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Detection of residual awareness functions in patients with disorder of consciousness

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The prediction of outcomes counts great clinical and social value for patients with disorder of consciousness (DOC). As their capacity of outputting are obstructed, it becomes a challenge in both clinical and fundamental fields to detect the signals which represents the residual of brain function. It is difficult to have a further classify of DOC with classical clinical scoring scales. The evaluating method with objective, stable, efficient and convenient properties is not acquired yet. And, the basic of consciousness-related neural circuit remains unknown. This research is based on event-related potential (ERP) of electroencephalogram (EEG) technique. Auditory stimulating protocols are applied to evoke classical EEG indicators, such as mismatch negativity (MMN) and P300, which will be recorded continuously for the first time. Differentiations in signature waveform and power spectrum are analyzed, and propose a EEG based prognosis tool. Furthermore, encephaloelectro activities will be localized with the assistance of functional magnetic resonance images (fMRI), in which the start points, key nucleus, and end points related to consciousness will be explored.

Speaker Biography

Long Xu is a neurosurgeon in the Department of Neurosurgery Trauma, Beijing Tiantan Hospital, Capital Medical University. He graduated from Peking Union Medical College and got the degree of M.D in 2005. As an international member, he finished the Swiss Davos Neurotrauma courses of AOCMF and got the membership certificate in 2010. he became a Chinese member of local faculties in AO Neurotrauma Courses in Beijing in 2013. In the past five years, he have mainly engaged in clinical and basic researches related to severe traumatic brain injury, disorder of consciousness, and brain cognitive function.

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