QUANTITATIVE ANALYSIS OF NUTRIENTS BALANCE IN DAILY DIETS OF THE SECOND GENERATION

O. Cherevko, G. Krutovyi, G. Zaparenko, A. Borysova

In the article, the balance of the bond groups of nutrients for twenty-eight daily diets of the second generation is quantitatively analyzed with the use of the authors’ technique. The specified diets differ from the similar rations of the first generation by the inclusion of purposefully designed unconventional flour products enriched in such deficient nutrients as boron, selenium, fluorine, etc.

The highest level of the nutrients balance in the created daily diets of the second generation belongs to Ca group (calcium, fat, phosphorus, magnesium). Average daily and weekly balance parameters for the specified nutrients are within the interval 78...88% that is explained by the restrictions on minimal and maximal amount of calcium, fat, phosphorus and magnesium in mathematical models of the optimization of the ingredients content in rations.

The nutrients of ten essential amino acids have mainly an average and above average balance level that is primarily explained by the presence of the second generation of unconventional floury products with high content of balanced amino acids in daily diets. Only about 10% of diets under investigation possess low indicators of the balance of this group of nutrients.

The nutrients of proteins, fats and carbohydrates group have the balance level close to the average and only about 15% have low level.

The performed investigations resulted in the concept of creating a set of daily diets as elements of the diets for durable and effective therapeutic nutrition systems. The proposed concept presupposes the enrichment of daily diets with the deficient nutrients, increase of the parameters of their balance, and biological value of proteins through the application of purposefully designed dishes and products; the increase of a number of diets of the second generation with high balance indicators of nutrients; establishment of rigid criteria for the choice of daily diets for their optimization; choice of effective optimization algorithm of daily diets within the nutrition therapeutic systems.

Keywords: quantitative analysis, balance, nutrients, daily diets, nutritional systems.