분류번호	Ⅲ-P-25

Exofocal Damage to the Substantia Nigra by Transient Middle Cerebral Artery Occlusion in Rats

Changbae Jin[1], Kazuhiko Yanai[2], Tsutomu Araki[3] and Takehiko Watanabe[2]

[1]Doping Control Center, Korea Institute of Science and Technology
[2]Dept. of Pharmacology I, Tohoku University School of Medicine
[3]Dept. of Neurology, Tohoku University School of Medicine

The present study examined chronic effects of transient focal cerebral ischemia on the substantia nigra, a remote exofocal area, using immunohistochemical and receptor autoradiographic techniques. Transient focal cerebral ischemia was induced by middle cerebral artery (MCA) occlusion for 60 or 90 min followed by reperfusion using silicone-coated 4-0 nylon monofilament in male Wistar rats. After 1- or 2-week reperfusion following transient MCA occlusion, there were partial losses of tyrosine hydroxylase-immunoreactive dopaminergic neurons, increases in glial fibrillary acidic protein-immunoreactive cells (gliosis), decreases in [^{3}H]YM-09151-2 binding for dopamine D_2 receptors, and marked atrophy in the ipsilateral substantia nigra. The precise mechanism(s) of exofocal damage to the substantia nigra is remained to be elucidated.