

THE RELATIONSHIP BETWEEN THYROID STATUS AND COGNITIVE FUNCTION IN EUTHYROID PATIENTS WITH EARLY PARKINSON'S DISEASE

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Background and purpose: Alterations in thyroid hormone (TH) levels may be related to the pathogenesis of mild cognitive impairment (MCI) and dementia. Cognitive deficits are common in Parkinson's disease (PD) patients, even in the early stage. The aim of this study was to investigate whether variations within normal ranges of thyroid function are related to cognitive function in early PD without dementia.

Methods: Eighty-four euthyroid patients with early PD (Hoehn & Yahr stage 1-3) underwent evaluation of thyroid status, including measures of thyroid-stimulating hormone (TSH), total triiodothyronine (tT3) and free thyroxine (fT4), and comprehensive neuropsychological tests that covered the cognitive domains of attention, language, visuospatial function, memory, and executive functions. We categorized PD subjects as either cognitively normal (PD-NC) or MCI (PD-MCI).

Results: The 46 patients of the PD-MCI group did not differ in serum levels of TH compared to the 38 patients of the PD-NC group. Free T4 levels were inversely associated with Mini-Mental Status Examination (MMSE) score, and neuropsychological tests of attention, visuospatial and executive function. TSH and tT3 levels were not related to cognitive performances. After controlling for age, sex, education and symptom duration, multiple regression analyses indicated statistically significant associations between fT4 concentrations and MMSE score and neuropsychological tests of executive function.

Conclusions: Our study points to some new findings relating TH and cognitive function in euthyroid early PD patients. Further studies are needed to determine whether TH levels are associated with the development of dementia in PD patients.