E-Poster

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How can Big Data Help Define the Clinical and Functional Prognosis? The PREPARE Project and the Case for Parkinson's Disease

Topic: Health Conditions (Nervous System, Musculoskeletal System, Cardiopulmonary System)

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BACKGROUND

Complexity in medicine is essential when managing patients, particularly those with Parkinson's disease (PwPD). Numerous variables influence the clinical and functional progression of Parkinson's disease. Nowadays, with a large amount of clinical data available, artificial intelligence helps develop predictive models to define treatments personalized to individual functional profiles.

Our study aimed to define factors that can predict disability progression in a cohort of PwPD over a long period of time. Secondly, we aimed to identify factors that predict the clinical-functional evolution of motor and non-motor symptoms.

METHODS

A single-center historical cohort study was performed. Demographic, clinical, and functional measures were collected at the first evaluation (T0) and a distance of three years (±1) (T1) and six years (±1) (T2) from the baseline evaluation. The clinical data were collected using a standardized method during common clinical practice.

RESULTS

We analyzed a total of 972 records from 324 PwPD who had been consecutively evaluated at the Centre for Parkinson's Disease Diagnosis and Treatment of the Marche University Hospital. They were 151 women and 173 men with a mean age of 67.5 (±9.1) years in all disease stages. At the end of the three-year follow-up, 72% of the sample showed a worsened disability (i.e. an increase in the UPDRS-part II score). Still, only 54% showed a worsening greater than expected (i.e. more than one point/year). Neither gender, age nor motor symptom severity influenced such evolution. Greater severity of non-motor disorders (i.e. a higher baseline score in the total UPDRS-MDS -I, sub-item 1-Cognitive function, and Non-Motor Symptom Scale-NMSS) was the strongest independent factor of worse functional decline. Conversely, at six-year follow-up, older age at baseline was the only independent factor of greater functional decline.

CONCLUSION

The farther the prediction time, the more complex the interaction among the individual variables affecting prognosis in PwPD. The PREPARE project will hopefully improve our prognostic capacity, keeping together a very large number of explicative factors in a large sample.

Statement of Disclosures

All authors declare no competing financial or non-financial interests.

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