INTRODUCTION

Parkinsonism is a syndrome manifested by part or all of the symptoms of rest tremor, rigidity, bradykinesia, and postural instability. Parkinson’s disease (PD) is a specific chronic, progressive neurodegenerative disease that affects about 1 million people in the United States. The etiology of PD is still largely unknown, and it is also referred to as idiopathic or primary PD. Associated symptoms include smaller handwriting (micrographia), shuffling gait, speech disturbance, and dysphagia. Non-motor complications, including sleep disturbance, depression, autonomic dysfunctions, and cognitive impairment, can significantly impair quality of life. The progressive and disabling features are the major burden to the patients themselves, their families, and society as a whole.

Although the etiology is unknown, it is generally believed that a combination of genetic and environmental factors play a role in the pathogenesis of PD. The primary pathology involves the basal ganglia, especially the substantia nigra. Several subcortical nuclei compose the basal ganglia and play a role in the initiation and control of movements. Dopaminergic neuronal loss in the substantia nigra leads to a decrease in the level of dopamine and results in parkinsonian symptoms.