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The Incidence Rate of Hand-Foot Syndrome Post Capecitabine Administration in the Case of Adenocarcinoma Colorectal from January-August 2019 at Dr. Moewardi General Hospital Surakarta

Aulia Thabrani[1*] and Ida Bagus Budhi[1]

[1]Department of Surgery, Faculty of Medicine, Universitas Sebelas Maret, Dr. Moewardi General Hospital, Surakarta, Central Java, Indonesia.

Authors' contributions

This work was carried out in collaboration between bothauthors. Author AT designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author IBB managed the analyses of the study and managed the literature searches. Bothauthors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

Aims: To inform the increase of Hand-Foot Syndrome (HFS) incidence in patients with Colorectal Adenocarcinoma after giving capecitabine in Dr. Moewardi General Hospital Surakarta during the period January 2019 to August 2019 based on variables, including the degree and dose of capecitabine
Study Design: This research is a retrospective descriptive research type.
Place and Duration of Study: This research was conducted at the Dr. Moewardi General Hospital Surakarta from January 2019 to August 2019, for approximately eight months.
Methodology: The sample in this study was all patients who underwent routine control by the Digestive Surgery Department in Dr. Moewardi General Hospital Surakarta with a diagnosis of Adenocarcinoma Colorectal and receiving capecitabine therapy. All medical records of patients with

**Corresponding author: E-mail: aulia_metalshred@yahoo.co.id;*

Colorectal Adenocarcinoma treated with capecitabine were collected and analyzed. The variables collected were HFS grade and capecitabine dosage.

Results: There were 20 patients diagnosed with Colorectal Adenocarcinoma who underwent therapy with capecitabine. The incidence of Hand-Foot Syndrome in patients who were given a dose of capecitabine showed that at a dose of 1250 mg/m2 (12 people), there were no HFS symptoms. At a dose of 2000 mg/m2 (5 people), HFS symptoms were obtained from degrees 1-2. Then, at a dose of 2500 mg/m2 (3 people), the symptoms of HFS were at grade 3. Although HFS is not a life-threatening complication, it significantly reduces the patient's quality of life.

Conclusions: The incidence of Hand-Foot Syndrome is influenced by the dose of capecitabine administration. The higher the dose given, the higher the degree of HFS occurrence.

Keywords: Hand-foot syndrome; colorectal adenocarcinoma; capecitabine.

1. INTRODUCTION

Capecitabine is used as an adjunct treatment in colorectal cancer, as a first-line treatment for colorectal, stomach, pancreatic, and head and neck cancer, and as monotherapy or in combination with docetaxel in metastatic breast cancer [1]. Although capecitabine is well tolerated by patients, Hand-Foot Syndrome (HFS) is one of the common side effects, which causes a significant level of morbidity [2]. HFS was first described by Zuehlke in 1974 as an erythematous/malignant rash on the hands and feet of patients receiving mitotane. This syndrome is dose-dependent, and its incidence is associated with peak drug concentrations and the total cumulative dose of capecitabine. HFS, also known as Palmar-Plantar Erythrodysesthesia (PPE), chemotherapy-related acral erythema, Toxic Palmar-Plantar Erythema, or Burgdorf's Reaction, is one of the most common side effects of cytotoxic chemotherapy. The most commonly seen side effects of capecitabine are dermis-based, which causes keratinocyte degeneration, apoptosis, perivascular lymphocytic filtration, and edema. HFS manifests as dysesthesia, palmar-plantar formations, and erythema initially and increases in severity to a pain syndrome unless treated appropriately [3]. The National Cancer Institute assesses the clinical symptoms of HFS, divided into four degrees: minimal skin changes, erythema, and peeling (Grade 1); moderate skin changes, swelling, and edema (Grade 2); painful erythema and swelling of the palms and soles (Grade 3); pain, deep peeling, and ulceration (Grade 4); those may be observed to varying degrees in the patient [4]. Therefore, it is hoped that this study can give information about the increase of the Hand-Foot Syndrome (HFS) incidence in patients with Colorectal Adenocarcinoma after giving capecitabine in Dr. Moewardi General Hospital Surakarta during the period January 2019 to August 2019 based on variables, including the degree and dose of capecitabine.

2. MATERIALS AND METHODS

This research was conducted at the Dr. Moewardi General Hospital Surakarta from January 2019 to August 2019, for approximately eight months. This research was a retrospective descriptive research type. The sample in this study was all patients who underwent routine control by the Digestive Surgery Department in Dr. Moewardi General Hospital Surakarta, with a diagnosis of Adenocarcinoma Colorectal and receiving capecitabine therapy from January 2019 to August 2019 (eight months). All medical records of patients with Colorectal Adenocarcinoma treated with capecitabine were collected and analyzed. The variables collected were HFS grade and capecitabine dosage. Regarding the data collected, a careful analysis was carried out to find out several things, such as the total number of Adenocarcinoma Colorectal sufferers who experienced HFS treated with capecitabine and the relationship between capecitabine dose and the degree of HFS. All variables or data obtained were displayed descriptively in tables and narrative form.

3. RESULTS AND DISCUSSION

From January 2019 to August 2019, there were 20 patients diagnosed with Colorectal Adenocarcinoma who underwent therapy with capecitabine [Table 1].

The mean age of patients diagnosed with colorectal adenocarcinoma was 53.7 years. On the therapeutic aspect, all patients treated using capecitabine with a low dose of 1250 mg/m2 showed no experience of Hand-Foot Syndrome (HFS).

Table 1. Patients Diagnosed with Colorectal Adenocarcinoma Who Underwent Therapy with Capecitabine

No.	Age	Gender	Capecitabine dose	HFS degree
1	45	M	2000 mg/m2	1
2	52	F	2500 mg/m2	3
3	55	M	1250 mg/m2	-
4	40	F	1250 mg/m2	-
5	41	M	2000 mg/m2	2
6	53	F	2000 mg/m2	2
7	62	M	2500 mg/m2	3
8	49	M	1250 mg/m2	-
9	67	F	1250 mg/m2	-
10	38	M	1250 mg/m2	-
11	50	F	1250 mg/m2	-
12	58	F	2500 mg/m2	3
13	47	F	1250 mg/m2	-
14	77	M	1250 mg/m2	-
15	63	M	1250 mg/m2	-
16	66	F	2000 mg/m2	2
17	71	M	1250 mg/m2	-
18	58	F	1250 mg/m2	-
19	39	M	2000 mg/m2	2
20	44	M	1250 mg/m2	-

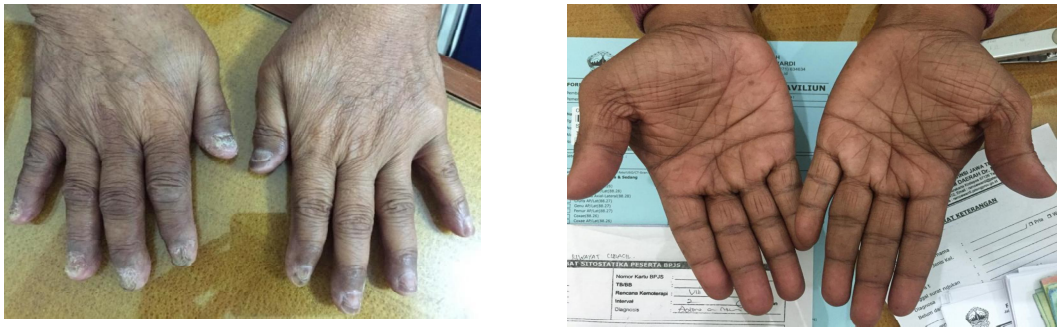

Fig. 1. Clinical Photos of a Patient with Hand Foot Syndrome after Capecitabine Administration

Many case reports of HFS caused by capecitabine have been documented in the literature. The first case report on HFS related to capecitabine was published in 2003, and the number of cases has been increasing recently [3]. From the research that has been done, it was found that the incidence of Hand-Foot Syndrome in patients who were given a dose of capecitabine at a dose of 1250 mg/m2 (12 people) showed that they had no symptoms of HFS. At a dose of 2000 mg/m2 (five people), HFS symptoms were obtained from degrees 1-2. Then, at a dose of 2500 mg/m2 (three people), HFS symptoms were at grade 3. Although HFS is not a life-threatening complication, it significantly reduces the patient's quality of life [5,6]. When HFS occurs, specific problems with adherence may arise, and discontinuation of chemotherapy may be necessary. Therefore, early management of HFS is vital to maintain the patient's quality of life and continuity of treatment. Besides, patient self-monitoring tools have been developed to assess HFS symptoms, contributing to active patient involvement in the chemotherapy process [7–9]. The clinical condition of patients with Colorectal Adenocarcinoma who suffered Hand-Foot Syndrome after treated with capecitabine can be shown in Fig. 1.

4. CONCLUSION

Capecitabine is used as an adjunct treatment in colorectal cancer, as a first-line treatment for colorectal, stomach, pancreatic, and head and neck cancer, and as monotherapy or in combination with docetaxel in metastatic breast

cancer. Hand-Foot Syndrome (HFS) is one of the common side effects, leading to significant morbidity rates. From the research that has been done, it was found that the incidence of Hand-Foot Syndrome is influenced by the dose of capecitabine administration. The higher the dose given, the higher the degree of HFS occurrence. Thus, the treatment of HFS is to reduce the dose of capecitabine without disturbing the patient's chemotherapy cycle. With appropriate early management of HFS, it is essential to maintain the patient's quality of life and continuity of patient treatment. In conclusion, health care providers and patients should be aware of HFS caused by capecitabine administration, its associated risk factors, and the early initiation of treatment options during chemotherapy.

CONSENT AND ETHICAL APPROVAL

As per university standard guidelines, participant consent and ethical approval have been collected and preserved by the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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