

ABSTRACT

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Title of Diploma Thesis: The fluctuation of fatty acids levels in the tissues of suddenly deceased persons and comparison with values in pathological states

Fatty acids and their metabolites are significantly involved in many physiological and pathological processes. This thesis monitors the levels of selected fatty acids in human tissues and the effect of long-term disease on their stores. In addition to the general characteristics, the theoretical part focuses on the intake of polyunsaturated fatty acids and their importance in the human body. It also deals with the effects of eicosanoids and other fatty acid metabolites. Methods used in fatty acid bioanalysis are also described. In the experimental part, the proportion of fatty acids in seven tissue types was compared between two groups of donors. One of them included 8 relatively young, healthy, suddenly deceased individuals. The second group included 12 elderly polymorbid patients. The obtained tissue samples were adjusted using extraction and derivatization techniques. Gas chromatography with flame ionization detection was used for analysis. The measured data were processed by the area normalization method and statistically evaluated. The resulting values showed several obvious differences between the two groups of donors, especially in the case of unsaturated fatty acids. These differences correspond well with theoretical assumptions about the increased conversion of omega-6 unsaturated fatty acids during pathological conditions.

Key words

essential fatty acids, polyunsaturated fatty acids, omega-3 and omega-6 fatty acids