Editorial Note

Neurological disorders have great disability impact with long-term functional and psychosocial issues. Physical Medicine and Rehabilitation Specialist is need to establish comprehensive of Rehabilitation management to develop 'neuroplastic' processes in damage neuron.

Neuroplasticity can be defined as neuron ability to change, remodel and reorganize for purpose of better ability to adapt in a new situations. The plasticity proceed is the functional transformations in specific neuronal systems, as a result of specific or combination stimuli. Some studies have proven the effectivness of repeated postsynaptic neuron stimulation (action potential) preceded by presynaptic stimulation to build up interneuron connection. The result of this phenomenon is the biochemical changes, followed by anatomical adaptations that reinforce the connections between neighboring neurons. Thus, an effective stimulation have a results in stronger interneuronal connections.

Neurorehabilitation is a medical process to achieve recovery from damage nervous system and to minimize the functional alterations. The interdisciplinary and cross-sectorial approaching which requiring coordinated effort of diverse sectors, professions, patients and community to manage complex condition-related disability.

Some tehniques used in provide neuroplastic stimulation is demonstrated by the multiple successes of constraint induced movement therapy (CIMT). This method apply in stroke patients, by forces to activate the paresis limb by constraining the unaffected limb. Intensive, focused CIMT training can induce restore motor function. The evidence shows that the earlier and more intensive therapy, the better of the outcome.

Another tehnique is bilateral symmetrical arm movement training, that facilitation of the contralesional hemisphere. A study has proven the method by repetitive bilateral arm training accompany by rhythmic auditory cueing is effective to increase neuron function.

A prolonged period of peripheral nerve stimulation may increase the neuron excitability in the motor cortex, by stimulation of sensory nerve. Sensory stimulation can be applied in several method, i.e. passive movement, cutaneous stimulation by transcutaneous electrical nerve stimulation (TENS), and acupuncture. There are many opportunity to develop varied innovative methods to facilitate neuroplasticity.

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