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Title: Oncology Dietitians Sound Alarm in Key Nutrition Needs of Cancer Patients during COVID-19 Pandemic.

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Abstract

The coronavirus disease 2019 (COVID-19) pandemic has challenged many healthcare systems and put them under unprecedented pressure. Maintaining adequate nutrition would help bolster the immune system, and subsequently assist the body to fight against the COVID-19. Maintaining adequate nutrition becomes more pertinent in cancer patients who are already immunocompromised due to the basic disease and cancer therapy. In this letter, we focus our discussion on the challenges being faced in maintaining adequate nutrition in addition to providing comprehensive cancer care amidst the COVID-19 pandemic.

Introduction

Almost all nations and their citizens are affected by ill-effects of this pandemic which could range anywhere from emotional breakdown to loss of lives. As of 30 April 2020, there are a total of 3,261,473 confirmed COVID-19 cases with 230,381 deaths across the globe (1). With so much disease burden, it is important to ensure that the most vulnerable subset of the population is receiving adequate attention, guidance, and care (2). Nutrition constitutes an important but undertalked aspect of cancer treatment. From the oncology perspective, coronavirus disease 2019 (COVID-19) has affected almost every health care aspect of cancer care.

Cancer patients: Special population with special needs

Based on the available literature; elderly individuals, people with multiple co-morbidities, pregnant women, individuals with weaker immunity like HIV infected, and cancer patients fall in the category of COVID-19 susceptible population (3,4). Missing on crucial chemotherapy cycles, running out of prescriptions, cancellations of oncology-related surgeries and risk of acquiring COVID-19 are few amongst the innumerable concerns for a cancer patient. Unfortunately, many
times patients and even the treating oncologists tend to overlook the importance of maintaining adequate nutritional status during the current pandemic.

**Recognizing the problems**

When it comes to nutrition care of cancer patients, oncology dietitians are the professionals who make sure that a tailored nutrition regimen is provided to every cancer patient based on the cancer site, stage of the tumor, treatment plan, and patient’s acceptability. The Commission on Cancer (CoC) now recognizes Nutrition Services as Standards of Care in oncology and states that nutrition services must be provided by a Registered Dietitian Nutritionist (5). The current COVID-19 pandemic is testing oncology dietitian’s expertise who are assisting the treating oncologists in providing comprehensive cancer care during this pandemic (Figure 1). Good nutrition and hydration become even more critical during this challenging pandemic. In Oncology Nutrition, there are several concerns in relation to coronavirus management.

**Use of antioxidants in cancer patients with COVID-19:**

As of now, there is no definitive antiviral agent or specific vaccine against COVID-19. Hence, the current COVID-19 treatment regimen in various hospitals across the world is extremely variable that includes remdesivir, hydroxychloroquine, azithromycin, plasma therapy, and so on. Recently, apart from these, adjunctive therapies like vitamin C, zinc, vitamin D, melatonin, and many others are joining the lead in the treatment protocol set for COVID-19.

With regards to cancer patients, a major concern is the overuse of supplements, specifically antioxidants which are currently being promoted to prevent and treat against SARS-CoV-2 coronavirus. The American Institute for Cancer Research does not recommend using supplements for cancer prevention (6). For patients receiving active chemotherapy and radiation,
there is controversy and concern about the use of vitamins, herbal and traditional medications, and mineral supplements. In some circumstances, the supplements may interfere with chemotherapy or radiation (7,8). Bairati et al studied 540 patients with head and neck cancer undergoing radiation treatment. They found a significantly higher death rate among patients who were prescribed vitamin E supplementation (400 IU of daily) as compared to placebo (8).

Similarly, high doses of Vitamin C are currently being studied in patients with COVID-19 (9). This is based on the previous RCTs which showed mortality benefit by using high doses of IV vitamin C in sepsis related ARDS (10). However, high-dose vitamin C can be contraindicated in some anti-cancer treatment regimens. Some of these anticancer treatments include adriamycin, mitomycin, and bleomycin (11). American Cancer Society has recommended oncologists and patients to apply the cautionary principle and to avoid antioxidant dietary supplements during treatment. While it may be worth trying high doses of vitamin C in non-cancer COVID-19 patients but literature regarding its use in cancer patients with COVID-19 is extremely sparing to suggest for or against.

**Placing Feeding tube in Head and neck cancer during COVID-19 pandemic:**

A subset of cancer patients might require a feeding tube to ensure nutrition during cancer treatment (13). This is specifically important in our head and neck cancer (HNC) population (14). The ADA Oncology Evidence-based Nutrition Practice Guideline indicates strong imperative evidence for the use of enteral nutrition to increase calorie and protein intake for outpatients with stage III/IV HNC undergoing intensive radiation treatment. Maintenance of nutrition status by enteral nutrition during radiation therapy may improve tolerance of therapy to promote better outcomes. For the same reason, it is our practice for HNC patients who receive
concurrent chemotherapy and radiation with stage III/IV disease to traditionally get a feeding tube placed prophylactically before treatment starts. Because a PEG placement may be considered an elective procedure, we are facing difficulties with having the tubes placed as most elective surgeries are currently on hold due to the COVID-19 pandemic crisis.

For now, we are following a watch and wait approach rather than a prophylactic approach with the feeding tube placement. However, our concern is that this might compromise the nutrition and hydration of these patients that ultimately will lead to more ER visits and hospitalization. Currently, we are trying to avoid any unnecessary office visits for our cancer patients unless mandatory. We are motivated by ourselves and also encouraging our patients to use the telemedicine services via skype, zoom, and other portals for non-urgent queries. However, in our practical experience, another challenge in some circumstances is that we are finding difficult to connect to some patients who are not answering their phone.

**Concerns over food safety and quality during COVID-19 pandemic**

There is always a concern about food safety and security for our patients with cancer. Few practical challenges are these patients might be having limited access to grocery stores. They may ignore expiration dates and make food last longer than it should which puts them at risk of foodborne illnesses. The quality of food may be poorer as many are not buying as many fresh foods and many are choosing to have more comfort foods and unhealthy foods.

**Conclusion**

So far, during this COVID-19 pandemic, “nutrition care of cancer patients” remains an under-discussed aspect that needs immediate attention of the world bodies and societies. Having malnutrition would likely make recovery from COVID-19 more difficult and further weaken
one’s immune system. We hope that the messages of self-care, healthy lifestyle and balanced nutrition for cancer patients during the COVID-19 crisis will be taken seriously.

Figure 1. Schema to describe the interactive and collaborative effort required to provide a comprehensive cancer care
References


6. https://www.aicr.org/


14. Mixer M, Stringfellow A. Nutrition and clinical factors for determining the need of enteral nutrition for head and neck cancer patients. Support line. February 2019; Volume 41 No.1, 3-10