The Parkinson’s Progression Markers Initiative: A Prospective Biomarkers Study

Todd Sherer, Sohini Chowdhury, Mark Fraser, Jamie Eberling, Bernard Ravina, Andrew Siderowf, Clemens Scherzer, Danna Jennings, Caroline Tanner, Karl Kieburtz, Brit Mollenhauer, John Seibyl, Christopher Coffey, Arthur Toga, Leslie Shaw, John G. Trojanowski, and Ken Marek

BACKGROUND AND RATIONALE

Current clinical outcomes for Parkinson’s disease (PD) trials to assess potential disease modifying therapies require large sample size and long study duration. Reliable and robust biomarkers to monitor PD progression would dramatically increase research into new PD drugs and therapeutics. During the past decade, a number of research groups have identified potential PD biomarkers, but as yet, no fully validated biomarker for PD is currently available. Given the recent advances in molecular genetics, neuroimaging technology and radiolabeled tracers that have provided novel tools that may be useful for PD studies, and the recognition that the lack of PD progression biomarkers has created a roadblock for further studies of disease-modifying therapies, the Parkinson’s Progression Markers Initiative (PPMI) was launched in 2007 by the Michael J. Fox Foundation for PD Research.

The PPMI study is designed to identify clinical, imaging, and biologic biomarkers of Parkinson’s disease progression and to standardize the assessment of these tools for future disease-dealing trials. The study was launched in June 2009.

OBJECTIVES

Deliverable: Identify a biomarker tool set that can be used to inform decisions at early stages of drug development and clinical testing

STUDY CORES

- Steering Committee: e4-PK Manel, A Siderowf, C Scherzer, D Jennings, K Kieburtz, P W Fowers, S Mollenhauer, C Tannert, B Ravina (core leaders, MJFF, ISAB)
- Clinical Coordination Core: University of Rochester, Karl Kieburtz
- Imaging Core: Institute for Neurodegenerative Disorders, John Seibyl
- Genetics Core: University of Iowa, Chris Coffey
- Bioinformatics Core: Laboratory of Neuroimaging, UCLA, Arthur Toga
- BioRepository: Corbis/Replip, Alison Amarch, Pasquale De Blasio, Michele Pisella
- Bioanalytical Core: University of Pennsylvania, John Trojanowski, Les Shaw
- Neurobiology Core: NIA/NIH, Andy Singleton

CLINICAL SITES

- Banner Research Institute (Phoenix, AZ)
- Baylor College of Medicine (Houston, TX)
- Boston University/Boston, MA
- Cleveland Clinic (Cleveland, OH)
- Emory University (Atlanta, GA)
- Imperial College of London (London, England)
- Innsbruck University (Innsbruck, Austria)
- Institute for Neuodegenerative Disorders (New Haven, CT)
- Johns Hopkins University (Baltimore, MD)
- Northwestern University (Chicago, IL)
- Oregon Health and Science University (Portland, OR)
- Paracelsus-Universitat Klink (Krems) (Austria)
- The Parkinson’s Institute (Sunnyvale, CA)
- University of Alabama at Birmingham (Birmingham, AL)
- University of California San Diego (San Diego, CA)
- University of Napolis (Naples, Italy)
- University of Pennsylvania (Philadelphia, PA)
- University of Rochester (Rochester, NY)
- University of South Florida (Tampa, FL)
- University of Tübingen (Tübingen, Germany)
- University of Washington (Seattle, WA)

STUDY DESIGN AND KEY FEATURES

- Study population: 400 de novo PD subjects (newly diagnosed and unmedicated)
- 200 age- and gender-matched healthy controls
- Subjects will be followed for a minimum of 3 years and a maximum of 5 years

Assessments/ Clinical data collection:
- Clinical assessments
- Neuroimaging/cognitive testing
- Bioanalytical tests
- Imaging:
  - DATscan at baseline and months 12, 24, and 48
  - MRI/T1 at baseline and months 12, 24, and 48

Biologic collection/ Verification studies:
- Biomarker tool set that can be used
- Consensus biomarkers,
- Institute for Neurodegenerative Disorders (New Haven, CT)
- Parkinson’s Banner Research Institute (Phoenix, AZ)
- First subject recruited

Study Features:
- Subject recruitment eligibility includes DAT imaging status
- Comprehensive longitudinal biomarker and imaging assessments
- Longitudinal CSF acquisition in all study subjects
- Standardization of all data acquisition
- Flexibility to incorporate novel biomarker candidates
- Public-Private partnership in pre-event space
- Data will be available to the PD research community through a web portal
- Biologic fluids will be available for biomarker verification studies by application

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STUDY GOVERNANCE

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[Diagram of study governance structure]

WEB SITE

[Website information]

STATUS AND RECRUITMENT UPDATE

[Recruitment status and update]

[Table of recruitment status]

[Image of recruitment status update]

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PPI is the first study of its kind to advance biomarker studies to a fully standardized platform. For more information, visit: www.PPMI-info.org

PPMI study data and biologic samples are available to investigators. For more information, visit: www.PPMI-info.org

Web-based systems support easy-to-use online application, review, authorization and data access processes.