Metabolic Nutri-Expert System: A Comprehensive Tool for Achieving Metabolic Control of Inborn Errors of Amino Acid Metabolism

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Abstract

The main aim of this study was to develop a comprehensive nutritional planning expert system for inborn errors of amino acid metabolism (IEAAM). Metabolic Nutri-Expert System, integrated in the electronic nutritional history record, was designed to accelerate either dietitian or patient/parent knowledge acquisition and education about the particular disease and propose culturally appropriate low protein diet to improve metabolic control or maintain the present health status. The Genetic Metabolic Dietitians International (GMDI) nutritional guideline was used to estimate the recommended nutritional values in the proposed system. The recommended daily Intakes (RDIs) for patients ingesting amino acid mixture, the U.S. Department of agriculture (UDSA) nutrient list, and both Iranian and modern low protein recipes were applied to perform diet planning. The proposed system also allows the user to modify the diet as he/she likes, and to propose his/her own low protein cookery recipes as well. This comprehensive computer system, through the multidisciplinary viewpoint, aimed to at least partially replace some of the regular traditional metabolic dietitian visits and optimize the
patient's metabolic control and adherence outcomes.

References


Index Terms

Computer Science

Artificial Intelligence
Keywords

Inborn errors of metabolism; Expert systems; Nutrition Therapy; Amino acids