Immunonutrition: Established and experimental components

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Introduction: Immunonutrition constitute a special form of artificial nutrition which contains selected elements to modify the immune response of surgical and critically ill patients. There are several substances which are said to act in an immune-modulating way.

Materials and methods: The aim of this paper was to assess the status and impact of each single component used in immune-nutritive formulas. The sources consulted for the search were Pubmed and Sciencedirect. Several reviews, human and animal studies were used to offer an overview of the topic.

Results and discussion: Immunonutrition is a particular form of artificial nutrition. It can be rated among the modified macromolecular diets of clinical nutrition. Its particularity is the addition of immune-modulating substances. The aim of its use is to influence the clinical course of surgical and critically ill patients in a positive way. Established components are the amino-acids arginine and glutamine, nucleotides and omega-3-fatty acids. Arginine is the most commonly used substrate. Available data indicate a possible benefit of its supplementation for surgical patients. The effect for critically ill patients is ambiguous. Supplementation of glutamine show positive effects on the recovery of different groups of patients. The frequency of infections and the length of hospital stay could be influenced in a positive way. Nucleotides are an integral part of immune-nutritive formulas. Despite the possible beneficial effects, there are also studies which show controversial results. Omega-3-fatty acids most probably have beneficial effect on the healing process of surgical and critically ill patients. Fewer infections and shortened hospital stays can be observed after supplementation. Antioxidants, taurine, glycine, cysteine and branched-chain amino-acids are also in experimental use.

Conclusion: Immunonutrition represent an interesting perspective in the therapy of different groups of patients, whereas a benefit could not be assessed equally for all groups. Fairly certain profit could be found for surgical patients. Immune-nutritive substrates seem to be valuable additives for improved outcomes. The benefits for critically ill patients, for example patients suffering from sepsis, trauma or serious burns, are not completely resolved. Available data are inconsistent. Even harmful effects may occur. So there is a need for further studies to examine the impact on critically ill patients.

References:


Heyland DK and Samis A. Does immunonutrition in patients with sepsis do more harm than good?


