An Integrated Biopsychosocial Model and Kinesiograph(King) to Dissect the Etiology of Hypokinetic and Hyperkinetic Movement Disorders

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Mini Review

Moment disorders are conventionally classified as hypokinetic movement disorders refer to akinesia, bradykinesia, and rigidity [1] and hyperkinetic movement disorders which are characterized by excess of movement [2] often repetitive, involuntary movements that intrude into the normal flow of motor activity [1]. Movement disorders can be caused by diverse etiologies. They may occur as a result of basal ganglia, however, it can also result from injury to the cerebral cortex, cerebellum, brainstem, spinal cord, peripheral nerves, and other elements of the central and peripheral nervous system [3,4] laime that psychiatric symptoms are an increasingly recognised feature of movement disorders. Recent identification of causative genes and autoantibodies has allowed detailed analysis of aetiologically homogenous subgroups, thereby enabling determination of the spectrum of psychiatric symptoms in these disorders (2017). The approach to a patient with a movement disorder, like that to a patient with any other condition, begins with taking the history of the illness [3] and performing a physical examination (including neurological examination) and various diagnostic tests (e.g., blood tests, imaging tests)'(Swierzewski, Health Communities 2000, Para 1). Indeed, the characteristics of the abnormal movement provide a framework upon which to construct a differential diagnosis, guide ancillary testing, and consider therapeutic interventions [5]. However, the past decade has witnessed a highly dynamic and growing expansion of novel methods aimed at improving the assessment of [6] movement disorders with various types of techniques in clinical hospitals. Some of these conventional techniques are based on movement recognition. According Marcroft et al. [7] movement recognition aims to capture and analyze relevant limb movements through computerized approaches focusing on continuous, objective, and quantitative assessment. Some example of movement recognition methods include Camera-based solutions [8], Body-worn miniaturized movement sensors, Prechtl General Movements

Assessment [8]. However, these techniques may not be definitive as diagnosis tools in every instance. Therefore, this research study presents a novel method for the assessment of movement disorders in order to record continuous time-series data that represent the dynamics of limb movements [6] and presenting these data in a graphical format. The analyses of this graphical data are allowed for performance assessment of automated systems for the assessment of human movement disorders. This approach is called Kinesiograph (KinG) technique [9]. Kinesiograph (KinG) offers a comprehensive suite of diagnostic testing for different type of movement disorders. Multimodal approach including a combination of biopsychosocial model, e.g., biological, psychological and social factors, neurological and inconsistency of movement assessment, and Kinesiograph (KinG) are improved diagnostic prediction of Hypokinetic and hyperkinetic Movement Disorders.

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