

Histopathology of colorectal cancer in Cut Meutia Hospital, Aceh-Indonesia from 2017-2020



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ABSTRACT

Introduction: Colorectal cancer still causes high morbidity and death rates worldwide. This study aims to determine the histopathology of colorectal cancer at Cut Meutia Hospital, North Aceh Regency in 2017-2020.

Methods: This research is descriptive with a cross-sectional approach. The total sample of 64 CRC patients was taken by total sampling that met the inclusion and exclusion criteria.

Results: Univariate data analysis showed that the most histopathological type of research was found in Adenocarcinoma, amounting to 55 people (88.7%). The anatomical location of cancer was found mostly in the rectum, amounting to 26 people (41.9%). Description of the characteristics according to age and gender was mostly at the age of 45-54 years, amounting to 21 people (33.9%) and male gender which amounted to 36 people (58.1%).

Conclusion: The study showed the distribution of age in CRC patients at Cut Meutia Hospital, North Aceh Regency in 2017-2020, the most were at the age of 45-54 years. The description of characteristics according to gender in CRC patients, most of them were male. This study showed the anatomical location of cancer in CRC patients was more commonly found in the rectum. The histopathology type of CRC was mostly found in Adenocarcinoma.

Keywords: cancer, characteristics, colorectal, histopathology.

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INTRODUCTION

Colorectal Cancer (CRC) is a cancer that ranks third in the world, after breast cancer and lung cancer. According to the Global Burden of Cancer (GLOBOCAN) database, in 2020 more than 1.9 million new CRC cases and 935,000 deaths.¹ In Indonesia, according to data from GLOBOCAN in 2020, CRC ranks the fourth largest cancer with an incidence rate of 12.4% and a death rate of 6.7%.² In Aceh, based on research conducted at Zainoel Abidin Hospital Banda Aceh, 105 colorectal cancer patients were recorded from 2016 to 2018. More often found in men (54.3%), 50 years of age (23.8%), and most locations in the rectum (42.9%).³

Colorectal cancer histological variants in the World Health Organization (WHO) classification are Adenocarcinoma, mucinous, signet ring cell, medullary, micropapillary, serrated, comedo-type, adenosquamous, and undifferentiated cribriform.⁴ More than 90% of CRC types were found to be Adenocarcinoma

originating from colorectal mucosal epithelial cells. Histopathological factors are known to predict prognosis in colorectal cancer which is very important for the choice of therapeutic options.⁵ The lack of research on the histopathological features of CRC in Aceh makes researchers interested in researching the histopathological of colorectal cancer at Cut Meutia Hospital, Aceh, Indonesia.

MATERIAL AND METHODS

This research used as descriptive method to cross-sectional design. The population in this study were all patients diagnosed with CRC based on the results of anatomical pathology at the Cut Meutia Hospital, North Aceh, Indonesia which was recorded from 2017 to 2020. Total of 64 patients was included in this study. Inclusion criteria: diagnosed with CRC disease at Cut Meutia Hospital, Aceh, Indonesia which is listed in the patient's diagnostic record in the anatomical pathology room. Exclusion criteria: incomplete patient data. All data

were recorded from January 1, 2017, to December 28, 2020. The data analysis used in this research is the univariate data analysis. This analysis aims to describe the characteristics of CRC patients in based in histology characteristics.

RESULTS

Table 1, showed that more patients aged 45-54 years, which 33.9% from total cases. Table 2, showed that more patients were male, 36 people (58.1%). Table 3, showed that the CRC location was found mostly in the rectum, 26 people (41.9%). Table 4, showed that the highest CRC histopathology types were Adenocarcinoma, 55 people (88.7%).

DISCUSSION

The results showed that most patients in the age group were in the age group 45-54 years. This study's results align with Astuti's research at Dr. M. Djamil Padang, which shows that most colorectal cancer patients are in the age range 46-

Table 1. Age characteristics of the study participant.

Age	Frequency (n)	Percentage (%)
<20 years	2	3.2
20-34 years	10	16.1
35-44 years	9	14.5
45-54 years	21	33.9
55-64 years	6	9.7
65-74 years	11	17.7
75-84 years	2	3.2
>84 years	1	1.6
Total	62	100

Table 2. Characteristics of the study sample based on gender.

Gender	Frequency (n)	Percentage (%)
Man	36	58.1
Women	26	41.9
Total	62	100

Table 3. Characteristics based on location of cancer.

CRC location	Frequency (n)	Percentage (%)
Caecum	6	9.7
Ascending Colon	3	4.8
Transverse Colon	4	6.5
Descending Colon	3	4.8
Sigmoid	7	11.3
Rectum-sigmoid	13	21.0
Rectum	26	41.9
Total	62	100

Table 4. Characteristics based on cancer histopathology.

Histopathology	Frequency (n)	Percentage (%)
Adenocarcinoma	55	88.7
Medullary carcinoma	0	0
Mucinous Adenocarcinoma	3	4.8
Signet-ring cell carcinoma	4	6.5
Squamous cell carcinoma	0	0
Adenosquamous carcinoma	0	0
Small cell carcinoma	0	0
Undifferentiated carcinoma	0	0
Total	62	100

Source: Secondary data, 2021

55 years.^{5,6} The incidence of CRC begins to increase significantly after the age of 40 years. This is because in aging, there is a decrease in the function of cells and tissues in maintaining the structure and repairing themselves so that there is an accumulation of cell damage.⁷

The results showed that the number of cases in men was higher than in women, 36 men (58.1%) and 26 women (41.9%). This study's results align with Astuti's research at Dr. M. Djamil Padang, which shows that the number of cases in males is higher than in females, 17 males (81%)

and 4 females (19%).⁶ This result is from the literature which states that of the 20 respondents who suffered There were 14 colorectal cancer people (70%) were male.⁸ According to the study of Lin et al., the number of colorectal cancer incidences in men is related to the estradiol level. Estradiol in normal amounts functions in spermatogenesis and fertility. However, excessive amounts of estradiol inhibit the secretion of gonadotropin proteins such as LH which further reduces testosterone secretion. A high amount of testosterone is associated with a reduced risk of colorectal cancer.⁹

The results showed that most CRC locations were found in the rectum, amounting to 26 people (41.9%). The distribution of colorectal cancer, according to the location in the colon is mostly located in the descending colon and rectum.¹⁰ These results are in line with the results of research conducted on colorectal cancer patients at the H. Adam Malik General Hospital in Medan in 2015 - 2017.¹¹ This is in accordance with WHO (2000) which states that the location of colorectal cancer in the rectum has the highest incidence. Another contributing factor is diet. Certain types of food, such as low in fiber, protein, and high fat, will make the transit time of the stool longer. This can lead to colorectal cancer, especially in the rectal area where the function of the rectum is more on fecal perforation and the defecation.

The results showed that the most histopathological type of CRC was Adenocarcinoma, as many as 55 people (88.7%). Globocan in 2012 stated that 90% of the incidence of colorectal cancer is a type of histopathological Adenocarcinoma.¹² The results of this study are in line with Muflikal's research at the Laboratory of Anatomical Pathology, Faculty of Medicine, Andalas University, which showed that the most common histopathological type was Adenocarcinoma with 217 cases (83.47%).¹³ This could be because colorectal cancer begins with an adenomatous polyp, wherein this polyp later develops into an adenoma with a high degree of displacement and subsequently becomes invasive cancer.¹⁴

CONCLUSION

The description of characteristics according to age of CRC patients at Cut Meutia Hospital, North Aceh Regency in 2017-2020, the most were at the age of 45-54 years. The description of characteristics according to the sex of CRC patients at Cut Meutia Hospital, North Aceh Regency in 2017-2020, most of them were male. This study showed the anatomical location of cancer in CRC patients of Cut Meutia Hospital, North Aceh Regency in 2017-2020 was more commonly found in the rectum. The histopathology type of CRC patients at Cut Meutia Hospital, North Aceh Regency in 2017-2020 was mostly found in Adenocarcinoma.

DISCLOSURE

The author reports no conflicts of interest in this work.

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ETHICAL CONSIDERATION

This study has been approved by Ethical Committee Universitas Muhamaddiyah,

with ethical clearance reference number 535/KEPK/FKUMSU/2021.

AUTHOR CONTRIBUTION

All author had contributed in manuscript writing and agreed for the final version of manuscript for publication.

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