

## Clinicopathologic Features Of Colorectal Cancer At RSUD Dr. H. Chasan Boesoirie Ternate 2018-2023

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### Abstrak

Menurut International Agency for Research on Cancer (IARC), kanker kolorektal atau kanker usus besar mencakup kanker kolon dan rektum. Kanker kolorektal adalah kanker paling umum ke-3 dan penyebab kematian paling umum ke-4 terkait dengan kanker dan menurut GLOBOCAN pada tahun 2020 CRC menempati posisi ke-2 dengan kasus kematian terbanyak. Tujuan penelitian ini untuk mengetahui bagaimana gambaran klinikopatologi kanker kolorektal di RSUD Dr. H. Chasan Boesoirie ternate tahun 2018-2023, berdasarkan parameter seperti usia, jenis kelamin, tipe histopatologi, derajat diferensiasi, gejala klinis, dan lokasi kanker. Penelitian ini merupakan penelitian deskriptif observasional dengan pendekatan cross-sectional. Sampel penelitian ini sebesar 29 sampel, diambil menggunakan teknik total sampling. Hasil penelitian dari 29 kasus terbanyak berada pada rentang usia 51-60 tahun yaitu berjumlah 10 kasus (34,5%) dengan jenis kelamin laki-laki sebanyak 16 kasus (55,2%). Gejala klinis terbanyak yaitu BAB berdarah berjumlah 14 kasus (48,3%) dan lokasi terbanyak berada di rektum yakni 15 sampel (51,7%), Selain itu tipe histopatologi terbanyak adenokarsinoma berjumlah 25 sampel (86,2%) diikuti dengan derajat diferensiasi tumor berdiferensiasi baik sebagai kasus terbanyak yakni 22 sampel (72,9%). Sebagian besar kasus berada pada rentang usia 51-60 tahun dengan jenis kelamin laki-laki dan gejala klinis BAB berdarah, lokasi terbanyak di rektum dengan tipe histopatologi terbanyak adalah adenokarsinoma berdiferensiasi baik.

Kata Kunci: *adenokarsinoma; kanker kolorektal; klinikopatologi; usia; jenis kelamin*

### Abstract

According to the International Agency for Research on Cancer (IARC), colorectal cancer or colon cancer includes cancer of the colon and rectum. Colorectal cancer is the 3<sup>rd</sup> most common cancer and the 4<sup>th</sup> most common cause of death related to cancer and according to GLOBOCAN in 2020 CRC is the 2<sup>nd</sup> most cases of death. The purpose of this study is to determine how the clinicopathological Features of colorectal cancer at RSUD Dr. H. Chasan Boesoirie ternate in 2018-2023, based on parameters such as age, gender, histopathology type, degree of differentiation, clinical symptoms, and cancer location. This study is an observational descriptive study with a cross-sectional approach. The sample of this study amounted to 29 samples, taken using total sampling technique. The results of the study are 29 cases where most were in the age range of 51-60 years namely 10 cases (34.5%), with 16 cases (55.2%) were males. The most clinical symptoms are bloody stools, as many as 14 cases (48.3%), and most located in the rectum, namely 15 samples (51.7%), In addition, the most common histopathological type is adenocarcinoma as many as 25 samples (86.2%) followed by the degree of tumor differentiation are well-differentiated, which was the most cases namely 22 samples (72.9%). Most cases were in the age range of 51-60 years with male gender and bloody stool as clinical symptoms, most located in the rectum with histopathology type mostly are adenocarcinoma well-differentiated.

Keyword: *adenocarcinoma; colorectal cancer; clinicopathology; age; gender*

## **Introduction**

Adenocarcinoma is the most common type of colorectal cancer in the gastrointestinal tract compared to other variants such as, mucinous adenocarcinoma, signet ring cell carcinoma, medullary carcinoma, serrated adenocarcinoma, micropapillary adenocarcinoma, and adenosquamous carcinoma (1) (2).

According to the International Agency for Research on Cancer (IARC), colorectal cancer or colon cancer includes cancer of the colon and rectum (International Agency for Research on Cancer, 2019). Colorectal cancer is the 3rd most common cancer and the 4th most common cause of death related to cancer. Most colorectal cancer cases are detected in western countries with the incidence increasing year by year. The probability of having colorectal cancer is about 4%-5% (4).

Worldwide, as many as 1,065,960 men and 865,630 women are affected by colorectal cancer, making a total of 1,931,590 people (10% of all cases of cancer incidence in the world), while cases of death caused by colorectal cancer worldwide amounted to 935,173 people (9.4% of all cases of death caused by cancer) so that CRC occupies the second position with the most cases of death. Colorectal cancer deaths by gender were 515,637 men and 419,536 women (5). Colorectal cancer in Indonesia occupies the fourth position of the overall addition of new cases of cancer diagnosed in 2020 with a total of 34,189 people, 21,764 male patients and 12,425 female patients (5). While colorectal cancer in North Maluku, especially at RSUD Dr. H. Chasan Boesoirie Ternate for the 2018-2023 period, the exact number is not yet known.

Clinicopathologic features of colorectal cancer such as age, gender, histopathologic type, degree of differentiation, clinical symptoms, and cancer location can help in making a diagnosis and influence prognosis and determine management in colorectal cancer. Risk factors for colorectal cancer are age over 50 years, male gender, overweight, smoking, alcohol consumption, excessive consumption of red meat (processed meat), obesity, and having a family history of cancer (Mármol et al., 2017; Lotfollahzdeh, Recio-Boiles and Cagir, 2021). Clinical symptoms felt by colorectal cancer patients such as changes in defecation patterns, hematochezia, anemia, abdominal pain, masses at the site of malignancy, nausea, vomiting, ascites, hepatomegaly, and lymphadenopathy help in confirming the diagnosis of colorectal cancer, and these complaints can predict the location of the cancer, for example complaints such as hematochezia and defecation disorders indicate the possibility of malignancy on the

left side while symptoms of anemia indicate on the right side while changes in defecation patterns are more common in rectal cancer. (6). Based on the WHO classification, colorectal cancer variations are divided into several types including adenocarcinoma, mucinous adenocarcinoma, signet ring cell carcinoma, medullary carcinoma, serrated adenocarcinoma, micropapillary adenocarcinoma, and adenosquamous carcinoma (1). Colorectal cancer has several types and forms that have been mentioned before, one of which is adenocarcinoma which is the type of malignancy in the colon that most often occurs in the digestive tract (2). The degree of differentiation is also something that affects the prognosis of colorectal cancer. The degree of differentiation itself is the appearance of the tumor based on how abnormal the tumor cells and tumor tissue look under a microscope. In colorectal cancer, the degree of differentiation is generally divided into well differentiated, moderately differentiated, and poorly differentiated. (Amin, Edge and Greene, 2017; Fleming et al., 2012).

Based on the background described and seeing the number of colorectal cancer patients in Indonesia, researchers are interested in conducting research with the aim of knowing the clinicopathological features of colorectal cancer at RSUD Dr. H. Chasan Boesoirie Ternate in 2018-2023, based on parameters such as age, gender, histopathology type, degree of differentiation, clinical symptoms, and cancer location.

## **Methods**

This study is an observational descriptive study with a cross-sectional approach. The population in this study were all patients diagnosed with colorectal cancer at Dr. H. Chasan Boesoirie Ternate Hospital in the period January 2018-November 2023 who suit the inclusion and exclusion criteria in medical records obtained as many as 29 samples and taken using total sampling technique. The secondary data collection process will be taken from medical records in the Medical Record Room and Anatomical Pathology Laboratory of Dr. H. Chasan Boesoirie Ternate Hospital. The data obtained will be analyzed statistically. The analysis that will be carried out is univariate analysis using IBM SPSS 29 software. The data included age, gender, clinical symptoms, cancer location, histopathology type, and degree of differentiation.

## **Research Results**

The clinicopathological features of colorectal cancer at Dr. H. Chasan Boesoirie Hospital in 2018-2023 based on age, gender, clinical symptoms, tumor location,

histopathology type, and degree of differentiation by recording the medical records of 29 colorectal cancer patients. The description is detailed in the following table:

**Table 1. Overview of Colorectal Cancer Patients Based on Age**

| Age          | Frequency (N) | Presentage (%) |
|--------------|---------------|----------------|
| 21-30 Years  | 2             | 6.9            |
| 31-40 Years  | 4             | 13.8           |
| 41-50 Years  | 8             | 27.6           |
| 51-60 Years  | 10            | 34.5           |
| 61-70 Years  | 5             | 17.2           |
| <b>Total</b> | <b>29</b>     | <b>100</b>     |

Table 1. show the distribution table of colorectal cancer patients starting from the age range 21-30 years as many as 2 samples (6.9%), age range 31-40 years as many as 4 samples (13.8%), age range 41-50 years as many as 8 samples (27.6%), age range 51-60 years as many as 10 samples (34.5%), and age range 61-70 years as many as 5 samples (17.2%). Thus it is known that the largest number of samples for age variables is in patients with an age range of 51-60 years and the least in the age range of 21-30 years.

**Table 2. Overview of Colorectal Cancer Patients Based on Gender**

| Gender       | Frequency (N) | Presentage (%) |
|--------------|---------------|----------------|
| Male         | 16            | 55,2           |
| Female       | 13            | 44,8           |
| <b>Total</b> | <b>29</b>     | <b>100</b>     |

Table 2. show the distribution of colorectal cancer patients with male gender was obtained as many as 16 samples (55.2%) and 13 samples (44.8%) of women. Thus it is known that the most samples for gender variables are male and the least are female.

**Table 3. Overview of Colorectal Cancer Patients Based on Clinical Symptoms**

| Clinical Symptoms     | Frequency (N) | Presentage (%) |
|-----------------------|---------------|----------------|
| Bloody stool          | 14            | 48,3           |
| Abdominal pain        | 12            | 41,4           |
| Difficulty defecating | 3             | 10,3           |
| <b>Total</b>          | <b>29</b>     | <b>100</b>     |

Table 3. show the distribution of colorectal cancer patients with clinical symptoms of bloody stools was found to be 14 samples (48.3%), abdominal pain was 12 samples (41.4%), and difficulty defecating was 3 samples (10.3%). Thus it can be seen that the most samples for clinical symptom variables are bloody stools and the least with clinical symptoms of difficulty defecating.

**Table 4. Overview of Colorectal Cancer Patients Based on Cancer Location**

| Cancer Location  | Frequency (N) | Presentage (%) |
|------------------|---------------|----------------|
| Acending colon   | 2             | 6,9            |
| Decending colon  | 4             | 17,2           |
| Transverse colon | 1             | 3,4            |
| Sigmoid colon    | 4             | 13,8           |
| Caecum           | 2             | 6,9            |
| Rectum           | 15            | 51,7           |
| <b>Total</b>     | <b>29</b>     | <b>100</b>     |

Table 4. show the distribution of colorectal cancer patients based on cancer location was 2 samples (6.9%) in the ascending colon, 5 samples (17.2%) in the descending colon, 1 sample (3.4%) in the transverse colon, 4 samples (13.8%) in the sigmoid colon, 2 samples (6.9%) in the caecum, and 15 samples (51.7%) in the rectum. Thus it is known that the most samples for cancer location variables are in the rectum.

**Table 5. Overview of Colorectal Cancer Patients Based on Histopathology Type**

| Histopathology Type    | Frequency (N) | Presentage (%) |
|------------------------|---------------|----------------|
| Adenocarcinoma         | 25            | 86,2           |
| Mucinus adenocarcinoma | 13            | 13,8           |
| <b>Total</b>           | <b>29</b>     | <b>100</b>     |

Table 5. show the distribution of colorectal cancer patients based on histopathology type with adenocarcinoma form was obtained as many as 25 samples (86.2%) and adenocarcinoma mucinous form as many as 4 samples (13.8%). Thus it is known that the most samples for histopathology type variables for colorectal cancer are adenocarcinoma.

**Table 6. Overview of Colorectal Cancer Patients Based on Degree Of Differentiation**

| Degree Of differentiation | Frequency (N) | Presentage (%) |
|---------------------------|---------------|----------------|
| Well differentiated       | 22            | 75,9           |
| Moderately differentiated | 5             | 17,2           |
| Poorly differentiated     | 2             | 6,9            |
| <b>Total</b>              | <b>29</b>     | <b>100</b>     |

Table 6. show the distribution of colorectal cancer patients based on the degree of differentiation was found to be well differentiated as many as 22 samples (75.9%), moderately differentiated as many as 5 samples (17.2%), and poorly differentiated as many as 2 samples (6.9%). Thus it is known that the most samples for the degree of differentiation of colorectal cancer are well differentiated and the least in poorly differentiated.

## Discussion

Based on the results of the study, colorectal cancer patients with the largest age group were patients with an age range of 51-60 years with a total of 10 patients (34.5%) and the least at the age of 21-30 years with a total of 2 patients (6.4%). The results of this study are in line with research conducted at Sanglah Bali Hospital where the most cases of colorectal cancer are in the age range of 50-60 years, namely 48 cases (39.7%) (8). The least age group suffering from colorectal cancer is in the age range of 21-30 years which is in line with research conducted in the Anatomical Pathology lab of the Faculty of Medicine, UNAND with a total of 12 cases (5.85%) (9). The results of this study are in line with the theory that increasing age is one of the important risks of colorectal cancer, the risk of colorectal cancer is generally low at the age of less than 40 years and will double every year at the age of more than 50 years. (10).

Based on the results of the study, colorectal cancer patients with the largest gender group were male with a total of 16 patients (55.2%) while the female gender was 13 patients (44.8%). The results of this study are in line with research conducted at Sanjiwani Gianyar Hospital in 2019-2020 where the largest gender group was male with 40 patients (52.6%) and female with 36 patients (47.4%) (11). The results of this study are also supported by research conducted at Sanglah Bali General Hospital in 2013-2017. The study showed that the largest gender group was male, namely 72 patients (59.5%) and 49 patients (40.5%) were female (8).

Based on theory, the highest incidence of colorectal cancer is in men where men are twice as likely to develop colorectal cancer than women, this is thought due to differences in hormonal effects (12). Women have the estrogen hormone which is protective against tumor growth by inactivating the Wnt pathway that plays a role in the process of cell proliferation, cell growth, and cell invasion. Unlike men who do not have the effect of estrogen protection, the Wnt pathway is easily activated and causes tumorigenesis (13).

Based on the results of this study, the most clinical symptoms of colorectal cancer were bloody stools, namely 14 samples (48.3%) and the lowest in clinical symptoms of difficulty defecating with a total of 3 samples (10.3%). These results are in line with research conducted at Sanglah Hospital Bali, where the most clinical symptoms of colorectal cancer were bloody stools as many as 62 samples (51.2%) (Gunasekaran, Ekawati and Sumadi, 2019). The results of this study are also supported by the results of research conducted at Sanglah Hospital in

Denpasar. This study shows that the most common clinical symptom in colorectal cancer is bloody stools with 101 samples from 204 patients (29.9%) (14).

The most common clinical symptom was bloody stools. This can be caused by colorectal tumors that can cause obstruction so that the tumor can block the lumen of the colon or rectum. This obstruction can cause irritation of the colonic and rectal mucosa and prevent feces from leaving, thus often causing complaints in the form of changes in defecation, especially bleeding (15).

Based on the results of this study, the location of the most colorectal cancer is in the rectum, namely 15 samples (51.7%). These results are in line with research conducted at Cut Meutia Aceh Hospital in 2017-2020, it was found that the location of the most colorectal cancer was in the rectum with a total of 26 samples (41.9%) (16). These results are also supported by other studies conducted by Rahaf Almuhanha and friends in Saudi Arabia, where the most common location of colorectal cancer is in the rectum with 177 samples (30.8%) (17). The results of this study are also in line with research conducted at the Bandung Islamic Hospital, where the most common location of colorectal cancer is in the rectum, with 37 samples (61%) (18).

The location of colorectal cancer can be divided into 2 parts, the right side (caecum, ascending colon, and transverse colon) and the left side (descending colon, sigmoid colon, and rectum) which is limited by the splenic flexure (19). This result is also supported by the theory that based on the location of the onset of the rectum accounted for 49.66% (20). One of the influential factors is diet, certain types of food such as low fiber, high protein and fat, will make fecal transit time longer. This can trigger colorectal cancer, especially in the rectum area because the rectum functions as a place of transit and defecation (18).

Based on the results of the study, the most histopathology type in colorectal cancer was adenocarcinoma, which was 25 samples (86.2%) and the rest were musinus adenocarcinoma by 4 samples (13.8%). These results are in line with research conducted at Cut Meutia Aceh Hospital, where the most histopathology type was Adenocarcinoma in 55 samples (88.7%) and Musinus Adenocarcinoma in 3 samples (4.8%) (16). The results of this study are also supported by research conducted at Arifin Achmad Hospital in Riau Province with the same results where the most histopathological type was Adenocarcinoma with 197 samples (67.8%) and followed by Musinus Adenocarcinoma type as many as 16 samples (5,3%) (Romus and Nisa, 2021).

These results are in line with the theory that states that 90% or most colorectal cancers are adenocarcinomas (2). Adenocarcinoma in colorectal cancer has a predominantly glandular appearance with little stroma, the tumor cells are highly columnar and turn cuboidal at poorer differentiation and mitosis is easily found (22).

Based on the results of this study, the highest degree of colorectal cancer differentiation was well differentiated, namely 22 samples (75.9%), followed by moderately differentiated colorectal cancer as many as 5 samples (17.2%), and the least was poorly differentiated colorectal cancer as many as 2 samples (6.9%). These results are in line with research conducted at the Anatomical Pathology Lab of Dr. Soedarso Pontianak Hospital, which obtained 134 samples of well-differentiated colorectal cancer (90.54%), followed by moderately differentiated colorectal cancer as many as 7 samples (4.73%), and the least colorectal cancer with poor differentiation as many as 3 samples (2.03%) (23).

The degree of differentiation is one of the factors that can affect the prognosis of colorectal cancer. Based on the American Joint Committee on Cancer tumors are often grouped into 3 namely, well-differentiated, moderately differentiated, and poorly differentiated (7). Poorly differentiated colorectal cancer tends to grow and spread faster than well-differentiated or moderately differentiated colorectal cancer. However, other factors are also important in determining a patient's prognosis, such as how far the cancer has spread (24).

### **Conclusions and Suggestions**

Most cases were in the age range of 51-60 years with male gender and bloody stool as clinical symptoms, most located in the rectum with histopathology type mostly are adenocarcinoma well-differentiated. For hospitals, it is hoped that this research can be a reference and evaluation material to improve the quality of service and completeness of files in medical records as a form of responsibility to patients when receiving health services at Dr. H. Chasan Boesoirie Hospital. For future researchers, it is recommended to develop more titles to broaden their insight about colorectal cancer, such as the effect of age on the degree of differentiation of colorectal cancer using a qualified sample.

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