

## Clinical Research

## Clinical Characteristic of Young Indonesian Colorectal Cancer Patients: A Preliminary Study

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### Abstract

**Introduction:** Colorectal cancer (CRC) is generally a disease of persons aged above 40 year-old. Controversies still exist regarding clinical characteristics of CRC in young persons. The aim of this study is to know the clinical characteristics of young CRC patients in Siloam General Hospital, Karawaci, Banten.

**Material And Methods:** A total of 14 patients with diagnosis of CRC from December 2013 to January 2014 in Siloam General Hospital, Karawaci, Banten were studied cross – sectionally. The symptoms and signs, family history of cancer, diabetes, location of mass were collected and evaluated.

**Results:** There were 5 (35.7%) cases of CRC patients aged below 40 year-old (young patients) and 9 (64.3%) above 40 years-old (old patients). The most common symptom was constipation followed by bloody diarrhea i.e. 57.1% and 42.9% consecutively. Constipation occurred in 2 and 6 young and old patients consecutively and in 3 and 3 young and old patients consecutively. In young patients, 2 (14.2%) had a history of cancer in the family compared to none in the old patients. According to the location of tumor in the colon 4 (28.5%) were in ascending colon with 2 and 2 in young and old patients consecutively, 3 (21.7%) were in descending colon with 2 and 1 in young and old patients consecutively, 8 (57.1%) were in rectum with 2 and 6 in young and old patients consecutively. One young patient had diabetes, and one other young patient had positive *Clostridium difficile* antigen and toxin.

**Conclusion:** Approximately 35.7% cases CRC patient in our hospital was of young patients. Two patients were having family history of cancer. The location of mass was not specific for young CRC patients.

**Key words:** colorectal cancer, young patients

### Abstrak

**Pendahuluan:** *Colorectal cancer (CRC)* umumnya diderita oleh pasien yang berusia di atas 40 tahun. Masih terdapat kontroversi tentang karakteristik klinis pada usia muda. Tujuan studi ini adalah untuk mengetahui karakteristik klinis pasien *CRC* usia muda di Rumah Sakit Siloam, Karawaci, Banten.

**Material dan Metode:** Didapatkan 14 pasien *CRC* pada periode Desember 2013 sampai Januari 2014. Gejala, tanda, riwayat kanker keluarga, diabetes, dan lokasi massa dievaluasi.

**Hasil:** Didapatkan 5 (35,7%) kasus *CRC* di bawah 40 tahun (pasien usia muda) dan 9 (64,3%) di atas 40 tahun (pasien tua). Gejala paling sering adalah konstipasi, diikuti diare berdarah sebanyak 57,1% dan 42,9%. Diare berdarah dan konstipasi terjadi pada 2 dan 6, serta 3 dan 3 pasien muda dan tua. Terdapat 2 (14,2%) pasien muda dengan riwayat kanker dalam keluarga, sedangkan pasien tua tidak ada. Lokasi tumor pada 4 (28,5%) di kolon asenden pada 2 dan 2 pasien muda dan tua, 3 (21,7%) di kolon desenden pada 2 dan 1 pada pasien muda dan tua, 8 (57,1%) di rektum pada 2 dan 6 pasien muda dan tua. Satu pasien muda menderita diabetes, dan satu pasien muda lain dengan *Clostridium difficile* positif antigen dan toksin.

**Kesimpulan:** Terdapat 35,7% kasus *CRC* usia muda, di mana 2 memiliki riwayat kanker. Lokasi massa tidak spesifik pada pasien usia muda.

**Kata kunci:** colorectal cancer, pasien muda

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### INTRODUCTION

Colorectal cancer (CRC) is the fourth common cancer and the second leading cause of cancer death in the world.<sup>1</sup> The majority of patients were aged 50 – 70 year-old, but the age at

diagnosis is getting younger. The annual percentage of CRC in young people is increasing.<sup>2</sup> The incidence of CRC at 40 years or younger varies between 1.6% and 23%.<sup>3,4</sup> There has been an increasing number of reports about young CRC patients in recent years. Controversies still exist regarding clinical characteristics of CRC in young persons also the outcomes varied widely among different regions.<sup>2,5,6</sup> There are still controversies about the definition of the age of young population. The aim of this study is to know the clinical characteristics of young CRC patients in Siloam General Hospital, Karawaci, Banten, Indonesia.

**MATERIALS AND METHODS**

A total of 14 patients with CRC admitted to Siloam General Hospital from December 2013 to January 2014 were studied.

The patients were divided into two groups of patients, the young patients (aged ≤ 40 years) and old patients (aged > 40 years). The inclusion criteria were patients with pathologically confirmed CRC. Data obtained including age, gender, family history of CRC, symptoms and signs, diabetes, and tumor location were collected and evaluated. Tumor location was described in detail as the cecum, ascending colon, transverse colon, descending colon, sigmoid, and rectum.

Data of categorical variables are summarized using frequencies and percentages, quantitative variables are summarized using median.

Statistical analyses were performed with the SPSS software package, version 15.0 (SPSS, Chicago, IL).

**RESULTS**

There were 5 (35.7%) cases of CRC patients aged below 40 year-old (young patients) and 9 (64.3%) above 40 years-old (old patients). Median age of patients was 50 year-old (range 21 – 78 year-old).

There was male preponderance in the young patients (60.0%), and female preponderance in the old patients (77.7%). In young patients, 2 (14.2%) had a history of cancer in the family compared to none in the old patients.

The presenting symptoms were constipation (40.0% vs. 66.6%), small sized faeces (20.0% vs. 66.6%), bloody diarrhea (60.0% vs. 33.3%), decreased body weight (80.0% vs. 100.0%), body mass index below 18.5 (60.0% vs. 22.2%) when compared between young and old patients. There is no emergency presentation such as acute bowel obstruction in young and old patients.

According to the location of tumor in the colon 4 were in ascending colon with 40.0% and 22.2% in young and old patients consecutively, 3 were in descending colon with 40.0% and 11.1% in young and old patients consecutively, 8 were in rectum with 40.0% and 66.6% in young and old patients consecutively. One young patient had diabetes, and one other young patient had positive *Clostridium difficile* antigen and toxin.

**Table 1.** Demographics, comorbidities, risk factors, and clinical characteristics of patients included in the study (N = 14 patients)

Characteristics	< 40 year-old		≥ 40 year-old	
	Frequencies	%	Frequencies	%
Sex				
Male	3	60.0	2	22.2
Female	2	40.0	7	77.7
Family history of CRC	2	40.0	0	0.0
Symptoms				
Constipation	2	40.0	6	66.6
Bloody diarrhea	3	60.0	3	33.3
Small sized faeces	1	20.0	6	66.6
Decreased appetite	3	60.0	7	77.7
Decreased body weight	4	80.0	9	100.0
Body mass index below 18.5	3	60.0	2	22.2
Diabetes	1	20.0	0	0.0
Hemoglobin level < 10.0 g/dL	4	80.0	7	77.7
Location				
Ascending	2	40.0	2	22.2
Transverse	0	0.0	0	0
Descending	2	40.0	1	11.1
Sigmoid	0	0.0	0	0
Rectum	2	40.0	6	66.6

## DISCUSSION

In this study, the result was compared to similar studies of young CRC done in developed and developing countries, i.e. Spain, Eastern China, Tunisia and Indonesia. In this study, there were 5 (35.7%) cases of CRC patients aged below 40 year-old (young patients) and 9 (64.3%) above 40 years-old (old patients). This result was different with a study in Eastern China from the year 1985 – 2005 (3.1% cases CRC were young patients)<sup>7</sup> and study in Hasan Sadikin Hospital, Bandung, West Java from the year 2003 – 2008 (12% cases CRC were young patients).<sup>8</sup> Median age of patients was 50 year-old (range 21 – 78 year-old).

This result was similar to a study in Hasan Sadikin Hospital, Bandung, West Java where mean age was 51.5 year-old.<sup>8</sup>

There was male preponderance in the young patients (60.0%), and female preponderance in the old patients (77.7%). In the studies in Eastern China from the year 1985 – 2005<sup>7</sup> and Spain from the year 2003 – 2005<sup>9</sup>, there is male preponderance to female in both young and old patients (57.1 vs. 42.9 and 60.0% vs. 55.2% consecutively). Two of the young patients (14.2%) had a history of cancer in the family compared to none in the old patients. This result was similar to a study in Tunisia from the year 2001 – 2010, most young patients (87.5%) had no known cancer either in their first or second-degree relatives.<sup>10</sup>

The dominant presenting symptoms in old patients were constipation (66.6%), small sized faeces (66.6%), and decreased body weight (100.0%). Whereas bloody diarrhea (60.0%), body mass index below 18.5 (60.0%) were more frequent in young patients. The symptoms were contradictive to the study in Tunisia<sup>10</sup>, where the symptoms were a recent change in bowel habits (17.5%), abdominal pain (52%), weakness (27.5%), paradoxical diarrhea (7.5%), constipation (17.5%) and per-anal bleeding was more frequent in older population. A study in Hasan Sadikin Hospital, Bandung, West Java found the symptoms were bloody diarrhea (47%), small sized faeces (25%), constipation (14%) and diarrhea (14%). The interesting finding was that although bloody diarrhea was more frequent in young patients, frequency of anemia was similar between young and old patients. The explanations of that finding need to be studied more in this study.

In the study in Tunisia<sup>10</sup>, the location of the tumor in young compared to old patients was evenly distributed throughout the colon and rectum (80% vs. 82% of the tumors were located in the colon, 20% vs. 18% in the rectum). In the study in Hasan Sadikin

Hospital<sup>8</sup>, the location were rectum (71%), colon (26%) and rectosigmoid (3%). In this study, the location of the tumor in young patients was evenly distributed (40% in ascending colon, 40% in descending colon and 40% in rectum), but in the old patients, the location of tumor was predominant in rectum compared to ascending and descending colon (66.6%, 22.2%, and 11.1% consecutively)

Another interesting finding was one young patient had positive *Entamoeba histolytica* cyst form and positive *Clostridium difficile* antigen and toxin. Studies on the composition of the CRC-associated gut microbiota found a significant difference between CRC and normal samples was observed for the *Bacteroides* – *Prevotella* group, with higher bacterial counts in cancer samples.<sup>11</sup> Another study showed that the composition of the mucosa-associated microbiota differed significantly between colon adenoma cases and controls, with increased abundance of *Proteobacteria* and decreased levels of *Bacteroidetes* in adenoma samples. This study also demonstrated a higher overall diversity in adenoma samples, which was previously shown for two specific *Clostridium* species in an earlier study conducted in fecal samples of patients with CRC.<sup>12</sup> A culture-dependent study of the microbiota of patients with polyps and CRC identified 15 bacterial taxa significantly associated with high risk of colon cancer (including species of *Bacteroides*, *Eubacterium*, and *Bifidobacterium*) and five associated with low risk of colon cancer (including species of *Lactobacillus*).<sup>13</sup>

## Conclusion

Prevalence of CRC in young patients in Karawaci, Banten, Indonesia, is higher than the prevalence described in developed countries. The most common symptom was bloody diarrhea. Fourteen percent of young patients had a family history of colorectal cancer compared to none in the old patients. The location of the tumor in young patients was evenly distributed throughout colon. Our results must be confirmed by further multicentric studies.

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The abstract of this study was presented at 7th Annual Asian Oncology Summit and 11th Annual Conference of the Organisation for Oncology and Translational Research and in the European Journal of Cancer, volume 51, supplement 2, July 2015, pages e7, which published the conference's abstract.

## Conflict of interest

None

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