

Probiotics, Nutrition and Microbes

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Probiotics, diet and cancer therapy: A promising synergistic approach

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In the last decade, interactions between human microbiome and tumor have attracted much interest in trying to understand the characteristics of complex microbial communities, as well as their possible mechanisms through which they are involved in cancer prevention, carcinogenesis and anti-cancer therapy. Cancer patients can benefit from different types of therapeutic strategies. However, the toxicities associated with these therapies can cause dysbiosis, colitis and IBS symptoms, affecting the patient's quality of life and the response to therapy. Several studies identify a compositional and functional imbalance in the intestinal microbial community associated with GI mucositis induced by chemotherapy. Furthermore, signs of a previous dysbiosis may also occur due to the effect of gastric tumors on the digestive system, increasing the risk of systemic infections. It is well known that there are several dietary interventions aimed to improve dysbiosis and IBS symptoms. In this contest, a dietary regime containing low glycaemic index foods, high in soluble fibre, adequate in protein, high in omega-3 containing foods (wild fish and low in omega-6 nuts), dairy free, red and cured meat free was effective in reducing or eliminating IBS symptoms, such as diarrhoea/constipation episodes, and bloating in 80% of the patients analysed (n=146, age 18-64, 120 women, 26 men). The purpose of this study was to see if the same dietary regime, in combination with the administration of probiotics containing *Lactobacillus rhamnosus*, applied to a small number of pancreatic cancer patients at the beginning of their first cycle of chemotherapy will improve the common gastrointestinal side effects to prevent weight loss and dysbiosis. Preliminary results (patients n=10, age 40-75 without metastatic tumours) show that all the patients experience only short diarrheal episodes and tiredness in the two days after the chemotherapy but no further digestive symptoms in the following days or weight loss.

Biography

Claudia Gravaghi has 14 years of progressively advancing career as an Academic Researcher in Nutrition, Cancer and Metabolic Diseases. She has worked as Research Fellow to study the effect of omega-3 on mouse models colon rectal cancer and IBD at the Strang Cancer Prevention Centre at the Rockefeller University. She went on to work at Weill Cornell Medical College at the New York Presbyterian Hospital after being awarded a grant in Nutrition and Cancer Prevention by the NIH to investigate the effect of obesity on breast cancer. In the last eight years, she has been relentlessly working as private Clinical Nutritionist creating a dietary regime to improve digestive symptoms especially during chemotherapy in gastrointestinal cancer patients.

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