

An overview of the European Society of Medical Oncology (ESMO) Symposium on Cancer and Nutrition 2009: from cancer prevention to nutrition support to alleviating suffering in patients with advanced cancer

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Introduction

The European Society of Medical Oncology Symposium (ESMO) on Cancer and Nutrition convened on March 20–21, 2009, in Zurich, Switzerland. Welcoming 172 participants from 32 countries and from 4 different continents, this symposium was designed to address issues directly relevant to the interface between clinical nutrition and cancer. Was there truly a need for such a conference? The organizers of this meeting contend that the answer is “yes” and cite the following salient examples to show that nutrition really does impact cancer and cancer patients and that focusing a symposium on the interface between nutrition and cancer holds merit.

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Firstly, it behooves us to always test assumptions of efficacy and safety, particularly with nutritional interventions which are often assumed to be safe. Rates of vitamin/nutritional supplementation vary dramatically throughout the world, but, in some populations, as many as 80% of individuals are taking them [15, 27]. Despite this high prevalence, only a few studies have demonstrated that supplements prevent cancer, and such studies suggest benefits are confined to nutrient-depleted populations [17]. For example, when one considers the plethora of epidemiologic data that points to an association between beta carotene-rich fruits and vegetables and a diminished risk of lung cancer, it is tempting to conclude—albeit prematurely and unwisely—that beta carotene supplementation is safe and even beneficial. Subsequent studies have nullified this conclusion. In the recent VITAL study that included 77,126 individuals, Satia and others reported that long-term use of patient-reported beta carotene (<10 years) was associated with a greater risk of lung cancer [21]. More importantly, two placebo-controlled, double-blinded randomized clinical trials tested β -carotene at doses of 30 mg in 18,314 individuals and 20 mg in 29,133 individuals all of whom were at high risk for lung cancer. Unexpectedly, both these trials demonstrated that the incidence of lung cancer increased by 28% or more and that, as a result, mortality was worse as a result of beta carotene supplementation. Yes, the unthinkable can happen, and therefore, rigorous testing with proof of safety and efficacy must be established prior to recommending any nutritional supplements, particularly those prescribed at “high” doses.

Secondly, one might question whether diet itself has any favorable effect on cancer or cancer recurrence. The Women's Intervention Nutrition Study suggests that it does. A total of 2,437 early-stage breast cancer patients were

randomly assigned to one of two arms: a diet that consisted of a 20% reduction in fat versus a regular diet. Preliminarily, relapse-free survival was more favorable in the intervention arm that received the 20% reduction in fat intake; the hazard ratio on the intervention arm was 0.76 (95% confidence intervals 0.60, 0.98; $p=0.77$ for stratified log rank and $p=0.034$ for adjusted Cox model analysis). Did this difference in relapse-free survival occur by chance? Did the weight loss that occurred from a low fat diet contribute to this favorable outcome? Or did other health-promoting habits that may have occurred with the dietary intervention lead to these improved outcomes? Although this study prompted many more questions than it answered, the tentative observation that a modification in diet can affect cancer outcomes should be carefully noted. This study underscores the importance of conducting dietary research in cancer patients and cancer survivors and suggests that diet can truly make a difference in cancer outcomes.

Thirdly, nutritional counseling has always been an important aspect of cancer care, but recent data have refocused attention on this intervention. At the symposium, it was discussed that intensive dietary counseling has grade “A” evidence in favor of its use to prevent weight loss and treatment interruptions in patients with gastrointestinal and head and neck malignancies [20]. Ravasco also presented data on the late effects of radiotherapy, showing improvement of diarrhea, abdominal distention, and flatulence in the nutrition intervention group (group 1) compared to the less-intensive counseling groups (group 2, nutritional supplements; group 3, control) and even more astonishingly showed a 100% survival in group 1 in contrast to groups 2 and 3 which had a 4-year survival of 88% versus 75%. It can be summarized that there is good evidence that individualized nutritional counseling improves outcomes. Professor Laviano discussed that malnutrition is a risk factor for decreased survival and post-operative complications [3, 14, 19, 23]. Despite this risk, few interventions—with few exceptions such as that described by Ravasco—have been able to improve such poor outcomes [22].

Fourthly, given the importance of malnutrition as a risk factor for decreased anticancer treatment tolerance and poor survival, the importance of early detection of nutritional risk and malnutrition was discussed. A variety of clinically feasible screening tools are available in daily practice. Zeno Stanga summarized simple screening tools for the community (MUST), hospital (NRS 2002), and geriatric care homes (MNA), all with moderate to substantial inter-rater reliability. Several abstracts documented the impact of systematic nutritional assessment (and counseling) on cancer relevant outcomes. For example, Rufenacht et al. presented findings from a randomized controlled trial in an oncology outpatient setting, comparing nutritional counsel-

ing and oral nutrition supplementation versus a less aggressive approach. Preliminary results of 14 patients suggested improved energy intake and quality of life with the former. A study by Sharma et al. suggested that a comprehensive symptom control and pain management program that included enteral nutrition support can lead to improved nutritional status and higher completion rates of palliative anticancer therapy.

Fifthly, some of the potentially detrimental effects of nutritionally based therapies were also discussed. Two presentations by Vandebroek and Jatoi summarized the current knowledge of nutritional or herbal supplements and anticancer drugs with an emphasis on oral anticancer treatments. A key point of Vandebroek was that 38–85% of patients taking herbs or nutritional supplements (including antioxidants, vitamins, etc.) are in a “communication disconnect”: they have no consultation with the physician emphasizing these issues. This contrasts to the manifold potential interactions on pharmacokinetics (absorption, distribution, metabolism, elimination) and pharmacodynamics. Red flag substances encompass not only grape fruit, St. John's Worth, ginkgo, ginseng, echinacea, kava, grape seed, and evening primrose but also substances causing excess and depletion of antioxidants. These data demonstrate that nutrition is important to patients to fight cancer, but oncologists need to “be aware” and seek actively communication about eating habits.

As *sixth* example of the importance of nutrition and cancer, at the symposium, the management of patients with advanced, incurable cancer was discussed. Alessandro Laviano emphasized the various effects of anticancer treatment: (1) that tumor response is often associated with improvement of cachexia-related symptoms [8, 12], (2) that anticancer treatment can deteriorate energy intake [16, 24], and (3) that chemotherapeutic agents can directly affect skeletal muscle [25]. These data suggest that continuous monitoring of patients' nutritional intake [4], weight, and associated symptoms (e.g., early satiety, fatigue) is of value. A recent paper by Deans investigating various cytokine polymorphisms in patients with gastroesophageal malignancies demonstrated that the IL10-1082 gene promoter polymorphism is associated with increased total weight loss, but—at diagnosis—not the interleukin-6 polymorphism (IL6-174). Patients carrying the interleukin-10 GG allele have a 2.3-fold increased risk to develop cachexia [6]. The developing cancer cachexia classification no longer focuses on weight loss and anorexia only but includes key domains (anorexia/reduced food intake, catabolic drive/inflammation, loss of muscle mass and strength, additional metabolic and endocrine factors, impact of cachexia, physical and psychological functioning). Strasser summarized the international work on a generic cachexia definition [7] and the cancer-specific classification

work led by the European Palliative Care Research Collaborative [11]. In line with this multidomain understanding of cancer cachexia, several groups pursue a multi-target anti-cachexia treatment, both in animals [26] and cancer patients [13]. Orrevall presented in a very recent paper [18], based on 21 palliative home care services and telephone interviews with 621 patients, a high frequency of not only combined oral nutrition and oral supplements (41%) but also artificial nutrition (14%). Accompanying qualitative interviews from a prior study demonstrate that patients and family members seem to have physical, social, and psychological benefits from home nutritional support, even in a life span of a couple of months. Since a majority of patients with advanced cancer raised concerns about weight loss or eating less [9], interventions were developed based on education and communication, conflict management, and empowerment of the patient to support eating well and self action. This McMillan approach to weight loss and eating difficulties was tested in a two-site cluster-randomized controlled trial, investigating the effectiveness of this approach.

The ESMO Symposium on Cancer and Nutrition: spectrum of topics and concluding messages

Studies such as those alluded to above as well as others demonstrate that the study of nutrition and cancer is ripe with promise. Thus, the ESMO Symposium on Cancer and Nutrition was organized and convened to provide a state-of-the-art discussion of these subjects. It is important to emphasize that the topics included those mentioned above, representing a spectrum of interests from (1) the impact of nutrition on cancer prevention and survivorship, (2) the evaluation of the nutritional status of the cancer patient, (3) the use of nutrition to improve patient outcomes, (4) interactions between nutritional interventions and patient outcomes, and (5) a discussion of nutritional issues in patients with advanced cancer. In total, 29 oral presentations as well as numerous poster-based abstracts were included within this symposium, which provided both an update of previously reported data as well as observations that had never before been presented.

In the symposium's concluding remarks, two important recommendations emerged. First, the multidisciplinary aspect of this symposium—with the inclusion of epidemiologists, basic scientists, nutritionists, psychologists, primary care physicians, and oncologists—suggested the importance of recognizing nutrition-related guidelines already formulated by a host of other prominent organizations, such as the European Society of Parenteral and Enteral Nutrition, the American Society of Parenteral and Enteral Nutrition, the American Cancer Society as well as

others [1, 2, 5, 10]. Second, the value of and lack of precedent for such a symposium were such that the possibility of making nutrition and cancer a recurring theme for future symposia was duly noted and encouraged. The value of focusing on the interface between nutrition and cancer should be recognized as future symposia are planned.

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