

<AAN-JSN Joint Symposium (2)—1—1> Treatments of Parkinson's Disease:  
from Medications and Functional Neurosurgeries to gene therapies and cell transplantations

## Medical Therapy for Parkinson's Disease —the Current State of the Art

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The current approach to the treatment of Parkinson's disease (PD) can be divided into the following considerations:

a) Disease modifying therapy—no treatment has as yet been determined to slow the rate of disease progression. Nonetheless, recent studies demonstrate that the early initiation of rasagiline 1 mg provides benefits that cannot be achieved with delayed introduction of the same treatment, consistent with a disease modifying effect. Further, clinical and basic research suggests that early treatment may preserve beneficial compensatory mechanisms and thereby delay clinical progression. New drugs and new targets are being actively explored.

b) Early symptomatic therapy—current treatment approaches now advocate considering initiation of therapy at the time of diagnosis to maximize long-term benefit. Levodopa remains the standard therapy for PD but chronic treatment is associated with motor complications. Many neurologists favor initiation of treatment in appropriate candidates with dopamine agonists to reduce the risk of motor complications. However, More recent studies show that treatment levodopa-induced motor complications are extremely dose-related and can be minimized by using low doses while

avoiding side effects associated with dopamine agonists. Eventually, most patients are best treated with low doses of polypharmacy.

c) Therapy of advanced disease—The addition of MAO-B inhibitors, COMT inhibitors and dopamine agonists have all been shown to reduce levodopa-induced off time. There are no approved medical therapies for dyskinesia, but amantadine has been show to have some benefit in double blind trials. Prevention is the best approach, and many new classes of molecules such as A2a antagonists and glutamate antagonists are currently being investigated.

d) Non-motor features—problems such as freezing, falling and dementia remain a major source of disability for many PD patients and no effective therapies are currently available.

Therapy for PD patients must be individualized. A neuroprotective therapy, a symptomatic therapy that avoids motor complications, and effective treatments for the non-motor features of the disease remain unmet needs, but advances continue to be made in these areas.

※The authors declare there is no conflict of interest relevant to this article.