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# Nutrition therapy in colorectal cancer patient with severe malnutrition: A case report



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Made Kurnia Alvina<sup>1\*</sup>, Putu Diani Wirayanti<sup>1</sup>

## ABSTRACT

**Background:** Malnutrition in cancer patients generally, and in gastrointestinal cancer specifically, is common, that could be from the cancer itself or the treatment. Thus, it is necessary to follow special nutrition rules in patients with colorectal cancer. This study aims to see the progress of the nutritional status of cancer patients treated with special nutrition rules.

**Case Description:** A 72-year-old man was brought to the ER with the chief complaint of weakness, felt since 1 week ago. Other complaints are loss of appetite and liquid stool. History of weight loss is 12 kg in the last 6 months. He was diagnosed with colorectal cancer 6 months ago. The patient looks pale, with conjunctiva pallor, loss of subcutaneous fat in arms, trunk, and feet, and loss of muscle in the face, ribs, and shoulder. He was then admitted to the ward with a diagnosis of colorectal cancer with severe malnutrition. Nutrition therapy has been given since the beginning. The total energy was

2,100 kkal, with 80gr protein, 280gr carbohydrate, and 70gr fat. The patient was treated for 10 days. Clinically improved: the conjunctiva was no more pallor, arm circumference increased to 19cm, he had gained his appetite, was no longer dripping with norepinephrine, and no longer needed O<sub>2</sub> supplementation (SaO<sub>2</sub> in room air: 98%).

**Conclusion:** Cancer treatment causes side effects on nutrition status. It is essential to give special nutrition rules to patients with colorectal cancer. Cancer patients also suffer from inadequate food intake, reduced ability to digest food, and disturbed body homeostasis. Malnutrition, especially in cancer patients, could result in general weakening, lower immunity, prolonged recovery period, and lower tolerance to the side effects of cancer therapy. Early nutrition therapy has a good impact on the nutritional status of the cancer patient.

**Keywords:** colorectal cancer, malnutrition, nutrition therapy.

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<sup>1</sup>General Practitioner, Bali Mandara General Hospital, Bali.

\*Corresponding author:

Made Kurnia Alvina;  
General Practitioner, Bali Mandara General Hospital,  
Bali;  
[kurnia.alvina@gmail.com](mailto:kurnia.alvina@gmail.com)

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## INTRODUCTION

The third most frequent type of cancer and the fourth leading cause of cancer-related mortality is colorectal cancer.<sup>1</sup> The main risk factor known for colorectal cancer is age: past the fifth decade of life, the risk of developing colorectal cancer is significantly increased.<sup>2</sup> Malnutrition in cancer patients generally, and in gastrointestinal cancer specifically, is common, which could be from the cancer itself and the treatment. Therefore, people with colorectal cancer must adhere to certain dietary guidelines. Nutrition should be adjusted to the condition and individual needs of patients.<sup>3</sup> This study aims to see the progress of the nutritional status of the cancer patient treated with special nutrition rules.

## CASE DESCRIPTION

A 72-year-old man was brought to the ER with the chief complaint of weakness, felt since 1 week before the admission. Other complaints are loss of appetite and liquid stool. The history of weight loss is 12 kg in the last 6 months, 50 kg before, and now 38 kg (24% weight loss) with an arm circumference of 17 cm. He was diagnosed with colorectal cancer 6 months ago. The patient looks pale, with conjunctiva pallor, loss of subcutaneous fat in arms, trunk, and feet, and loss of muscle in the face, ribs, and shoulder.

The blood test was done in the emergency room with the result of white blood cells (WBC) 13.8x10<sup>9</sup>/L, Hb 7.2 g/dL, thrombocyte 506 x10<sup>9</sup>/L, serum electrolyte: Na<sup>+</sup> 120 mEq/L, K<sup>+</sup> 2.8 mEq/L. A radiology test was done with the result of an intraluminal colorectal malignant

mass, approximately 7.1 cm long with significant stranding fat around; multiple enlarged pericolic, perirectal, left colic, sigmoid mesenteric, sigmoidal, inferior mesenteric lymph node; and multiple nodule size vary, in the left and right lobe of the liver (T3N2M1). He was then admitted to the ward with a diagnosis of colorectal cancer and severe malnutrition.

Initially, Nutrition therapy was given until the patient was discharged with a weight of 38 kg, height of 164 cm, body mass index (BMI) of 14.13, and ideal body weight (IBW) of 57.6 kg. The total energy was 2,100 kkal, with 80 gr protein, 280 gr carbohydrate, and 70 gr fat. The instructions for the diet were three meals with soft food and fruits, 2x200 ml low lactose milk, and the addition of a Curcuma 3x1 tablet, Zinc 1x20mg, and Vitamin B6 3x1 tablet. Later, on the 5<sup>th</sup> day

of admission, a Virgin Coconut Oil (VCO) 3x1 tablespoon was added.

The patient was discharged after 10 days of being treated and supported with good nutritional therapy. Clinically improved: the conjunctiva was no longer pallor, arm circumference increased to 19 cm, he had gained his appetite, was no longer being dripped with norepinephrine (Blood pressure 122/80 mmHg), no longer needed O<sub>2</sub> supplementation (SaO<sub>2</sub> in room air: 98%).

## DISCUSSION

In addition to age, the primary risk factors for colorectal cancer are genetics and lifestyle choices like obesity and bad eating habits.<sup>4</sup> Nutritional status is impacted by adverse effects of cancer treatment. Therefore, it is crucial to provide patients with colorectal cancer with specific dietary guidelines. Patients' specific needs and conditions should be taken into account when adjusting their diet.<sup>3</sup> Cancer patients also experience altered body homeostasis, insufficient food intake, and diminished food digestion.<sup>5</sup> Because cancer patients are at a higher risk of malnutrition and other nutritional deficiencies, the role that nutrition plays in cancer therapy should not be undervalued. The immune system will probably be impacted by malnutrition, which will make treatment outcomes worse.<sup>6</sup>

Malnutrition, especially in cancer patients, could result in a general weakening of the body, reduced immunity, prolonged recovery period, and lower tolerance to the side effects of cancer therapy. Also, it might increase treatment toxicity and reduce quality of life, and 10%-20% of deaths in cancer

patients are due to malnutrition.<sup>7</sup> Early nutrition therapy should be emphasized in colorectal patients, especially the ones with malnutrition.

## CONCLUSION

Nutritional status is adversely affected by cancer treatment. Patients with colorectal cancer must follow certain dietary guidelines. Cancer patients also experience altered body homeostasis, insufficient food intake, and diminished food digestion. Malnutrition can cause general weakness, lowered immunity, a longer recovery time, and a decreased ability to withstand the negative effects of cancer therapy, particularly in cancer patients. The nutritional state of the cancer patient is positively impacted by early nutrition therapy.

## ETHICAL CLEARANCE

Patient approval was obtained in this study, and ethics approval was fulfilled by the International Committee of Medical Journal Editors (ICMJE).

## CONFLICT OF INTEREST

Authors have no conflict of interest to declare

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## AUTHOR CONTRIBUTIONS

The authors confirm sole responsibility for the following: study conception and

design, data collection, analysis and interpretation of results, and manuscript preparation.

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