Vepoloxamer

Vepoloxamer is an amphipathic polymer that has shown potent hemorrheologic, cytoprotective, and anti-inflammatory effects in both pre-clinical and clinical studies. This study was designed to investigate the therapeutic effects of vepoloxamer on sensorimotor and cognitive functional recovery in rats after traumatic brain injury (TBI) induced by controlled cortical impact. Young adult male Wistar rats were randomly divided into the following groups: 1) sham; 2) saline; or 3) vepoloxamer. Vepoloxamer (300 mg/kg) or saline was administered over 60 min via intravenous infusion into tail veins starting at 2 h post-injury. Sensorimotor function and spatial learning were assessed using a modified neurological severity score and foot fault test, and Morris water maze test, respectively. The animals were sacrificed 35 days after injury and their brains were processed for measurement of lesion volume and neuroinflammation. Compared with the saline treatment, vepoloxamer initiated 2 h post-injury significantly improved sensorimotor functional recovery (Days 1-35; p < 0.0001) and spatial learning (Days 32-35; p < 0.0001), reduced cortical lesion volume by 20%, and reduced activation of microglia/macrophages and astrogliosis in many brain regions including injured cortex, corpus callosum, and hippocampus, as well as normalized the bleeding time and reduced brain hemorrhage and microthrombosis formation. In summary, vepoloxamer treatment initiated 2 h postinjury provides neuroprotection and anti-inflammation in rats after TBI and improves functional outcome, indicating that vepoloxamer treatment may have potential value for treatment of TBI. Further investigation of the optimal dose and therapeutic window of vepoloxamer treatment for TBI and the mechanisms underlying beneficial effects are warranted ¹⁾.

1)

Zhang Y, Chopp M, Emanuele M, Zhang L, Zhang ZG, Lu M, Zhang T, Mahmood A, Xiong Y. Treatment of Traumatic Brain Injury with Vepoloxamer (Purified Poloxamer 188). J Neurotrauma. 2018 Jan 11. doi: 10.1089/neu.2017.5284. [Epub ahead of print] PubMed PMID: 29121826.

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