Clustering executive functions yields MCI profiles that significantly predict conversion to AD dementia

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OBJECTIVE

Executive deficits have a significant impact on the ability to perform activities of daily living (ADL), and can lead to the transition from MCI to AD dementia. However, the extent to which executive impairments can yield identifiable cognitive profiles which can increase the risk of MCI to AD dementia progression has not been well investigated to date.

PARTICIPANTS AND METHODS

Cluster 1 (N=57) has the most heterogeneous mixture of classical MCI groups. Cluster 2 (N=28) includes mainly multidomain and non-amnestic MCI (memory is not impaired or memory is not the only cognitive domain impaired). Cluster 3 (N=10) includes only multidomain amnestic MCI.

RESULTS

Cluster 3 is significantly the most impaired group when evaluating executive functioning, global cognition and ADL (Table 2).

The dysexecutive classification accounted for 63% of the variance linked to MCI to AD conversion even when controlling for the severity of disease at baseline (Table 3).

CONCLUSIONS

Considering dysexecutive profiles of MCI patients may increase the accuracy of prediction models aimed at detecting risk of progressing to AD dementia. MCI patients with worse performance on executive tests seem to hold a higher risk of conversion and such a risk seems to be accounted for neither by memory impairments nor by the severity of the disease at baseline.