

# Disparities Seen in Care of Parkinson's Patients

*Better clinical care associated with neurologists was often unavailable to women or minorities.*

BY DOUG BRUNK

FROM THE ANNUAL MEETING OF THE AMERICAN ACADEMY OF NEUROLOGY

HONOLULU – Women and minorities with Parkinson's disease obtained care from a neurologist less often than did white men, in a large national analysis of Medicare data.

In addition, Parkinson's patients who received care from a neurologist had significant improvement in certain clinical outcomes as well as better overall survival compared with patients who received care from physicians in other specialties.

"Neurological disorders are common," Dr. Allison Wright Willis said at the meeting. "However, medical students and new physicians report feeling least secure in their ability to diagnose and manage neurologic disease. Unfortunately, primary care training programs may not be able to provide sufficient training in the management of complicated neurodegenerative diseases such as Parkinson's disease."

Dr. Willis of the department of neurology at Washington University in St. Louis and her associates set out to determine if treatment of Parkinson's patients by a neurologist is associated with improved selected health outcomes, including hip fracture, skilled nursing facility placement, and survival. They evaluated more than 138,000 incident cases of Parkinson's disease from Medicare beneficiaries with outpatient or carrier

file claims for Parkinson's disease in 2002.

For the period of 2002-2008, Dr. Willis and her colleagues used a Cox proportional hazards model to com-

**VITALS** **Major Finding:** Women and blacks with Parkinson's disease both had 23% lower odds of receiving care from a neurologist than did men and whites, after adjustment for covariates.

**Data Source:** An analysis of more than 138,000 incident cases of Parkinson's disease from Medicare beneficiaries with outpatient or carrier file claims for Parkinson's disease in 2002.

**Disclosures:** Dr. Willis said she had no relevant financial disclosures.

pare survival in patients with Parkinson's disease who were treated by either a neurologist or primary care physician. They included the variables of race, age, sex, comorbidity index, socioeconomic deprivation score, and physician specialty.

Dr. Willis reported that only 57% of newly diagnosed Parkinson's patients saw a neurologist at any time during the 48-month period in which neurologist encounter rates were calculated. Men and whites had the highest specialist treatment rates. Women and blacks both had 23% lower odds of receiving neurologist care than did men and whites, after adjustment for covariates.

Investigation of race and gender pairs

revealed that white women, black men, black women, Hispanic women, and Asian women all had significantly lower odds, compared with white men, of receiving care from a neurologist after adjustment for age, comorbidity, and economic disparity. A sensitivity analysis performed using 469,000 prevalent cases of Parkinson's disease yielded similar findings.

In a subgroup analysis of nearly 130,000 Parkinson's patients without incident stroke or transient ischemic attack, patients cared for by a neurologist had 21% lower odds of being placed in a skilled nursing home, compared with patients treated by primary care physicians. Treatment by a neurologist also was associated with 14% lower odds of hip fracture than was treatment by primary care physicians.

The odds of survival over a 6-year period was 23% greater when patients received care from a neurologist rather than a primary care physician, with the greatest increase in survival seen in white men, white women, and black men.

"Should these results be confirmed using individual-level data, measures to lessen these disparities are vital," Dr. Willis commented. "Furthermore, by demonstrating that neurologist treatment improves Parkinson's disease outcomes, our data highlight the need for health policy measures that support neurology practice and neurological education. However, the finding that fewer

women and nonwhites received neurologist care may have broader implications for health care disparity and medical education."

She went on to point out that in addition to what she described as "the clear social and policy implications of our research, these data are important to Parkinson's researchers. Parkinson's disease epidemiological studies and clinical trials typically rely on specialty centers or neurologist practices for case identification and recruitment. Our data suggest that this may produce a significant referral bias, [which is] critical when attempting to perform gene or environmental risk studies, and may result in a distortion of the Parkinson's disease risk literature or possibly confound clinical trial results. Additionally, the exclusive use of specialty center populations for recruitment may propagate a treatment bias resulting in fewer women and fewer minorities receiving state-of-the-art care."

Dr. Willis acknowledged certain limitations of the study, including the fact that the Medicare data set analyzed does not provide information on severity of Parkinson's disease or physician diagnostic accuracy.

"As with any epidemiological study, unknown medical, social, economic, or cultural factors may remain that have influenced the observed health care patterns," she noted. "Also, seeking neurologist care may be more likely in those who are health conscious and may correlate with other behaviors which would improve well-being, clinical course, or survival, such as medication use and exercise." ■

## Exercise Improved Some Cognitive Function in Parkinson's

BY DOUG BRUNK

FROM THE ANNUAL MEETING OF THE AMERICAN ACADEMY OF NEUROLOGY

HONOLULU – Patients with Parkinson's disease who participated in a 1-hour exercise program twice a week for 6 months experienced improvements in certain cognitive deficits, results from a single-center study showed.

"Exercise should be considered adjunct therapy in Parkinson's disease because it improves cognitive function in patients when not on medication," lead study

author Jeffrey R. Olech said in an interview during a poster session at the meeting.

Mr. Olech, a second-year student at the University of Illinois at Chicago, and his associates presented results from 48 Parkinson's disease patients who completed 6 months of a strengthening and balance exercise program under the guidance of a personal trainer. The researchers administered cognitive assessments when patients were "on" and "off" Parkinson's medication at baseline and at completion of the 6-month program.

Cognitive tests included the Stroop Color and Word Test, the Brief Test of Attention (BTA), and the Digit Span Forward and Backward Task. The researchers performed a two-way repeated measures analysis of variance on the cognitive measures with time (baseline vs. 6 months) and medication (on vs. off) as factors.

The mean age of patients was 59 years, and 58% were men. The mean baseline motor United Parkinson's Disease Rating Scale score was 34.6 among those off medication and 21.3 among those on medication.

At 6 months, exercise and medication use

significantly improved cognitive function based on results of the Stroop Color and Word Test. A significant interaction was observed between exercise and medication use based on results of the BTA test and the Digit Span Forward and Backward Task. Exercise improved performance on both of these tests when patients were off medication, but not while they were on medication.

"It was surprising to us that cognitive function was improved without medication over different domains of cognitive assessments," Mr. Olech said. "Previous research has demonstrated that Parkinson's patients on medication without exercise will maintain their level of cognitive performance over a 6-month period of time. Reasons improvement on cognitive outcomes off medication were observed could potentially be due to increased neural plasticity as a result of exercise, or an improvement in dopaminergic output during periods throughout the day that the drug's therapeutic benefit wanes."

He and his associates plan to collect data in this cohort of patients at 18 and 24 months of follow-up to determine if the associations persist.

Mr. Olech acknowledged certain limitations of the study, including its lack of an intervention control group and its single-center design. ■

**VITALS** **Major Finding:** Exercise and medication use significantly improved cognitive function in patients with Parkinson's disease based on results of the Stroop Color and Word Test. Exercise improved performance on the Brief Test of Attention and the Digit Span Forward and Backward Task when patients were off medication but not when they were on medication.

**Data Source:** An analysis of 48 Parkinson's disease patients who completed 6 months of a strengthening and balance exercise program under the guidance of a personal trainer.

**Disclosures:** The study was supported by an American Academy of Neurology Medical Student Summer Research Scholarship and by a grant from the National Institute of Neurological Disorders and Stroke.

**Exercise twice per week for 1 hour 'should be considered adjunct therapy in Parkinson's disease because it improves cognitive function in patients when not on medication.'**