

Platform trials in Parkinson's disease

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Traditional drug development in Parkinson's disease (PD) faces significant challenges because of its protracted timeline and high costs. In response, innovative master protocols are emerging, designed to address multiple research questions within a single overarching protocol. These trials may offer advantages such as increased efficiency, agility in adding new treatment arms, and potential cost savings. However, they also present organizational, methodological, funding, regulatory, and sponsorship challenges.

We review the potential of master protocols, focusing on platform trials, for disease modifying therapies in PD. These trials share a common control group and allow for the termination or addition of treatment arms during a trial with a non-predetermined end. We illustrate these aspects using the examples of the main PD platform trials currently in development worldwide (EJS-ACT-PD trial in the UK, NS-PARK Master Trial in France, P2P trial in the US and SLEIPNIR and HYDRA trial in Norway), with each one targeting distinct goals, populations, and outcomes. Such platform trials are currently coordinating their efforts in a comprehensive and complementary approach through the Global Alliance for Parkinson's Platforms (GAPP).

Overall, platform trials hold promise in expediting the evaluation of potential therapies for PD. However, it remains to be proven whether these theoretical benefits will translate into increased production of high-quality trial data. Success also depends on the willingness of pharmaceutical companies to engage in such trials and whether this approach will ultimately hasten the identification and licensing of effective disease-modifying drugs.

Biosketch

Olivier RASCOL, Prof, MD, PhD

Professor of Clinical Pharmacology, Neurologist

CURRENT AND PAST POSITIONS

Doctor Olivier Rascol is a neurologist specialized in Movement Disorders, Professor of Clinical Pharmacology at the Toulouse University Hospital since 1993. He chairs the Toulouse Clinical Investigation Centre (CIC1436) since 1993, the Toulouse Expert Center for Parkinson Disease (PD) and the national French Reference Center for Multiple System Atrophy (MSA) since 2012. Pr Rascol also chairs the national French NS-Park/F-CRIN Network on clinical research in PD and the national French Clinical Research Infrastructure Network F-CRIN (PIA1 grant of >50 M€) since 2013.

As a clinical neuro-pharmacologist, Pr Rascol's main fields of expertise involve movement disorders and neurodegenerative disorders (PD, MSA), focusing on clinical trials, drug development, natural history and biomarkers, to assess and predict disease progression and responses to treatments. He has contributed to the development of many marketed dopaminergic and non-dopaminergic drugs to treat motor and non-motor symptoms of PD, and is actively involved in the assessment of novel neuroprotective drugs, including Precision Medicine approaches in subjects carrying LRRK2 or GBA1 genetic variants.

Pr Rascol has run a large number of randomised clinical trials, as academic investigator-driven initiatives or in collaboration with international pharmaceutical companies. He has contributed to the development and validation of the main international outcomes to assess PD and MSA symptoms (co-author of the MDS-UPDRS and UMSARS scales) and to innovative neuroprotective trial designs. He created the French national NS-PARK network of 26 Expert Centres for PD and MSA, and has initiated the French platform trial "NS-PARK Master Trial" to assess neuroprotection in PD.

Pr Rascol has served as Secretary of the International Parkinson & Movement Disorders Society (IP-MDS) (2006–2009), chair of IP-MDS European Section (2013–2015) and of the Movement Disorder Scientific Panel of the European Academy of Neurology (2013–2015). He serves or has served as editor/associate-editor for Movement Disorders Journal, J Neural Transmission, Fundamental and Clinical Pharmacology, and at the editorial board of The Lancet Neurology, Neurology, and European Journal Neurology.

EDUCATION

MD in Neurology, 1985.

PhD in Neurosciences, 1992.

OTHER RELEVANT PROFESSIONAL ACTIVITIES AND ACCOMPLISHMENTS

Pr Rascol has published more than 650 publications (PubMed index) in international scientific journals (New England Journal of Medicine, Lancet, Lancet Neurology, Annals of Neurology, Neurology, Brain, JAMA Neurology, Movement Disorders, among others) with more than 76,000 citations, an h-index of 134 and an i10-index of 497 (Google Scholar). He has been invited worldwide to give more than 550 lectures in Europe, North America, South America and Asia.