

<シンポジウム 6>脳血管障害治療の次のブレークスルーを目指して

Aim

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Stroke is the third leading cause of death and disability in Japan, and the development of therapeutics to mitigate stroke-related injury is imperative. Thus far, despite many promising prospects, attempts at translating neuroprotective agents that show success in animal models of stroke have resulted in very limited clinical success. Increasing evidence suggests that reperfusion is essential for improving neurological outcomes after stroke, and adjunct neuroprotective interventions must also be developed to ensure maximal brain tissue salvage. To further explore the therapeutic targets in acute stroke injury, we must reconsider the reasons for the numerous failures of previous attempts. The emerging concept of the neurovascular unit emphasizes that all the multiple cell types in the brain must be considered. In other words, not only neurons, but also glial and vascular elements in the brain likely need to be rescued. The disruption of the glio-vascular complex that normally forms the blood-brain barrier allows the entry of lymphocytes, the recruitment and

activation of which have been implicated in the progression of cerebral ischemia-reperfusion injury. The fact that many of the neuroprotective targets tested in preclinical models may have a negative effect on the recovery process has led us to the new concept of the penumbra model, in which both injury and repair processes are closely related. Thus, any acute therapy must be carefully targeted to block the desired target during its deleterious phase without interfering with the subsequent recovery of endogenous substrates. Now, basic stroke research requires a new breakthrough, and such an advancement could become a reality through inter-disciplinary collaboration focusing on neuro-inflammatory, neuro-degenerative, and neuro-immunological diseases. The chairpersons hope that this symposium will provide a good chance for clinical neurologists and basic neuroscientists from various research fields to discuss the next therapeutic strategy for treating cerebrovascular diseases.