

# The spectrum of cognitive impairment in neurocysticercosis: differences according to disease phase (Abstract)

Espectro do comprometimento cognitivo na neurocisticercose: diferenças de acordo com a fase da doença (Resumo)

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## ABSTRACT

**Introduction:** Cognitive decline related to neurocysticercosis (NC) remains poorly characterized and underdiagnosed. We have previously shown that a significant proportion of active NC patients (A-NC) present cognitive and functional impairment. Until now, there is no control study that have evaluated cognitive abnormalities in patients in the calcified phase of NC. **Objective:** To evaluate the cognitive performance of the largest subgroup of NC, the strict calcified patients (C-NC). Check the presence of dementia and cognitive impairment no dementia (CIND) and correlate the results with neuroimaging findings. Moreover, to investigate whether there is a spectrum of cognitive abnormalities in the disease according to disease phase. **Method and participants:** Forty treatment-naive patients with C-NC aged  $37.6 \pm 11.3$  years and fulfilling absolute criteria for definitive C-NC were submitted to a comprehensive cognitive and functional evaluation and were compared with 40 active NC patients (A-NC) and 40 healthy controls (HC) matched for age and education. All patients of C-NC group underwent brain MRI study in order to exclude other causes of epilepsy and signs of inflammatory activity. **Results:** Patients with C-NC presented  $9.4 \pm 3.1$  altered test scores out of the 30 from the cognitive battery when compared to HC. No C-NC patient had dementia and 10 patients (25%) presented CIND. The A-NC group had five patients (12.5%) with dementia and 11 patients (27.5%) with CIND. More than 50% of C-NC patients had low performance in verbal memory, attention and executive functions in comparison to CS. No significant correlation was found between cognitive performance and the number of lesions and seizure frequency. On follow-up, three out of five previously demented A-NC patients still presented cystic lesions with scolex on MRI and were still demented. One patient died and the remaining patient no longer fulfilled criteria for neither dementia nor CIND, presenting exclusively calcified lesions on neuroimaging. **Conclusion:** The results of our controlled study shows that NC, independently of its phase, leads to a spectrum of cognitive abnormalities, ranging from impairment in a single domain, to CIND and, occasionally, to dementia. These findings are more conspicuous during active vesicular phase and less prominent in calcified stages.

**Key words:** calcified neurocysticercosis, cognition, cognitive impairment, dementia.

# Parkinson's disease: the role of dopamine transporter neuroimaging in clinically unclear cases (Abstract)

Doença de Parkinson: neuroimagem do transportador de dopamina em casos de dúvida diagnóstica (Resumo)

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