INTRODUCTION TO THE SPECIAL ISSUE FOCUSED ON BRAIN STIMULATION

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During the last decade, there have been tremendous advances in the complex field of brain stimulation which includes several techniques with different rationale and mechanism of action but with the common feature to provide a selected electrical stimulation of specific brain areas. Initially developed for research purposes in the field of neurophysiology and neurology – and still used in these fields – brain stimulation techniques have been progressively extended to the psychiatric area as experimental and investigational interventions for treatment resistant major depression, obsessive compulsive disorders and Tourette's Syndrome. This was due to different reasons. First, despite significant acquisitions in the field of psychopharmacology which substantially improved the prognosis and quality of life of psychiatric patients, a consistent rate of them – particularly in the field of depressive disorders – still remain partially or non responders to standard pharmacological treatments. Second, neurobiological advances in the biopathogenesis of different psychiatric disorders have allowed to rationally use brain stimulation interventions as instruments to explore neurophysiological abnormalities present in mental conditions and to potentially normalize them in a therapeutic perspective. As a matter of fact, over the last years, converging evidence from randomized controlled trials allowed some brain stimulation techniques (e.g., TMS and VNS) to be approved for the treatment of resistant depression. Taken as a whole, therefore, brain stimulation interventions which include transcranial magnetic stimulation (TMS), transcranial direct current stimulation (tDCS), vagus nerve stimulation (VNS), deep brain stimulation (DBS) and other techniques, are considered by many researchers and clinicians a third way of treatment for specific psychiatric disorders along with psychopharmacology and psychotherapy. In this perspective, moreover, it is worthwhile to highlight that brain stimulation techniques could implement current psychiatris therapeutic milieu, integrating psychopharmacological and psychotherapic interventions and nor replacing them.

For these reasons, along with Editors of *Clinical Neuropsychiatry*, we decided to dedicate an entire issue of the Journal to the interesting and exciting field of brain stimulation in order to provide an updated and comprehensive overview of the most used interventions to all clinicians approaching the area. International experts in the respective fields of brain stimulation have been therefore invited to contribute to this issue with both critical reviews and original articles with the ultimate goal to offer a critical perspective of the field of brain stimulation.

More than 70 years after the introduction of electroconvulsive therapy (ECT) which in its evolution still represents an effective and recommended intervention for specific resistant mental conditions, the development and clinical use of brain stimulation techniques in psychiatry witnesses the continuous progression in the neurobiological field of mental disorders and points toward a further integration of Psychiatry within Neurosciences.

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