

Nutrition and its Important Role in Maintaining an Adequate Immunity during Chemotherapy

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Abstract

Vitamin A is essential for the immune system. It is involved in the differentiation and maturation of T and B lymphocytes, and in the production of antibodies. Deficiency of vitamin A leads to impaired immune response and increased susceptibility to infections. Chemotherapy can lead to vitamin A deficiency, which may further compromise the immune system. Therefore, maintaining adequate levels of vitamin A during chemotherapy is crucial for maintaining an adequate immunity. This review discusses the role of nutrition in maintaining immunity during chemotherapy, focusing on the importance of vitamin A. It also discusses the role of other nutrients, such as omega-3 fatty acids and glutamine, in supporting the immune system. The review concludes that a balanced diet rich in vitamins and minerals is essential for maintaining an adequate immunity during chemotherapy.

Keywords: Cancer; Chemotherapy; Metabolic function; Omega-3 - glucan; Glutamine

Role of Nutrition in Cancer Chemotherapy

Each year, almost 90,000 American women are diagnosed with gynaecological tumours and submitted to oncological treatment, such as Chemotherapy (CT) [1]. It is a very aggressive way of combatting cancer, and can produce a wide range of side effects [2]. Studies have therefore been undertaken in an attempt to identify nutritional substances which can help reduce these side effects and complement the treatment of cancer [3,4]. In this brief review, we will refer to three classes of functional and nutraceutical substances which display high potential as supplementary forms of treatment of patients undergoing CT [5].

Eicosapentaenoic Acid (EPA) and Docosahexaenoic Acid (DHA) are derivatives of the polyunsaturated acid omega-3 and have been shown to produce marked therapeutic improvements in a number of patients undergoing CT. These improvements include an increase in the effectiveness, and a reduction in the toxicity, of drugs prescribed [6,7], thereby producing a better response to CT. At the same time, there has been a considerable decrease in the side effects caused by such treatment, particularly in terms of improvement in appetite and body weight, survival rates and general quality of life, as well as a reduction in the time spent in hospital, and in the gravity of post-surgical infections [6,8,9].

It is extremely important to strengthen the immunological system

