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Profile of Colorectal Cancer at Sanjiwani General Hospital, Gianyar Period January 2020 – June 2022

Ni Kadek Seri Mahayanti^{1*}, I Wayan Eka Saputra²

¹Internship Doctor, Department of Internal Medicine, Sanjiwani General Hospital, Gianyar, Indonesia

²Internist, Department of Internal Medicine, Sanjiwani General Hospital, Gianyar, Indonesia

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*Corresponding author:

Ni Kadek Seri Mahayanti

E-mail address:

mahayantiseri@yahoo.com

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ABSTRACT

Background: Colorectal cancer is one of the most common cancers worldwide and the third leading cause of cancer death in the UK and the United States. There were 1.8 million new colorectal cancer cases and 881,000 deaths. This study aims to determine the profile of colorectal cancer at Sanjiwani General Hospital for the period January 2020 - June 2022. **Methods:** This study is a descriptive study using secondary data from archives at the Anatomical Pathology Installation of the Sanjiwani General Hospital for the period January 2020 – June 2022. Data collection in the form of gender, age, cancer location, and histopathological type was carried out using the convenient purposive sampling method. **Results:** This study showed that the highest age group was the age group 61-70 years 32.6%, the sex was mostly male 63.9% with the most common location of colorectal cancer found in the rectum 66.2% and the histopathological type in the form of adenocarcinoma 96.5%. **Conclusion:** Most of the cases were found in the male gender, and the age range was 61-70 years. Most cancer locations were found in the rectum with the histopathological type of adenocarcinoma.

1. Introduction

Colorectal cancer is one of the most common cancers worldwide and is the third leading cause of cancer death in the UK and the United States.¹ Based on the latest global cancer estimate, GLOBOCAN 2018 states the order of cancer incidence in both genders, both male and female, is occupied by lung cancer which is the most diagnosed (11.6% of total cases) and is the leading cause of cancer death. (18.4% of total cancer deaths), followed by female breast cancer (11.6%), colorectal cancer (10.2%), and prostate cancer (7.1%). Meanwhile, most deaths were caused by colorectal cancer (9.2%), gastric cancer (8.2%), and liver cancer (8.2%).^{2,3} More than 1.8 million new colorectal cancer cases and 881,000 deaths are estimated to occur in 2018, accounting for about 1 in

10 cancer cases.³

Colorectal cancer risk factors can be classified into modifiable and non-modifiable risk factors. Smoking, obesity, high alcohol and red meat intake, low fiber (fruits and vegetables) intake and physical activity are modifiable risk factors. Non-modifiable risk factors included age over 45 years, male gender, family history of colorectal cancer, inflammatory bowel disease, type 2 diabetes mellitus, and history of pelvic and abdominal radiation.⁴ Several factors, such as calcium intake, aspirin use, and vitamin D supplementation, act as protective factors.⁵

Most colorectal cancers are localized in the rectum (37%) and sigmoidal (31%), less often in the ascending colon (9%), and cecum (8%).⁶ According to WHO,

colorectal cancer is histopathologically classified into adenocarcinoma, mucinous adenocarcinoma, signet-ring cell carcinoma, small cell carcinoma, squamous cell carcinoma, adenosquamous carcinoma, medullary carcinoma, and undifferentiated carcinoma.⁷ In the early course, symptoms of colorectal cancer are often asymptomatic, so early screening is necessary. When cancer develops, it can cause symptoms such as blockage of intestinal passage, gastrointestinal bleeding, changes in bowel patterns such as constipation and diarrhea, changes in the shape of the stool, abdominal pain, decreased appetite, and weight loss.⁸ Chronic bleeding can cause anemia and lead to symptoms of anemia, such as weakness, excessive fatigue, and shortness of breath.⁹ This study aims to describe the profile of colorectal cancer undergoing colonoscopic biopsy at the Sanjiwani General Hospital for the period January 2020 – June 2022 based on gender, age, location of cancer, and histopathological type of cancer.

2. Methods

This study is a descriptive observational study. This study uses secondary data obtained from archives at the Anatomical Pathology Installation of the Sanjiwani Hospital for the period January 2020 - June 2022. The subjects of the study were all patients who underwent histopathological examination of colorectal cancer biopsies at the Anatomical Pathology Installation of the Sanjiwani General Hospital for the period January 2020 - June 2022. Data collection was carried out with a convenient purposive sampling method. This study has received ethical approval from the Research Ethics Unit of the Sanjiwani General Hospital, Number: 070/30865/RSU, dated October 17, 2022.

The study variables were gender, age, location of cancer, and the patient's histopathological type. Data analysis was carried out using SPSS version 25 software. Univariate analysis was carried out to

describe the data in the form of the distribution and frequency of each variable described. The description of the data is carried out in a narrative manner equipped with a table.

3. Results

In this study, overall data were obtained for patients who had performed colonoscopy biopsies and met the inclusion criteria, totaling 86 cases. Data were obtained from secondary data from archives at the Anatomical Pathology Installation of the Sanjiwani General Hospital for the period January 2020 – June 2022. From the results of the study on colorectal cancer patients who met the inclusion criteria, 55 patients (63.9%) were male, and 31 patients (36,1%) were female (Table 1). In a study of 86 patients with colorectal cancer, most cases were in the age range of 61-70 years, namely 28 cases (32.6%), followed by the age range of 50-60 years, as many as 23 cases (26.8%), age <50 years as many as 22 cases (25.6%) and the age group >70 years were the groups with the lowest number of cases, namely 15.1% or there were 13 cases (Table 1). The results showed that colorectal tumor patients who underwent colonoscopy had the most tumor locations found in the rectum in 57 patients (66.2%), followed by the colon, which became the site of cancer in 15 patients (17.5%), sigmoid in 13 patients (15.1%) and was found to be least common in the anus in about 1.2% of patients (Table 1). Profile of patients with colorectal carcinoma based on histopathological type, the most common was adenocarcinoma, with 83 cases (96.5%). The second type of histopathology was mucinous adenocarcinoma in 2 cases (2.3%) and 1 case (1.2%) in the form of signet-ring cell carcinoma. In this study, no other histopathological types were found. The distribution of histopathological types of patients with colorectal carcinoma from January 2020 – June 2022 at the Sanjiwani General Hospital can be seen in Table 1.

Table 1. Distribution of the profile of colorectal cancer patients at the Sanjiwani General Hospital period January 2020 – June 2022.

Profile	N = 86	Percentage (%)
Gender		
Female	31	36.1
Male	55	63.9
Patients' age (years)		
<50	22	25.6
50-60	23	26.8
61-70	28	32.6
>70	13	15.1
Anatomical location		
Colon	15	17.5
Sigmoid	13	15.1
Rectum	57	66.2
Anus	1	1.2
Histopathology		
Adenocarcinoma	83	96.5
Mucinous adenocarcinoma	2	2.3
Signet-ring cell carcinoma	1	1.2
Small cell carcinoma	0	0
Squamous cell carcinoma	0	0
Adenosquamous	0	0
Medullary carcinoma	0	0
Undifferentiated carcinoma	0	0

4. Discussion

The results of this study showed that of patients who underwent histopathological examination of colorectal cancer biopsies, most of them are male, as many as 55 people (63.9%). According to the American Cancer Society, men have about a 30% higher risk of developing colorectal cancer than women. In addition, men diagnosed with colorectal cancer have a poorer prognosis and approximately 40% higher mortality compared to women.⁸ On the other hand, women are more likely to have right-sided colon cancer, which is often diagnosed at a more advanced stage and is more aggressive than left-sided tumors.^{10,11} Research by Keum, et al. stated that men are more at risk of suffering from adenocarcinoma of the proximal colon. The reasons for the gender disparity are not fully understood but are thought to be related to differences in exposure to risk factors such as alcohol, smoking, dietary patterns, and sex hormones.¹² The higher incidence of colorectal cancer in men is associated with the level of estradiol, where estradiol functions in spermatogenesis, but when the amount of estradiol

increases, it will inhibit the secretion of gonadotropins. Decreased gonadotropin secretion will inhibit testosterone secretion. On the other hand, an increase in testosterone has been shown to reduce the risk of colorectal cancer, so if there is inhibition of testosterone secretion due to an increase in estradiol, there will be an increased risk of colorectal cancer.¹³

Characteristics of patients based on age showed that the highest age group was the age group 61-70 years, with a total of 28 people (32.6%), and the least was found in the age group >70 years, as many as 13 people (15.1%). The fact that about 90% of all new cases of colorectal cancer occur in individuals over the age of 50 years, raises the hypothesis that older age is considered to be one of the significant factors influencing the risk of colorectal cancer.¹⁴ Ages over 65 years have a 3 times greater risk of developing colorectal cancer compared to those aged 50-64 years and about 30 times greater risk than people aged 25-49 years.¹⁵ The median age at diagnosis of colorectal cancer is 68 years in men and 72 years in women. The fact that colorectal cancer is an age-related disease is

particularly evident in developed countries with high rates of colorectal cancer. The incidence of colorectal cancer in developed countries is associated with a high life expectancy, so the number of elderly people in the population also increases.¹⁶ However, recent studies have shown that the incidence of colorectal cancer is increasing in groups of young adults (20-49 years old) in the United States and Europe.^{17,18} There has been a shift in the incidence of colorectal cancer from an average age of 72 years in the early 2000s to an age of 66 years today. This is associated with an increased incidence in young adults.⁸ So, it is highly recommended to start colorectal cancer screening in adults aged over 50 years.⁹

This study showed that the most common locations for colorectal cancer were in the rectum with 57 patients (66.2%) and followed by the colon with 15 patients (17.5%), then sigmoid 13 patients (15.1%) and the anus 1 patient (1.2%). Most colorectal cancers are localized to the rectum (37%) and sigmoidal (31%), less often to the ascending colon (9%), cecum (8%), descending colon (5%), transverse colon (4%), hepatic angle (4%), and splenic angle (2%). Approximately 65% of colorectal cancers are located in the distal splenic angle, followed by 35% of cases of colorectal cancer located in the proximal sigmoidal.⁶ The most common location is the superior rectum, followed by the sigmoid/rectosigmoid colon. These data are consistent with other literature where the superior rectum and sigmoid are the most common sites of colorectal cancer, but there is literature that states the sigmoid/rectosigmoid colon is the most common location of colorectal cancer.⁵ The rectum and rectosigmoid were the most common sites of colorectal cancer in the study of Tamgadge, et al. in India (56.66%).¹⁹ In the study by Smiddy, et al., the incidence of colorectal cancer of the rectum and rectosigmoid was 57.4%, whereas Cady, et al. reported colorectal cancer of the rectum and rectosigmoid of about 60% and 62%, respectively.^{20,21} However, different things were found where the prevalence of the anatomical location of colorectal carcinoma patients at Prof Ngoerah General Hospital Denpasar from 2013-

2017 was most often found in the colon, which was 49 cases (40.5%), and the lowest occurred in the rectum, which was 34 cases (28.1%). The results of this study are the same as those in Iraq by Al-Bahrani, et al. where the most common location is the colon.²²

The results showed that the characteristics of patients with colorectal carcinoma based on histopathological type were adenocarcinoma in 83 cases (96.5%) followed by mucinous adenocarcinoma in 2 cases (2.3%) and signet-ring cell carcinoma. as many as 1 cases (1.2%). Research by Nadeem et al. showed that the most common histopathological type of colorectal carcinoma was adenocarcinoma, which was around 89.5% of cases.²³ This is similar to the study in Nepal by Thapa, et al. and the study in Egypt by Suliman, et al. which concluded that most of the histopathological types of colorectal carcinoma were adenocarcinomas which were found in 74% and 75.6% of cases, respectively.²⁴ Adenocarcinoma is the most common histopathological type found in the literature.^{25,26}

Most colorectal cancers (nearly 85%) are adenocarcinomas, and 10% to 15% are mucinous adenocarcinomas. Other histopathological types are rare, but signet-ring cell carcinoma and small cell carcinoma are associated with a very poor prognosis regardless of stage.²⁷ Mucinous adenocarcinoma has a high tendency to cause peritoneal metastasis, invasion of adjacent organs, and trigger lymph node involvement. Signet-ring cell carcinoma comprises at least 50% of signet-ring cells. This histopathological type is represented in less than 1% of cases of colorectal cancer and is more common in people younger than 50 years and patients with ulcerative colitis. Signet-ring cell carcinoma is often at an advanced stage at diagnosis and is associated with a poorer prognosis than adenocarcinoma.^{5,28}

5. Conclusion

The profile of colorectal cancer patients at the Sanjiwani General Hospital for the period January 2020 to June 2022 is dominated by male gender with an age range of 61-70 years. The most common

location of cancer was found in the rectum, and histopathological examination showed that the most common type of colorectal cancer was adenocarcinoma.

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