

Visuoconstructive deficits in Huntington's, Parkinson's and Alzheimer's disease: a qualitative study

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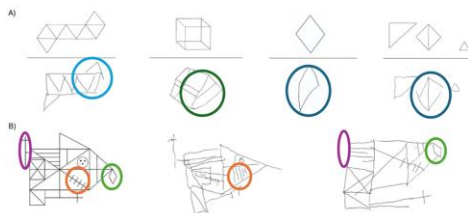
Objectives

We did a qualitative investigation of visuo-constructive abilities in HD, PD and AD. By employing both simple and complex tasks, we hypothesized that a qualitative analysis of performance would reveal a distinct and specific pattern of errors. For example, in Alzheimer's disease, simplifications are more common.

Are distortions a characteristic qualitative marker of HD, or are they also frequent in PD and can be used as a clinical biomarker of the disease?

Methods

Methods: Participants for this study were identified retrospectively. Inclusion criteria: minimum of 5 years of education; absence of significant extrapyramidal movements, assessed using specific scales; absence of disabling comorbidities that could affect cognitive performance beyond the baseline clinical condition



All participants underwent a neuropsychological battery, which included the Constructional Apraxia Test (CAT)(A) and the Rey-Osterrieth Complex Figure(ROCF) test (B).

Results

Distortion errors characterize the visuo-constructive performance of patients with PD and HD when compared to those with AD and HC. Furthermore, both PD and HD patients make omission errors on the ROCF, similar to AD patients, suggesting the possible presence of underlying frontal executive deficits.

In the quantitative evaluation of ROCF performance, HD and AD patients scored deficiently compared to PD and HC.

	HC (n=33)	AD (n=28)	HD (n=34)	PD (n=27)
Age	54.515	70.464	53.471	72.333
Education	12.121	10.179	9.794	9.889
MMSE	28.667	20.821	22.676	25.815
CAT	12.939	8.393	8.383	10.667
ROCF	132.242	17.075	15.897	21.296

Conclusions

- Distortions are characteristic qualitative errors on simple and complex design copy tests in both hypokinetic and hyperkinetic diseases (PD and HD).
- Both PD and HD patients tend to make omission errors on the ROCF, similarly to AD patients, suggesting the possible presence of frontal executive deficits underlying these errors.
- In the quantitative performance evaluation on the ROCF, HD and AD patients obtained a deficient score compared to PD and HC



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