

Lipid peroxidation system in men with diabetes mellitus type 1

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Background and aims: Oxidative stress induced by hyperglycemia and subsequent cellular damage is thought to be one of the major pathophysiological factors causing complications in diabetes. The objective of this study was to identify features of the lipid peroxidation-antioxidant defense system in men of reproductive age with diabetes mellitus type 1.

Method: 22 men with diabetes mellitus type 1 (the average age of 27.1 ± 7.38 years) and 30 healthy men of the same age (control group) (the average age of 28.0 ± 4.3 years) were involved in the study. The main and control groups were formed on the principle of “copy – pair”. Standard clinical examination methods were used: history taking, physical examination and consultation of specialists to identify complications of diabetes. Spectrophotometric and fluorometric methods were used.

Results: In men with diabetes mellitus type 1, there is increase in the level of active products reacting with thiobarbituric acid compared to the same indicator in the control group. The level of antioxidant defense in men with diabetes mellitus type 1 unlike the control was characterized by decrease in total antioxidant activity. However, stability of processes of superoxide dismutase activity and the glutathione system in comparison with control is observed against the backdrop of intensity increase of oxidative processes.

Conclusion: Activation of lipid peroxidation is observed in men with diabetes mellitus type 1.