Experimental study of cerebroprotective properties of human recombinant interleukin 1 receptor antagonist (IL-1Ra)

II. IL-1Ra cerebroprotective properties in the models of cerebral ischemia and trauma in mice

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This article shows the results of the study of cerebroprotective activity of the human recombinant interleukin-1 receptor antagonist (IL-1Ra) in the models of gravitational cerebral ischemia (GCI) and craniocerebral trauma (CCT). It was established that IL-1Ra (in contrast to pyracetam) increased twice the survival of mice in the GCI model. IL-1Ra more efficiently than pyracetam ameliorated the muscle tone and the coordination of movements and restore memory of animals, disturbed under the influence of the GCI. Restored motor activity of animals in the acute period of experimental brain ischemia. IL-1Ra stimulated recovery in the functional state of central nervous system in CCT rehabilitation period better than pyracetam. The results suggest the prospects of the blockade of IL-1 receptors as a mechanism of cerebroprotection in ischemic and traumatic brain damage. (Cytokines and Inflammation. 2013. Vol. 12. № 3. P. 29–34.)

Key words: IL-1, IL-1Ra, experimental cerebral ischemia, closed craniocerebral trauma, cerebroprotection.