

The metabolic changes of heart muscle cells under chronic stress

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It is widely accepted that due to any kind of stress is launch response reactions in a cell of the living organism, namely: free radical oxidation, diminution of the energetic metabolism, etc. eventually ending up with forming a whole list of pathologies. During last year's special attention is drawn to study of the influence of these factors on the process to development various types disease of cardiovascular system.

We have studied Functionality of the antioxidant system in laboratory rat heart muscle cells and blood under psycho-emotional stress. It has been found that 40-day isolation and violation of diurnal cycle among the animals is accompanied by intensification of lipid per oxidation process and marked with a reduced activity of antioxidant system enzymes, such as catalase and superoxiddismutase activity. It has been suggested that psycho-emotional stress is accompanied by oxidative stress, which is reflected by the reduction in the intensity of energy metabolism in heart muscle cells. Such suggestion in strengthened by the fact that the activity of the enzymes involved in metabolic process in progress in mitochondria is reduced, as well as by reduction in the activity of enzymes participating in the process of glycolysis. Based on the results we suggest that psychological stress is one of the factors contributing to development of cardiological diseases.