Review

Neuroprotective properties of statins

Karolina Stępień¹, Michał Tomaszewski¹, Stanisław J. Czuczwar¹,²

¹Department of Pathophysiology, Świębłowski Medical University of Lublin, Jacekowskiego 6, PL 20-090 Lublin, Poland
²Department of Physiological Medicine, Institute of Agricultural Medicine, Jacekowskiego 2, PL 20-960 Lublin, Poland

Correspondence: Stanisław J. Czuczwar, e-mail: czuczwas@yahoo.com

Abstract:
Treatment with statins (3-hydroxy-3-methylglutaryl-coenzyme A reductase inhibitors) reduces the risk of ischemic stroke among patients with increased risk of vascular disease. Recent experimental data point to neuroprotective properties of statins in acute cerebral ischemia. There is a proven link between bioavailability of nitric oxide and the activity of statins and ischemic stroke. Due to their ability to up-regulate nitric oxide synthase, statins have been considered in the therapy of a number of the central nervous system disorders, including cerebral ischemia, Alzheimer’s disease, Parkinson’s disease, tumors, and trauma. It has been claimed that they suppress inflammatory response and secondary injury after acute ischemia.

Key words:
statins, Alzheimer’s disease, stroke, multiple sclerosis, neuroprotection