

Saturday

A neurocognitive model for apathy in neurodegenerative dementias: preliminary findings in FTD, LBD, and AD

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Apathy refers to reduced motivation for goal-directed behaviour. Diagnosis and treatment of apathy in neurodegenerative dementias is difficult due to its heterogenous presentation across patient groups.

We propose a model for apathy, encompassing pre- and post-decisional states, in effort-based decision-making for rewards. Examining processes involved in goal-directed behaviour, beyond motivation, will help identify neurocognitive processes affected in apathetic individuals across patient groups.

Our model includes option generation, motivation, and volition as three core components of goal-directed behaviour implicated in apathy. Computer tasks were programmed to assess each of the components separately, in patients and healthy controls (HCs).

In the option generation task, participants gave verbal responses to open-ended or goal-directed scenarios with options for behaviour, in the presence or absence of response time constraints. Results revealed less options generated by patients with AD (pwAD) and FTD (pwFTD), compared to patients with LBD and HCs, across timed conditions and scenario types.

In a task designed to assess motivation for social, candy, and monetary rewards when cognitive effort is required (visual search task), several patterns emerged. Patients with AD sustained effort similarly across reward types and levels of task difficulty; this may indicate deficits in reward valuation or discrimination. In contrast, greater variability in effort sustainability across levels of difficulty was found for pwFTD, for monetary and social rewards. This pattern may indicate preserved reward sensitivity in pwFTD.

The ongoing work will serve to characterize mechanisms involved in apathy across neurodegenerative dementias and inform future targeted approaches to treating apathy in patients.

Conflicts of interest

N/A