resources may lead to improved comprehensive oncological care during treatment.

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Feasibility, physical capacity, and health benefits of a multidimensional exercise program for cancer patients undergoing chemotherapy

L. Adamsen[1], J. Midtgaard[1], M. Rørth[2], N. Borregaard[3], M. Quist[4], J. Madsen[4], L. Knutsen[4], C. Andersen[2], T. Moeller[3], M. Zacho[5]. *[1]The University Hospitals Centre for Nursing and Care Research, Dept 7331, Copenhagen O, Denmark; [2]Dept. of Oncology, Dept. 5073, Copenhagen O, Denmark; [3]Dept of Hematology, Dept 4042, Copenhagen O, Denmark; [4]The University Hospitals Centre for Nursing and Car, Dept 7331, Copenhagen O, Denmark; [5]Copenhagen Muscle Research centre, Dept4042, Copenhagen, Denmark*

Background: Cancer patients frequently experience considerable loss of physical capacity and general well being when diagnosed and treated for the disease. This study aims at evaluating the feasibility, physical capacity, and health benefits of a multidimensional exercise program for cancer patients at advanced stages of disease who are undergoing adjuvant or high-dose chemotherapy.

Methods: The program includes high and low intensity activities (physical exercise, relaxation, massage, and body-awareness training). Twenty three patients (n=23), between 18-65 years of age (median 40 years) participated in a supervised program in groups of 7-9 patients 9 hours weekly for 6 weeks. Physical capacity (RM, VO2max), physical activity level and psychosocial well being (EORTC QLQ-C30, SF-36, HAD) were compared prior to and after completion of the program.

Results: The program was safe and well tolerated. The completion rate was 85.2%. Highly significant increases in physical capacity (1RM, VO2max) and an improved level of physical activity were achieved. Quality of life and general well being assessments indicated improvements in several measures, however, without reaching significance.

Conclusion: It is concluded that an exercise program, which combines high and low intensity physical activities, may be used to prevent and/or minimize physical inactivity, fatigue, muscle waste and energy loss in cancer patients undergoing chemotherapy.

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Nutrition therapy for the cancer patient

B. Raynard. *Institut Gustave Roussy, Service de réanimation, Villejuif, France*

Malnutrition in cancer patient results from multifactorial events and is associated with an alteration of quality of life and a reduced survival. The combination of inadequate food intake and metabolic alterations generally leads to cancer cachexia. Several tumours could directly induce proteolysis and lipolysis. A simple nutritional assessment program and early counselling by a dietetitian are essential to guide nutritional support and to alert the physician to need an enteral (EN) or parenteral nutrition (PN). A daily intake of 20-35 kcal/kg, with a balanced contribution of glucose and lipids, and of 0.2-0.35 g nitrogen/kg is recommended both for EN and PN, with an adequate provision of electrolytes, trace elements and vitamins. EN, always preferable for patients with an intact digestive tract, and PN are both safe and effective methods of administering nutrients. The general results in clinical practice suggest no tumour growth during nutritional support. EN and PN is not clinically efficacious for well-nourished patients treated with chemotherapy or radiotherapy, unless there are prolonged periods of GI toxicity, as in the case of bone marrow transplant patients. Severely malnourished cancer patients undergoing major visceral surgery, also chemotherapy or radiotherapy, may benefit from perioperative nutritional support, preferably via enteral access. Nutritional support in palliative care should be based on the potential risks and benefits of EN and PN, and on the patient's and family's wishes. Research is currently directed toward the impact of nutritional pharmacology on the clinical outcome of cancer patients. Glutamine-supplemented PN is probably beneficial in bone marrow transplant patients. Immune diets are likely to reduce the rate of infectious complications and the length of hospital stay after GI surgery. Fish oil could inhibit tumour induced proteolysis. Further studies are needed to determine the efficacy of such novel approaches in specific populations of cancer patients, and should also address the question of the overall cost-benefit ratio of nutritional pharmacology, and the effect of nutritional support on length and quality of life.

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Can nurses and dieticians collaborate to improve the management of cancre-related anorexia and cachexia?

M. Simon. *Centre Alexis Vautrin, Cadre en dietetique, Vandoeuvre les Nancy, France*

It is now clearly established that nutrition level is closely related to morbidity and mortality especially in cancer disease and this before, during and after the different cancer treatments (surgery, radio or chemotherapy, ...).

Nurses have the privilege to take care of the patient in a globally way and due to their function are the closest persons to the patient.

Dieticians are specialists of nutrition care, that means of nutritional status, digestive function, alimentary behaviour, eating disorders, home nutrition organisation, ...

To take care and survey our patients we ask the same questions and use the same answers: weight, height, digestive functions, diagnosis, future treatment, medical constants (temperature, blood pressure, blood analysis, pain evaluation, ...).

But it clearly appears that usually there is only one dietician for several nursing departments. So, for more efficacy and efficiency it is recommended that nurses and dieticians work together in total complementarity and this at different care levels to improve the management of cancer-related anorexia and cachexia:

- At the arrival of the patient, a nutritional screening made by the nurses helps them to address the undernourished patient or those with an undernourishment risk, to the dietician. A right selection of the patient helps the dietician to be more efficient for the patient.
- During the treatment, it is very important to prevent nutritional complications of radio or chemotherapy. If nurses and dieticians deliver to the patients the same information (according to taste disorders, dysphagia, digestives disorders, ...), survey digestive functions and alimentary incomes, this will help the patients to accept the hardness of the treatments and lead them with less nutritional complications.
- After the treatments they survey and take care of the nutritional status, digestives disorders, help to home eating organisation, ...

In any case during the stay in hospital, the daily survey of alimentary intakes, help nurses to address the patient to the dietician. An early dietary undertaking helps to fight under-nutrition without wasting time: it is always better to prevent !!!!.

As we can see, at each level, nurses and dieticians needs to work together. A multidisciplinary team will guarantee to the patient an appropriate care, with efficacy and efficiency.

But a good collaboration needs to establish together evaluations forms for nutritional screenings, survey protocols, alimentary intakes recording, ... For a good quality patients undertaking, we need to share informations and have a common care attitude to save time fighting against cancer anorexia and cachexia.

In conclusion, to improve cancer-related anorexia and cachexia, we need an early and total collaboration between nurses and dieticians, developing closer working relationship.