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IL-1RA Stabilizes the Thiol-Disulfide System in the Brain Tissues of Rats with Experimental Diabetes

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Effect of piracetam, thiocetam and interleukin-1 receptor antagonist (IL-1ra) (7.5 mg/kg) on the values of thiol-disulfide system (TDS) and protein oxidative modification (POM) was studied based on the rat alloxan diabetes model. It is established that post-ischemic damage to brain tissue of the experimental animals was followed by multidirectional thiol-disulfide imbalance (increase in levels of oxidized forms of glutathione and thiols on the background of sharp decrease in their reduced forms), decreased activity of TDS enzymes (glutathione peroxidase and glutathione reductase) and increased level of POM markers – APhH and KhH. It is proved that course introduction of piracetam, thiocetam and IL-1ra was beneficial in stabilizing TDS and POM values, normalizing activity of glutathione peroxidase and glutathione reductase, with maximum activity noted for IL-1ra.

Keywords: Interleukin-1, IL-1ra, experimental diabetes mellitus, thiol-disulfide system