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Diet and nutrition in disease management

Atroshi Faik, Latvus A and **Westermarck T**
University of Helsinki, Finland

Nutrition is of fundamental importance in health and disease. So far we seem to have been excited to get the promising biomarkers for the diagnosis and therapy, but the benefits have fallen short of our long expectations. There is no doubt that many diseases such as cancer could come from our environment and the damage it does to the disease/cancer-causing genes. Since medical treatment still cannot eradicate various diseases (such as cancer, HIV etc.) from the infected body, the role of nutrition is very critical to the progress of the disease. Trace elements play a significant role in health and nutrition due to their involvement in various enzyme systems. They are present as components of nutrients and constituents of enzymes, vitamins, hormones and other proteins and thus contribute to the growth, development and the maintenance of healthy nutrition. It is known that microelements interact with other trace elements and these interactions may play a role in the aetiology of disease. Oxidants and free radicals are known to cause tissue damage and are thought to play an important role in the pathology of various diseases such as cancer. Nevertheless, the exact role of free radicals, especially during cancer treatments, is still largely not clearly defined. The development of new therapies requires many efforts from a different angle. Managing the patient's health should be based on the individual patient's specific characteristics, including age, gender, weight, diet, environment etc. However, there are great challenges to be met in the development of such therapies and the time lag between the discovery of a new gene target and the development of a proper diet may require a different approach from the researcher. Selenium plays a crucial role in the maintenance of cellular redox homeostasis and plays their most important role as cofactors in enzymes. Therefore, there is a natural motivation to apply active bioimmunotherapy in many disease forms. Present treatments are like treating a scurvy patient by extracting his loose teeth, but not giving him vitamin C. Understanding the nature of a particular tumour can help us to optimize therapy or to design therapeutic approaches. An efficient biological treatment modality which is devoid of side effects and is economical will give screening for cancer, such as CaP a new rationale, since the progress of the disease may now be arrested and even bone metastases may be cured in a physiological way. Changes in trace element metabolism occur in various diseases. Trace element therapeutics involves the central nervous system where the use of lithium has provided impressive results in the treatment of affective and other disorders. Due to its clinical importance, screening of dietary input may help to prevent nutritional and trace element deficiency.

faik.atroshi@helsinki.fi