

## DIFFERENTIAL CORRELATES OF MOOD AND COGNITION IN DYSTONIA AND PARKINSON DISEASE

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### **Body/Text:**

*Objective:* To determine clinical correlates associated with depressive and cognitive impairment severities in dystonia and Parkinson's disease (PD).

*Background:* Dystonia and PD are two different basal ganglia movement disorders, with differing physiologies and clinical features. In view of these differences, we sought to identify differences in correlates of the Hamilton Rating Scale for Depression (HRSD), Beck Depression Inventory (BDI), and Mayeux-modified Folstein Mini-Mental State Exam (mMMSE).

*Methods:* We evaluated 28 patients with dystonia and 28 patients with PD for current depressive disorder and cognitive impairment using the HRSD, BDI, and mMMSE. The relationships of HRSD, BDI, and mMMSE scores to disability, medication dosage, and demographic characteristics were investigated by means of linear regression analysis.

*Results:* In dystonia, more severe HRSD ratings correlated with younger age ( $r^2 = .422$ ,  $p = .042$ ) while lower mMMSE scores correlated with lower education ( $r^2 = .194$ ,  $p = .019$ ). In PD, more severe HRSD ratings correlated with lower education ( $r^2 = .480$ ,  $p = .026$ ) while more severe BDI scores correlated with higher dyskinesia scale scores ( $r^2 = .728$ ,  $p = .0017$ ) and lower mMMSE ratings ( $r^2 = .656$ ,  $p = .0045$ ); there were nonsignificant trends toward correlations of more severe BDI scores with lower education ( $r^2 = .356$ ,  $p = .069$ ), higher L-DOPA dose ( $r^2 = .320$ ,  $p = .088$ ), and lower UPDRS Parkinson severity scores ( $r^2 = .367$ ,  $p = .063$ ). Lower mMMSE ratings in PD correlated with greater age ( $r^2 = .335$ ,  $p = .0016$ ); there were nonsignificant trends toward higher Hoehn and Yahr stage ( $r^2 = .120$ ,  $p = .077$ ) and dyskinesia scores ( $r^2 = .109$ ,  $p = .093$ ).

*Discussion:* Younger age and less education suggest impaired ability to cope with movement disorders, leading to depression. Younger age in dystonia may also be related to more aggressive basal ganglia dysfunction, involving limbic and associative mood circuits. Greater dyskinesia in PD may reflect deranged striatal effects on basal ganglia - thalamocortical circuits involving cortical areas related to mood and cognition. Education more potently affected cognitive scores in the younger dystonia group whereas age more powerfully determined cognitive scores in the older PD subjects, likely related to age-associated cognitive impairment in PD.

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