

Therapeutic effect of anti-nucleokine monoclonal antibody on ischemic brain infarction

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An ischemic brain infarction occupies a high rank of death cause in Japan, the medical and social burden by severe sequela is also extremely serious. In this symposium, we show that treatment with anti-nucleokine monoclonal antibody (mAb) remarkably ameliorated brain infarction induced by 2-hour occlusion of the middle cerebral artery in rats, even when the mAb was administered after the start of reperfusion. Whereas nucleokine is usually localized in nucleus, after stimulation it is secreted into extracellular space by unknown non-classical pathway, and exhibits an inflammatory cytokine-like activity. Treatment by mAb gave the reduction in infarct size, and the accompanying neurological deficits in locomotor function were significantly improved. In addition, some biochemical markers such as the permeability of blood- brain barrier, the expression of TNF- α , iNOS and MMP-9 were altered by mAb injection. These findings indicate the usefulness of nucleokine as a novel therapeutic target for ischemic stroke.