

Special Issue on Impact of Stroke Comorbidities on Neural Plasticity and Neurological Recovery

CALL FOR PAPERS

More than 15 million people worldwide have a stroke each year, and stroke remains one of the main causes of death and adult disability. An increasingly aging population may result in a dramatic increase in the burden of stroke on healthcare systems and society. Despite promising initial experimental data, previous research has almost consistently failed to produce a clinically effective neuroprotective drug. Only the intravenous recombinant tissue plasminogen activator (tPA) has been approved for the treatment of acute ischemic stroke.

Cerebral plasticity and neurological recovery can be stimulated in the ischemic brain by exogenous pharmacological and cell-based treatments. Neurons, neuroblasts, and endothelial cells synergistically interact with each other as a regenerative triad, creating an environment in which neurological recovery takes place. Developmental genetic programs are reactivated. Brain neurons and capillary cells are enabled to sprout, and glial cells support plasticity processes.

Stroke comorbidities have a major impact on brain plasticity, stroke outcome, and treatment efficacy. Modifiable risk factors, some of which are more common in women, can result from certain lifestyle choices and can be modified with healthcare and medical interventions. Unmodifiable risk factors, such as aging, also serve as markers for high stroke risk. These issues need to be examined more intensively in future experimental studies. The confounding effects of age, risk factors, and comorbidities need to be carefully considered in clinical proof-of-concept trials. The failure to consider the impact of comorbidities on brain plasticity and neurological recovery after cerebral ischemia may contribute to the fact that neuroprotective drugs work in experimental models of stroke but do not work in clinical practice.

This Special Issue welcomes original research articles from clinicians and stroke researchers to address the link between comorbidities and neural plasticity in clinical trials and experimental studies in both aged animals and animals with comorbidities such as lifestyle, hypertension, diabetes, and hypercholesterolemia. The Special Issue also welcomes review articles that describe current state-of-the-art research on the impact of stroke comorbidities on neural plasticity, brain recovery, and rehabilitation in animal models and human studies.

Potential topics include but are not limited to the following:

- ▶ Aging as a risk factor for stroke, and its impact on neural plasticity and neurological recovery
- ▶ Life style and stroke, and its impact on neural plasticity and neurological recovery
- ▶ Metabolic inflammation and stroke, and its impact on neural plasticity and neurological recovery
- ▶ The impact of diabetes on neural plasticity and neurological recovery after stroke
- ▶ The impact of obesity on neural plasticity and neurological recovery after stroke
- ▶ Hypertension mechanisms causing stroke and their impact on neural plasticity and neurological recovery
- ▶ Brain plasticity and neurorehabilitation, and their impact on neural plasticity and neurological recovery after stroke

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/np/smib/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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