Alternative Treatment for Parkinson's Disease

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Parkinson's disease (PD) is a neurodegenerative disorder caused by the degeneration of dopaminergic neuron in the midbrain. It causes typical motor symptoms, including bradykinesia, rigidity, tremor, and postural instability. Antiparkinsonian drugs represented by levodopa improve parkinsonian motor symptoms. In patients with long-term motor complications, deep-brain stimulation targeting the subthalamic nucleus or globus pallidus can diminish the wearing-off phenomenon and levodopa-induced dyskinesia. Although medical and surgical treatments have decreased the mortality rate and improved the function of activity of daily lives, there are various problems in PD patients that do not respond to the treatment modalities. Balance problems and freezing of gait are common devastating symptoms that are unresponsive to current treatment modalities. They cause unexpected falls and fractures and so increase morbidity and mortality in PD patients. There is increasing evidence of the effectiveness of physical therapy and exercise for gait and balance problems in PD patients. Aerobic exercise and strength training with balance training improves postural control and mobility. Recently, exercise modalities comprised of multidirected movements and complex sequences, including dance and Tai Chi, have resulted in fascinating improvements in balance and gait problems. In addition to physical therapy and exercise, repetitive transcranial magnetic stimulation (rTMS) has been tried as an adjacent treatment for improving motor symptoms in PD patients. The new brain target and protocol of rTMS has been introduced as a promising method for improving gait problems in PD patients. Alternative treatment modalities, including physical therapy and rTMS, have evident efficacy for overcoming the limitations of medical and surgical treatments. An established regimen and protocol to achieve the best effects in those treatments should be developed in the near future.