

Aphanamixis Polystachya leave extract improves stroke outcome by enhancing anti oxidative defense mechanism

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Statement of the problem: Cerebral Ischemia is one of the leading causes of death and disability around the world having no effective treatment. The only FDA approved pharmacologic agent for the treatment of stroke is tissue Plasminogen Activator of which use is limited by a time frame of four hours after the incidence of stroke. Therefore, extensive research is going on in an aim to find out an optimum drug for the treatment of stroke. Natural plants act as a good source of ligands that can be used to many disease processes. Therefore, we investigated the effect of a plant Aphanamixis Polystachya extracts in a mouse model of stroke.

Methods: Swiss Albino mice received Aphanamixis Polystachya leave extract (alcoholic, 400 mg/kg body weight) for 3 weeks. Then the mice were subjected to distal middle cerebral artery occlusion (MCAO). Twenty four hours after MCAO, the brain sections were stained with TTC to evaluate the infarct volume. Neurological deficits were evaluated with corner and latency to move test. Brain and plasma samples were used to assay the level of MDA, SOD, NO, Catalase and, MPO.

Results: Pretreatment with Aphanamixis Polystachya extract resulted in significant reduction in infarct volume when compared to the vehicle treated group. In line with this, the functional outcome after stroke improved significantly when the mice were treated with Aphanamixis Polystachya as revealed by the corner and latency to move test. In our study, we noticed that stroke significantly increases the amount of lipid peroxidation, NO and MPO in the ischemic hemisphere which was reversed significantly by the treatment. We also confirmed that activity of SOD and Catalase increased significantly after treatment with Aphanamixis Polystachya when compared to the control.

Conclusion: Aphanamixis Polystachya is protective in cerebral ischemia. It improves stroke outcome most probably by decreasing the oxidative stress.

Biography

Dr. Md. Mahbubur Rahman is a teaching professional with progressive experience in research. He has demonstrated high level of ingenuity in student counseling and supervisory ability with achievements in research in the field of Neuropharmacology. In 2013, Dr. Rahman received his doctoral degree from the Heidelberg University, Germany. He is an expert in animal model of stroke (cerebral ischemia). He completed MS in Pharmaceutical Sciences and Bachelor of Pharmacy from Jahangirnagar University, Dhaka in 2008 and 2006 respectively. Currently, he is focusing his research on developing an animal model in an attempt to figure out the impact of food habits on neurodegenerative disorders.

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