Vulnerability of Glia and Vessels of Rat Substantia Nigra in parkinson model

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Abstract:

Background: Astrocytes have been implicated as potentially exerting both neurotoxic and neuroprotective activities in Parkinson’s disease. (Maragakis and Rothstein, 2006). Typically, astrocytes respond to brain tissue changes (whether it be due to injury, infection, or disease) by undergoing astrogliosis, a process involving the upregulation of the intermediate filament protein glial fibrillary acidic protein (GFAP), cell body enlargement, and proliferation (Sofroniew, Vinters, 2010). Conclusion: Our results demonstrate that oxidative stress and mitochondrial dysfunction involve nigral cellular elements other than dopaminergic neurons. These include astrocytes, microglia, vascular endothelial cells and pericytes which promote damage to the neurons.

Keywords:

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