15: 107–10
5. Benson, et al. *Metastatic Colon Cancer, Version 3.2013 Featured Updates to the NCCN Guidelines*. *J Natl Compr Canc Netw*. 2013; 11: 141–52
6. Bommer GT, Fearon ER. *Molecular Abnormalities in Colon and Rectal Cancer in The Molecular Basis of Cancer 3rd Ed.* Mendelsohn j et al, Saunders. Philadelphia. 2008: 409-20
7. Bruewer M. Is Colonoscopy Alone Sufficient to Screen for Ulcerative Colitis-associated Colorectal Carcinoma?. *World J. Surg.* 2003; 27: 611–5
8. Chung YW, Han DS, Park YK, et al. Association of obesity, serum glucose and lipids with the risk of advanced colorectal adenoma and cancer: a case control study in Korea. *Dig Liver Dis* 2006; 38: 668–72.
9. Compton CC. *Colorectal Carcinoma: Diagnostic, Prognostic, and Molecular Features*. *Mod Pathol*. 2003; 16(4): 376–88
10. Corman ML. *Colon and Rectal Surgery*, 5 th Ed. Lippincot Williams & Wilkin Philadelphia. 2005 ; 767- 854
11. Fazeli MS, Adel MG, Lebaschi AH. *Colorectal Carcinoma: A Retrospective, Descriptive Study of Age, Gender, Subsite, Stage, and Differentiation in Iran from 1995 to 2001 as Observed in Tehran University*. *Dis Colon Rectum* 2007; 50: 990–5

12. Fernando GH, Julian PP, Joaquin MG, Nieves LR, Vincente MA. Can Early Diagnosis of Symptomatic Colorectal Cancer Improve the Prognosis?. *World J.Surg.* 2004;28:716-20
13. Frank Marusch, et all. The Impact of the Risk Factor "Age" on the Early Postoperative Results of Surgery for Colorectal Carcinoma and Its
14. Fujimori T, Fujii S, Saito N, Sugihara K. Pathological Diagnosis of Early Colorectal Carcinoma and Its Clinical Implications. *Digestion.* 2009;79:40-51
15. Gatalica Z, Torlakovic E. Pathology of the hereditary colorectal carcinoma. *Familial Cancer.* 2008;7:15-26
16. Habermann JK. Genomic instability and oncogene amplifications in colorectal adenomas predict recurrence and synchronous carcinoma. *Modern Pathology* 2011;24:542-55
17. José A. Álvarez RF, Baldonado IG, Álvarez BN. Obstructing Colorectal Carcinoma: Outcome and Risk Factors for Morbidity and Mortality. *Dig Surg.* 2005;22:174-81
18. Leonardo M, Magda MP, Antônio LF, Mônica MD, Rodrigo GS. Colorectal carcinoma in different age groups A histopathological analysis. *Int J Colorectal Dis.* 2012;27:249-55
19. Maurer CA. Colon cancer: resection standards. *Tech Coloproctol.* 2004; 8:29-32
20. Miliaras SE, et all. Management of colorectal cancer: 20 years' experience. *Tech Coloproctol.* 2004;8:68-71
21. Minopoulos GI, Lyratzopoulos N, Efremidou HI, Romanidis K, Koujoumtzi I, Manolas KJ. Emergency operations for carcinoma of the colon. *Tech Coloproctol.* 2004;8:235-7
22. Muto T, Watanabe T. Colorectal carcinoma: recent advances in its biology and treatment. *J Cancer Res Clin Oncol.* 1999;125:245-53
23. Nivatvongs S. Surgical Management of Early Colorectal Cancer. *World J. Surg.* 2000;24:1052-5
24. Puppa G, Sonzogni A, Colombari R, Pelosi G. TNM Staging System of Colorectal Carcinoma A Critical Appraisal of Challenging Issues. *Arch Pathol Lab Med—Vol 134, June 2010:837 - 52*
25. Significance for Perioperative Management. *World J. Surg.* 2005;29:1013-22
26. Snover DC. Update on the serrated pathway to colorectal carcinoma. *Human Pathology.* 2011;42:1-10
27. Takayama T, Miyanishi K, Hayashi T, Sato Y, Niitsu Y. Colorectal cancer: genetics of development and metastasis. *J Gastroenterol.* 2006;41:185-92
28. Vladimir A. Valera, et all. Prognostic Groups in Colorectal Carcinoma Patients Based on Tumor Cell Proliferation and Classification and Regression Tree (CART) Survival Analysis. *Annals of Surgical Oncology.* 2007;14(1):34-40
29. Washington MK. Colorectal Carcinoma Selected Issues in Pathologic Examination and Staging and Determination of Prognostic Factors. *Arch Pathol Lab Med.* Oktober 2008; 132; 1600-7
30. Weinberg D, Lewis N, Sigurdson E, Meyers M. Adenocarcinoma Colon and Rectum in Diseases of the Colon editor Wexner S,D ;Stollman N. New York 2007;477-506
31. Zahari A. Deteksi dan Diagnosa Dini Kanker kolon dan Rektum: majalah Kedokteran Andalas Vol 26. Ed Suplemen 2002;563-70
32. Zinner. Tumor of the colon dalam Maingot's Abdominal Operation, Tenth Edition, Vol I, Chapter 42, Appleton & Lange. 1281 - 300