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THE IMPORTANCE OF PREOPERATIVE NUTRITIONAL SUPPORT FOR POST SURGERY BENEFITS AND MINIMIZATION OF THE CATABOLIC CRISIS

Nutricia presents the second in a three-part series of discussions around the importance of medical nutrition as a part of supportive care in cancer. These articles will focus on the impact of weight loss and loss of muscle mass on survival and the role of medical nutrition in achieving the full benefit of the prescribed cancer treatment for patients and better patient outcome.

Caught in a vicious cycle

Cancer patients often lose weight either as a consequence of the metabolic changes such as inflammation caused by the tumor itself, which can lead to increased catabolism or simply because of reduced food intake due to pain, fatigue and side effects of the cancer treatment[1,2]. Nausea, vomiting and taste alterations are often reported side effects of treatment causing low food intake[3]. At least one third of cancer patients are affected by cancer-related malnutrition[4].

Weight loss and loss of muscle mass before surgery

One kg weight loss in cancer patients corresponds to 500 g of lost muscle mass. Weight loss is often present even before surgery for cancer patients[5]. Maintaining muscle mass is very important as patients with low muscle mass have lower survival compared to patients with higher muscle mass[5,6]. Studies have found, sarcopenia, identified before surgery is associated with impaired overall survival in gastrointestinal and hepatopancreatobiliary malignancies and increased postoperative morbidity is found in patients with colorectal cancer with or without hepatic metastases[7]. On average one in three patients have lost muscle mass before surgery, and loss of muscle mass increases further after Neoadjuvant treatment[7,8]. Weight loss and loss of muscle mass in cancer patients can lead to postoperative complications. It can lead to prolonged length of hospital stay and increased postoperative morbidity after surgery in sarcopenic patients[7]. It is important to keep in mind that even overweight patients can be sarcopenic and sarcopenic obese patients have been reported to have shorter survival as well[9].

Weight loss and loss of muscle mass

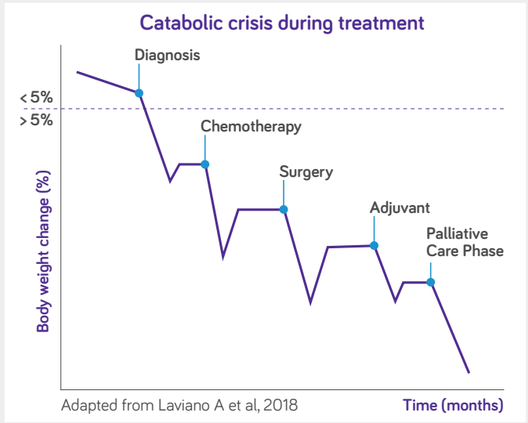
One kg weight loss corresponds to 500 g of lost muscle mass.

> Increased protein intake is crucial to maintain muscle mass and muscle strength[13].

Nutritional support for cancer patients

Nutritional support is an essential part of the clinical management of cancer patients. Cancer patients have increased protein requirements and are recommended up to twice the amount of protein (1,5 g/kg/day) compared to healthy people (0,8 g/kg/day)[13,14].

At different stages in the treatment journey, the patient will experience several catabolic crisis, which can lead to an accelerated weight loss. Allessandro Laviano emphasizes how the impact of the catabolic crisis needs to be minimized in order to optimize the recovery phase[14]. This is the window of opportunity to help patients regain weight and muscle mass in order to optimize treatment.



> Preoperative nutritional support in cancer patients, even with no clinical signs of malnutrition, has shown to give less frequent and less severe postoperative complications, shorter length of stay and fewer readmissions[10,11,12].

Pre-operative nutritional support for post surgery benefits

Use of high protein nutritional supplements prior to surgery leads to less frequent and less severe post operative complications and improved quality of life for patients[11,12]. Patients also have significantly shorter duration of hospital admission[11,12] and fewer hospital readmissions[11]. European guidelines for nutrition recommend early screening and adequate energy and high-protein nutritional supplementation. The protein need for cancer patients is up to twice the recommended amount of protein in comparison for a healthy person[16,17].

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Recommended guideline for energy:
25-30 kcal / kg / day

Recommended guideline for protein:
1-1,5 g / kg / day

Call for action

"Preoperative nutritional support should be introduced for normal nourished patients as it helps to maintain proper nutritional status and reduce number and severity of postoperative complications compared with patients without such support[10,11,12,13]".

References
1. Marin Caro MM et al. Clin Nutr. 2007;26(3): 289-301
2. Fearon K et al. Nat Rev Clin Oncol. 2013; 10(2):90-9
3. Spotten LE et al. 2017 Annals of Oncology 28:969-984
4. Pressoir M et al, 2010 Br J Cancer. 16;102(6):966-71
5. Grossberg AJ et al JAMA Oncology 2018
6. Tao W, et al. Nat Rev Clin Oncol. 2013;10:519-533.
7. Levolger S, et al. Br J Surg. 2015 Nov;102(12):1448-58
8. Awad S, et al. Clin Nutr. 2012;31:74-77
9. Yip C, et al. Eur Radiol. 2014;24:998-1005
10. Kabata P, et al. Support Care Cancer. 2015 Feb;23(2):365-70
11. Mańásek V, et al. Klin Onkol. 2016 Fall;29(5):351-357
12. Boelens PG, et al. Ann Surg. 2014 Apr;259(4):649-55.
13. Arends J, et al. ESPEN Guidelines on nutrition in cancer patients. Clin Nutr 2016; doi10.16/j.clnu.2016.07.015:1- 109.
14. Presented at ESMO guideline session 2018. Paper under preparation
15. Laviano et al. 2018, Proc Nutr Soc; 77(4):388-393
16. Arends J, et al. ESPEN Guidelines on nutrition in cancer patients. Clin
17. Presented at ESMO guideline session 2018. Paper under preparation