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INTERCONNECTION BETWEEN QUALITY OF LIFE OF INFANTS AND VITAMIN D AND CALCIUM

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Introduction. The use of indicators of children's quality of life is actual in pediatrics. The purpose of this is personification of the treatment process, monitoring the course of diseases, assessment the effectiveness of the prevention and rehabilitation programs, determination the complex influence of chronic diseases on the child, prediction the adverse effects of the disease [Herasymova O.V. at al., 2018]. Treatment is considered optimal, which not only increases life expectancy, but also improves its quality. Many methods of treatment do not affect the prognosis but can significantly improve the quality of life of the child, reducing the manifestations of the disease and the frequency of complications.

In recent years, the quantity of research work on the topic role of vitamin D and calcium in the human body is growing. Vitamin D is involved in the regulation of serum calcium concentration [Bouillon R., Carmeliet G., 2018]. The physiological role of vitamin D is to regulate calcium-phosphorus metabolism and bone metabolism. An integral part of a healthy lifestyle of children is to maintain the daily needs of vitamin D and calcium [Abaturov A.E., Borisova T.P., Kryvusha O.L.,

2015; Chang S.W., Lee H.C., 2019; Abaturov A.E. et al., 2020].

Given the inherent physiological relationship between vitamin D and calcium, it is important to establish the possibility of the combined effect of vitamin D and calcium on the quality of life of infants.

The aim: to assess the quality of life of infants and to establish the possibility of medical correction of the main indicators of quality of life under the influence of the combined use of vitamin D and calcium.

Materials and methods. WHO has developed guidelines for developing quality of life questionnaires for use in work with children. In general, standardized are questionnaires that have been tested in clinical trials and clinical practice and have adequate psychometric properties (reliability, validity, sensitivity). Unfortunately, in Ukraine there is no standardized questionnaire for assessing the quality of life of infants. Taking into account the purpose of our work, we have designed our own questionnaire based on the main criteria of existing European and American children's questionnaires for assessing quality of life. We observed 30 clinically healthy infants who had received a suspension containing Ca carbonate and vitamin D_3 (cholecalciferol), 2.5 ml 3 times a day for 2 months. The medical drug is approved for use for children starting from 1 month of age.

Statistical analysis of the results was carried out using the program "STATISTICA 6.1" (№ AGAR909E415822FA). Depending on the test results, parametric and nonparametric methods of statistics were used. Differences between the signs were considered statistically significant at $p<0.05$.

Results and discussion. The analysis of the results of the study of subjective assessment of parents of quality of life of infants on the basis of the main parameters of the questionnaire revealed symptoms of functional gastrointestinal disorders, autonomic dysfunction syndrome, established features of age circadian rhythm, emotional status, biological resistance, ability to adapt, and neuropsychological development, assessed the state of the microclimate in the family.

Based on the correlation analysis of infants before treatment was defined the presence of a positive relationship between quality of life and the state of biological

resistance (r = + 0.51; p <0.05); natural feeding (r = + 0.56; p < 0.05); symptoms of functional gastrointestinal disorders (r = + 0.58; p < 0.05); parameters of emotional status (r = + 0.62; p < 0.05); signs of autonomic dysfunction syndrome (r = + 0.63; p < 0.05); neuropsychological development (r = + 0.65; p < 0.05); features of adaptability (r = + 0.66; p < 0.05).

After treatment with vitamin D and calcium the study of the correlation diagram of the interconnection between the quality of life and the established indicators of development of the examined infants demonstrated the disappearance of connection between the quality of life and symptoms of functional gastrointestinal disorders and symptoms of autonomic dysfunction. After treatment, there was set a decrease in the strength of the correlation between the quality of life of infants and the parameters of emotional status (r = + 0.36; p < 0.05); indicators of neuropsychological development (r = + 0.35; p < 0.05) and ability to adapt (r=+0.44; p < 0.05). The questionnaire developed by us contained a significant part of biopsychosocial issues, which allowed us to establish a number of patterns after analyzing the results of the questionnaire. It was found that the parents we interviewed had paid much more attention to the physical components of the child's development and did not focus on the numerous indicators of the child's psycho-emotional state, considering them secondary.

Analysis of the data shows that the physiological rate of physical development of the child is not always a guarantee of emotional comfort of the child and may be accompanied by manifestations of gastrointestinal disorders, markers of autonomic dysfunction, changes in circadian age rhythm. These changes in a child's behavior can be related to many factors. A retrospective analysis of our data on the quality of life of infants before and after correction with a combination of vitamin D_3 and calcium shows that we managed to influence some indicators of the quality of life of the child through nutritional correction. We believe that conducting a survey among parents to determine the quality of life of the child can be used as one of the clinical and anamnestic method of early diagnosis of deficient conditions, which will guarantee timely correction and avoid severe manifestations and complications of

micro- and macronutrient deficiency.

Conclusion:

1. In the analysis of the main parameters of the assessment questionnaire of the quality of life of infants was determined the interconnection between the quality of life of infants and the presence of symptoms of functional gastrointestinal disorders, autonomic dysfunction syndrome, features of age circadian rhythm, emotional status, biological resistance, abilities to adaptation, indicators of physical and neuropsychological development, the microclimate in the family.

2. The combined use of vitamin D and calcium by infants for two months brought to the disappearance of the interconnection between quality of life and symptoms of functional gastrointestinal disorders, as well as symptoms of autonomic dysfunction.

3. The combined use of vitamin D and calcium in the recommended dose of 2.5 ml 3 times a day for 2 months is characterized by a high safety profile, improves the quality of life of the child and can be recommended for infants.