

## Alternative Ketogenic Diet with Coconut Milk in a Case with Underlying Colorectal Cancer

Sir,

The nutritional modification is a common practice for a cancerous patient. The use of nutritional modification is considered a classical alternative management. Here, we present a case with underlying colorectal cancer with lung, lymph node, and bone metastasis. The patient got complete standard surgical, chemotherapy, and radiotherapy management. The patient used additional alternative nutritional modification and selected ketogenic diet. The concept of this practice is “forcing cancer cells to use mitochondrial oxidative metabolism by feeding ketogenic diets that are high in fats and low in glucose and other carbohydrates would selectively cause metabolic oxidative stress in cancer versus normal cells.”<sup>[1]</sup> It is evidenced that “ketogenic diet may also be beneficial as an adjuvant cancer therapy” adding to classical antitumor effect of chemotherapy and radiation treatment.<sup>[2]</sup> However, the main problem in this practice is the induction of severe ketosis

and hypoglycemia which can be fatal if there is no good control.<sup>[3]</sup> In the present case, the designed energy sources from nutrition plan were lipid 70%, carbohydrate 20%, and protein 10%. He ingested no flour and sugar except from tomato juice and vegetable. The source of protein was red meat. However, the patient selected to use coconut milk instead of medium chain triglyceride (MCT) oil. The patient visited our center for consultation on the nutritional management. At this visit, the patient’s serum ketone (beta hydroxyl butyrate) was equal to 4.8 mg/dl (normal range 0.5–3 mg/dl). His blood sugar was normal, 90 mg/dl. The clinical nutritionist suggested the patient to change from coconut milk to commercial MCT oil. However, the patient denied and practiced in the previous style. At 1-month follow-up, his blood sugar equaled to 110 mg/dl. This observation is very interesting since the general ketogenic diet usually results in low blood sugar, not more than 90 mg/dl. This might be due to the use of coconut

oil instead of standard MCT. In the next month, his ketone level was equal to 4.8 mg/dl and the patient developed calf muscle pain and cramp in his legs. Additional magnesium at dosage 350 mg/day was prescribed for correcting this problem and the patient returned to normal. With these nutritional modifications, the patient successfully has a ketogenic diet with above average blood sugar.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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##### DOI:

10.4103/ijmpo.ijmpo\_47\_16

**How to cite this article:** Chaiyasit K, Tripipitsiriwat K, Srikaew K, Wiwanitkit V. Alternative ketogenic diet with coconut milk in a case with underlying colorectal cancer. *Indian J Med Paediatr Oncol* 2017;38:247-8.

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