

Peculiarities of Brain Phospholipids Metabolism Disorders Under the Conditions of Diabetes Mellitus

Ghazaryan A.V., Karageuzyan K.G

Institute of Molecular Biology of the National Academy of Science,
Yerevan, Republic of Armenia

The results obtained testify negative influence of disease studied on phospholipid-phospholipid ratio in erythrocytes membranes, as well as on internal and external membranes of experimental animals brain and liver mitochondrial fraction. These changes are accompanied by output of high concentrations of lysophosphatidylcholines, and non-esterified fatty acids of polyenic range. The mentioned disturbances lead to the strongly expressed disorders of phylogenetically stable contents of individual phospholipids. Thanks to it at diabetes it is acknowledged the changes in the degree of liquidity of the studied membrane structures, and character of lipid surrounding of membrane-bound proteins, such as enzymes and receptory proteins.. We are inclined to some extent to explain disturbance of respiratory function of mitochondria in the tissues investigated by a hypoxic syndrome developed on this background, which leads to the formation of oxidative stress. It must be noted on our opinion that in mitochondrial membranes there take place the developing of the compensatory increase of the level of phosphatidylserines, cardiolipins, and monophosphoinositides, which are specific stimulators of the activity of enzymes, catalyzers of oxidative processes in them. Preliminary administration of sodium thiosulfate prevents the development of the disturbances described on the background of the further development of diabetes mellitus.