conferenceseries.com

J Alzheimers Dis Parkinsonism 2018, Volume 8
DOI: 10.4172/2161-0460-C4-046

Neuritin attenuates early brain injury in rats after experimental subarachnoid hemorrhage

Dong Zhao
Shihezi University, China

Objectives: Early Brain Injury (EBI) is central to the pathological progress of Subarachnoid Hemorrhage (SAH). In this study, we determined if neuritin protects the brain against EBI in rats and discussed the role of apoptosis pathway mediated by Endoplasmic Reticulum (ER) stress in this neuroprotective route.

Methods: A total of 96 male Sprague Dawley rats were divided into control, sham, SAH and SAH+neuritin groups. The rat SAH model was induced by injection 0.3 mL of nonheparinized arterial blood into the prechiasmatic cistern. Mortality assay, neurological scores, brain water content measurement, Evans blue dye assay, TUNEL stain assay, and Western blot analysis were performed.

Results: Neuritin significantly improved the neurological scores, brain water content, Blood Brain Barrier (BBB), and apoptosis compared with the control and sham groups within 24 hours after SAH. TUNEL staining assay results demonstrated that apoptosis was ameliorated, MMP-9 expression was reduced, whereas GRP78, CHOP, caspase-12, and ASK1 levels were markedly preserved after neuritin application.

Conclusion: Our study demonstrated that neuritin plays a neuroprotective role on EBI after SAH by attenuating BBB disruption, brain edema and apoptosis.

zhanghang@stu.shzu.edu.cn