PROTECTIVE EFFECTS OF MINOCYCLINE AGAINST COGNITIVE IMPAIRMENT IN A MOUSE MODEL OF CHRONIC CEREBRAL HYPOPERFUSION

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[Introduction] Vascular dementia (VaD) is one of the most common forms of cognitive disorder, responsible for more than 20% of cases of dementia. It has been recognized that cognitive impairment in VaD is highly associated with inflammation in both animal and human and application of anti-inflammatory drugs reduced the impairment, suggests that regulation of inflammatory response is potential target for cognitive decline in VaD. Here we focused on glial cells and evaluated the effects of minocycline on cognitive impairment in a mouse model of chronic cerebral hypoperfusion. [Results and discussion] Mice were subjected to bilateral common carotid artery stenosis (BCAS) using microcoil with 0.18 mm diameter. Minocycline was administered at a dose of 50 mg/kg per day after the surgery. Immunohistochemical analysis revealed that the migration of microglia/macrophage in cortical and hippocampal area was reduced in mice treated with minocycline. At 28 days after BCAS, the cognitive assessment by novel object recognition test was performed. In novel object recognition test, the cognitive impairment observed in vehicle-treated BCAS mice was reduced in minocycline-treated BCAS mice. These results indicates that minocycline is a potential drug for the prevention of vascular dementia.