KLOTHO PROTEIN IN YOUNG PERSONS WITH GASTROESOPHAGEAL REFLUX DISEASE

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Introduction. According to the last research have been shown the role of Klotho protein in aging process [1]. Klotho protein can affect and regulate some of the major cellular signaling pathways and additionally has demonstrated new insights into the function of Klotho protein in numerous human pathologies [2,3].

The aim: assessment the Klotho protein plasma levels in young patients with gastroesophageal reflux disease (GERD) differ on morphological status.

Materials and methods. This study included 45 patients with GERD. The examined contingent was presented by university students aged 18 to 25 years, median age was 21.2±2.4 years; 34 patients (75.6%) were women, 11 (24.4%) respectively were men. The anamnesis of GERD did not exceed 3 years. Control group is consisted by 20 healthy individuals matched with age of examined patients. Levels of Klotho protein were determined in blood serum of study persons with enzyme immunoassay using a commercial test system manufactured by Elabscience (ELISA, USA). This study was approved by the local ethics committee according to the recommendations of the ethical committees for biomedical research, Ukrainian legislation on health protection, the 2000 Helsinki Declaration and the directives of the European Partnership 86/609 on the participation of people in biomedical research. Statistical data processing was made by the Statistica Basic Academic 13 for Windows En local general-purpose software package.

Results. In patients with GERD Klotho protein levels was significantly higher 0.638 (0.4612; 0.763) ng/ml than in healthy persons - 0.4866 (0.3679; 0.6098) ng/ml, U = 279.5, p <0.01). That may be speculated as response to oxidant stress resulted from stressors in such pathology relevant to new data corresponding with direct protective cellular action by Klotho protein in the body. We evaluated Klotho protein plasma levels in patients with GERD relevant to morphological forms of the damage esophagus mucous assessed by a histomorphological study of the obtained biopsy material resulted on esophagogastroduodenoscopy («Fuginon» system) according to the recommendations of the Los Angeles classification. There is no difference between the Klotho protein plasma levels in patients with erosion form – 0.6397 (0.4198; 0.7792) ng/ml vs. the group of patients with non-erosive form – 0.6373 (0.5234; 0.7625) ng/ml was found.

Conclusion A significant increasing of Klotho protein plasma levels was revealed in the patients with gastroesophageal reflux disease as compare to healthy persons. We concluded that presence of erosion in esophagus mucous doesn’t accompanied by significant change of evaluated parameter.

References

1. Kim, Ji-Hee & Hwang, Kyu-Hee & Park, Kyu-Sang & Kong, In Deok & Cha, Seung-Kuy. (2015). Biological Role of Anti-aging Protein Klotho. Journal of lifestyle medicine. 5. 1-6. 10.15280/jlm.2015.5.1.1.
2. Kuro-o, M. The Klotho proteins in health and disease. Nat Rev Nephrol 15, 27–44 (2019). https://doi.org/10.1038/s41581-018-0078-3
3. Olejnik, A., Franczak, A., Krzywonos-Zawadzka, A., Kałużna-Oleksy, M., & Bil-Lula, I. (2018). The Biological Role of Klotho Protein in the Development of Cardiovascular Diseases. BioMed research international, 2018, 5171945. https://doi.org/10.1155/2018/5171945