Predictors for levodopa-induced dyskinesia in Parkinson’s disease

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Long-term treatment of Parkinson’s disease (PD) with dopaminergic drugs may induce specific motor symptoms called ‘levodopa-induced dyskinesia’ (LID), characterized by disturbing involuntary, purposeless movements. It is unclear which factors play a role in the development and occurrence of LID.

To identify predictors for LID we studied the relationship between several clinical variables and the severity of LID.

In a retrospective analysis of 84 consecutive patients with PD, we performed non-parametric Spearman correlations between the severity of LID as assessed by 1) an interview (dyskinesia subscore of the Unified Parkinson’s Disease Rating Scale IV: UPDRS IV) and 2) a clinical investigation (Abnormal Involuntary Movement Scale: AIMS) and the following variables: duration of levodopa treatment, stage of disease (Hoehn & Yahr), age at PD onset, PD duration, global motor performance (UPDRS III) and mean actual levodopa dose.

Results revealed that the severity of LID (UPDRS IV, AIMS) was associated with a higher actual levodopa dose (Spearman, r = 0.55, p < 0.001; resp. r = 0.50, p < 0.001), a longer duration of PD (r = 0.66, p < 0.001; resp. r = 0.43, p < 0.001), a higher stage of disease (r = 0.55, p < 0.001; resp. r = 0.25, p < 0.05), and furthermore with younger age at PD onset (r = -0.47, p < 0.001; resp. r = -0.29, p = 0.01). Most interestingly, a higher AIMS was also associated with a lower severity of resting tremor (r = -0.36, p = 0.01).

We conclude that a higher stage of disease, a higher actual levodopa dose and younger age at PD onset are risk factors for the development of LID. Furthermore, the occurrence of resting tremor might predict a more benign disease course with less frequent development of LID.