

Special Issue on **Neuroprotective Endogenous Lipid Mediators Targeting Brain Plasticity after Perinatal Asphyxia**

CALL FOR PAPERS

Perinatal asphyxia (PA) constitutes a prototype of obstetric complications associated with temporary interruption of oxygen availability. Its incidence is estimated at 1/1000 live births in developed countries and 5–10/1000 live births in developing countries. PA continues to be a determinant of mortality and constitutes one of the most frequent risk factors for several neurodevelopmental disorders (NDDs), affecting synaptogenesis and accurate establishment of neural circuits as a consequence of disturbed neuroplasticity. As there is not an established treatment for PA, neuroprotection becomes imperative. The understanding of PA pathophysiology contributes to the search for neuroprotective agents. The primary insult, characterized by a severe energetic crisis, lactate accumulation, and acidosis, is exacerbated during reoxygenation period, which is associated with free radicals accumulation, oxidative stress, cell damage, and inflammatory cascades. This latent phase, where secondary injury can occur, offers a therapeutic window and constitutes the basis for neuroprotection.

Reducing neuroinflammation in this latent phase represents a promising neuroprotective strategy, as proinflammatory molecules are known to disturb synaptic transmission and brain plasticity. In this sense, endogenous lipid mediators constitute possible neuroprotective agents. N-Acylethanolamides (NAEs) are naturally occurring amides synthesized on demand in response to brain injury and neuroinflammation. These endogenous lipid mediators are known to elicit anti-inflammatory and cytoprotective effects via Peroxisome Proliferator-Activated Receptor- α (PPAR- α) activation. In addition, several studies have reported their protective role when administered exogenously in several models of brain injury.

The aim of this special issue is to bring together researches addressing the role of endogenous lipid mediators as neuroprotective agents targeting neuroplasticity after PA.

Potential topics include but are not limited to the following:

- ▶ Biochemical and physiological aspects of endogenous lipid mediators
- ▶ Endogenous functions of lipid mediators following PA
- ▶ Pharmacological and genetic strategies targeting endogenous lipid mediators
- ▶ Beneficial effects of endogenous lipid mediators on synaptogenesis, neuroplasticity, and behavior
- ▶ Clinical-related aspects of endogenous lipid mediators-associated damage and recovery following PA

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