Nestlé Nutrition Institute

NEWS RELEASE

Specialised Nutrition Changing the Oncology Treatment Paradigm

- **Both cancer and its treatment can limit patients' ability to consume adequate nutrition**
- **Malnutrition and weight loss is a risk factor for increased toxicity of cancer treatment and can limit anticancer therapy**
- **Nutritional supplementation during chemotherapy can help prevent weight loss, allow patients to better tolerate treatment-related side effects and improve quality of life**

Vevey, Switzerland, **October 2013** – 'Nutrition and patients - outcomes in oncology' was the focus of a Nestlé Nutrition Institute satellite symposium held during the 35th ESPEN Annual Congress. During the symposium international experts highlighted that cancer and cancer therapy often lead to malnutrition and weight loss, but specialised nutritional supplementation can help prevent or reverse these impacts and improve patients' quality of life. Furthermore, it was shown that cancer treatment efficacy can be compromised by patients' poor nutritional state and the toxicity of chemotherapy can exacerbate weight loss and sarcopenia (severe depletion of skeletal muscle, and therefore of overall lean body mass).

Malnutrition has a negative impact on cancer treatment

Professor Jens Kondrup of Rigshospitalet at the University of Copenhagen, Denmark, highlighted the extent of the problem: "Weight loss is seen in 35 per cent of cancer patients at diagnosis, and many more develop weight loss and malnutrition during therapy, so nutritional aspects will certainly increase in clinical significance in the coming years". Focusing upon upper gastrointestinal (GI) cancers specifically, Professor Christophe Mariette of the University Hospital of Lille, France, highlighted that up to 85 per cent of patients with pancreatic or stomach cancer have malnutrition at diagnosis.[1] Importantly, not only is malnutrition a risk factor for post-operative complications, it is also associated with many adverse outcomes during chemotherapy, including lower responsiveness to treatment, dose-limiting toxicity, more unplanned breaks in treatment and impaired quality of life.[2-4] Professor Mariette stressed the need to find ways to reduce chemotherapy-related toxicities in upper GI cancers. He described a recent randomised trial in which enteral nutritional support was compared with parenteral nutrition in 91 patients undergoing neoadjuvant chemotherapy for oesophageal cancer.[5] Summarising the findings, Prof Mariette said, "Compared with parenteral nutrition, enteral support reduced the incidence of leukopenia and neutropenia of grade 3 or 4, and lowered the incidence of chemotherapy-related toxicities in these patients".

Nutritional supplementation improves quality of life

Quoting the WHO definition, Professor Kondrup stated that health is not only absence of disease, but also optimal well-being, so quality of life is very important. He reviewed the literature across many therapy areas and showed that nutritional interventions can improve patients' quality of life. Over the last 20 years, 11 out of 17 studies demonstrated quality of life benefits associated with nutritional support. With the advent of more sensitive tools to measure

quality of life, almost all studies over the last 10 years have shown a benefit with nutritional supplementation, but a systematic review and meta-analysis are needed to consolidate the data and give us a clearer picture. “What is needed”, said Prof Kondrup, “is nutritional support that is cost-effective to society, so that the intervention is desirable both from the patient’s perspective and from the payer’s perspective”.

Vicious cycle of malnutrition-treatment toxicity-malnutrition

Not only does patient malnutrition lead to higher chemo-toxicities, the toxic nature of cancer therapies themselves can cause inadequate food intake and malnutrition. Professor Vickie Baracos of the University of Alberta, Canada, highlighted this vicious cycle, suggesting that there needs to be a balance between the efficacy of chemotherapies and their toxicity to the patients. If patients experience intolerable toxic effects of treatment, their chemotherapy will be limited in terms of dose reductions, delays in therapy or discontinuation.

A study in patients with metastatic breast cancer receiving capecitabine treatment showed that 50 per cent of patients with severe depletion of the muscle mass experienced dose-limiting toxicity, compared with just 20 per cent of those with normal muscle mass.[6] This effect is even worse if patients have a low BMI explained Prof Baracos: “in renal cell carcinoma patients treated with sorafenib, dose-limiting toxicity is seen in 37 per cent of patients with severe depletion of muscle mass, and in only 5.5 per cent of those with normal muscle mass. But for patients with a BMI of less than 25 kg/m^2, the percentages rise to 71 per cent and 10 per cent”[7]. The way forward, said Prof Baracos, is to adjust treatment decision making according to nutritional status and develop nutritional therapy to rebuild muscle mass and body weight. She concluded: “Only then can the right balance be found between maximising the therapeutic effect and minimising the toxic effect of cancer treatment”.

Nutritional supplementation can help patients fight cancer and improve the efficacy of cancer treatment

Cancer patients benefit from good nutrition in many ways according to Dr Alessandro Laviano of the Sapienza University of Rome. He showed how specialised nutritional intervention during chemotherapy can prevent or treat cachexia (weight loss, wasting of muscle and loss of appetite), and boost the immune response which will help patients fight their cancer. Food may also have a direct effect on tumours stated Dr Laviano: “Food is a potent inducer of metabolic responses, so we need to find a way to use specific nutrients to modulate the growth of tumour cells”. Supplementing the diet with specific nutrients to improve the immune response - called immunonutrition – has been shown to have significant benefits in cancer patients. Malnourished head and neck cancer patients who received perioperative arginine supplements were shown to survive longer than those without the supplement,[8] and omega-3 supplementation can reduce chronic inflammation that promotes tumour growth.[9] Dr Laviano emphasised the importance of new research to help our understanding: “Specific nutrients, or in some cases their absence, appear to exert direct anti-cancer activity, and these need to be tested in clinical trials so cancer patients can optimise their response to therapy and have the best chance of survival”.

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Notes to editors:

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