

BNG-1 is a herb complex used in traditional Chinese medicine to treat stroke. In this study, we attempted to identify the neuroprotective mechanism of BNG-1 by using neuroimaging and neurotrophin analyses of a stroke animal model. Rats were treated with either saline or BNG-1 for 7 d after 60-min middle cerebral artery occlusion by filament model. The temporal change of magnetic resonance (MR) imaging of brain was studied using a 7 Tesla MR imaging (MRI) system and the temporal expressions of neurotrophin-3 (NT-3), brain-derived neurotrophic factor (BDNF), and nerve growth factor (NGF) in brain were analyzed before operation and at 4 h, 2 d, and 7 d after operation. Compared with the saline group, the BNG-1 group exhibited a smaller infarction volume in the cerebral cortex in T2 image from as early as 4 h to 7 d, less edema in the cortex in diffusion weighted image from 2 to 7 d, earlier reduction of postischemic hyperperfusion in both the cortex and striatum in perfusion image at 4 h, and earlier normalization of the ischemic pattern in the striatum in susceptibility weighted image at 2 d. NT-3 and BDNF levels were higher in the BNG-1 group than the saline group at 7 d. We concluded that the protective effect of BNG-1 against cerebral ischemic injury might act through improving cerebral hemodynamics and recovering neurotrophin generation ¹⁾.

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Chi NF, Liu HL, Yang JT, Lin JR, Liao SL, Peng BH, Lee YT, Lee TH. Neuroprotective Mechanism of BNG-1 against Focal Cerebral Ischemia: A Neuroimaging and Neurotrophin Study. PLoS One. 2014 Dec 15;9(12):e114909. doi: 10.1371/journal.pone.0114909. eCollection 2014. PubMed PMID: 25506838; PubMed Central PMCID: PMC4266630.

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