

## **Advancements in Symptomatic and Neuroprotective Treatments Highlighted at First World Parkinson Congress**

February 23, 2006 - At today's World Parkinson Congress, the first international gathering of Parkinson's researchers, health professionals, patients, and caregivers, some of the world's leading neuroscientists from the United States, Canada, and Sweden presented on innovative therapies that show promise in controlling the symptoms of Parkinson's, restoring lost function, and even altering the progression of the disease.

From determining the potential of new compounds; to using deep brain stimulation (DBS) to treat depression; to evaluating dopamine cell transplantation, gene therapy, and encapsulated cell bio-delivery; researchers discussed the latest advancements in therapeutic, neurosurgical, and cellular and gene therapies for Parkinson's.

Parkinson's disease (PD) is the second most common neurodegenerative disease, affecting more than one million Americans. Although drugs and treatments can help patients manage many of the symptoms, including tremor, rigidity, and gait disturbance, there is no cure for PD.

Released at the Congress today, results from a pilot study looking at the potential of compounds to treat PD showed that minocycline, an antibiotic, and creatine, a substance produced in muscle, might warrant further evaluation. In the study of 200 patients in the earliest stages of the disease—who did not yet require medication—both creatine and minocycline appeared to modify the disease features in that patients did not appear to decline quite as rapidly as those given a placebo.

“Conducting vital pre-screening trials like this help us do a better job of placing our bets on compounds that will eventually help Parkinson's patients,” said Story Landis, Ph.D., Director of the National Institute of Neurological Disorders and Stroke. “This is like having two of the winning numbers on a lottery ticket.” The next step will be for the Institute to move forward with a Phase III clinical trial.

In addition to new therapeutics, researchers also discussed the potential of using deep brain stimulation (DBS), the main surgical procedure to treat Parkinson's, to reduce depression, one of the most debilitating symptoms of PD, which affects approximately 50 percent of patients.

Used to treat moderate and advanced stages of PD, DBS involves implanting a battery-operated brain stimulator, similar to a heart pacemaker, to deliver electrical stimulation to areas of the brain that control movement. It has been shown to alleviate the cardinal

symptoms of PD, reduce a patient's reliance on medication, and dramatically improve a patient's quality of life.

“DBS is the second major breakthrough in Parkinson's since L-dopa, the drug which has been the mainstay of Parkinson's treatment since the sixties,” said Andres Lozano, M.D., Ph.D., Canada Research Chair in Neuroscience at the University of Toronto and one of the first researchers to use DBS in North America. “While 30,000 Parkinson's patients have received DBS, only one to two percent of those who could benefit are actually getting the surgery. Our goal now is to bridge the gap in care and ensure that DBS is implemented in a widespread fashion.”

Scientists also discussed the potential of two other new approaches for treating Parkinson's—cellular and gene therapies. Since Parkinson's is caused by the degeneration of neurons that control movement, which results in a shortage of the brain signaling chemical dopamine, scientists are striving to grow new dopamine neurons from embryonic and adult stem cells.

Ole Isacson, M.D., a professor of neurology at Harvard Medical School, is working to isolate dopamine-producing A-9 cells, transplant them in animal models of Parkinson's, and determine whether they are able to repair the dysfunctional synaptic systems. “This technology is imperfect, but very promising,” Isacson said. “In the next two to three years, we hope to make progress in primates, and then to advance to clinical trials.”

Nerve growth factors, by virtue of their neuroprotective and growth-stimulating properties, have also attracted considerable interest as potential therapeutic agents in treating Parkinson's. One such factor, glial cell line-derived neurotrophic factor (GDNF), has shown great promise as a symptomatic and neuroprotective agent, and scientists such as Jeffrey Kordower, Ph.D., director of research at the Center for Brain Repair at Rush Presbyterian St. Luke's Medical Center, and Anders Bjorkland, M.D., Ph.D., former president of the European Neuroscience Association, are working to improve the methods by which nerve growth factors are delivered to the brain.

Scientists are now spearheading studies of GDNF delivery through genes, implanted capsules, and stem cell transplantation. “GDNF boosts function of residual dopamine neurons, and protects these cells from the degenerative process,” said Bjorkland. “We hope that short-term delivery of GDNF will be sufficient for sustained effects.”

*The World Parkinson Congress is a unique international event bringing the Parkinson's community together, and is organized by the World Parkinson's Congress, Inc. The Congress is supported by The Movement Disorder Society, The National Institutes of Health, the U.S. Army Medical Research Acquisition Activity, and professional and*

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