Special Issue

Opportunities and Challenges in the Diagnosis and Treatment of Disorders of Consciousness

Message from the Guest Editor

Disorder of consciousness (DOC) is generally caused by injury or dysfunction of the neural systems regulating arousal and awareness. The large number of DOC patients has brought immense challenges to healthcare systems. In clinical practice, a behavioral scale (Coma Recovery Scale) is widely used to assess the state of consciousness. However, it is complicated, time-consuming, labor-intensive and suffers from a high rate of misdiagnosis. Recently, innovative neuroimaging and electrophysiological techniques (e.g. fMRI, PET, fNIRs, EEG, ERP and TMS-EEG) have allowed for a more precise and individual assessment of residual brain functions with the promise to facilitate a better diagnosis, monitoring and treatment of DOC patients. Non-invasive brain stimulation techniques such as tDCS, TMS or tUS are painless, safe, inexpensive and adaptable and have, therefore, recently attracted major interest as possible treatment tools for DOC patients. This **Research Topic** aims at providing updates on the pathophysiological mechanisms of DOC as tested with advanced neuroimaging and electrophysiological techniques, and on the neuromodulation strategies for the treatment of DOC patients.

Guest Editor

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