

Hashimoto's Encephalopathy: A Pediatric Case Study with Pre- and Post-Treatment Neuropsychological Testing

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Hashimoto's encephalopathy (HE) is a devastating but potentially treatable encephalopathy, which presents with cognitive deterioration and seizures, and is often associated with elevation of anti-thyroid peroxidase antibodies or thyroid dysfunction. In the absence of a gold-standard diagnostic test, improvement in cognitive impairment is an important clinical marker of response to steroid treatment. The purpose of this case study was to demonstrate the utility of repeated neuropsychological testing in the management of a child with HE. The patient is a 14-year-old female who presented with new-onset temporal lobe seizures (recorded on video EEG), auditory hallucinations, mood and behavior changes, and cognitive impairment. Comprehensive medical investigations were normal (including normal neuroimaging), except for elevated anti-thyroid peroxidase antibodies. Premorbid functioning included strong academic achievement. Neuropsychological testing, including a computerized screening battery (CNS Vital Signs), paper-and-pencil tests, and questionnaires, was done before steroid treatment and at follow-up assessments over 6 months. Testing indicated that there was frank, global cognitive impairment at pretreatment (baseline). After 10 weeks of steroid treatment, there was improvement in some cognitive domains (i.e., visual memory, visual set-switching, and impulse control), as well as improvement in psychological and behavioral functioning. Gradual tapering of steroid medication began at this time. Assessment at 6 months indicated normal psychological, academic, and behavioural functioning, as well as average to above-average cognitive abilities (except for a measure of verbal inhibition and switching). This pediatric case study demonstrates cognitive impairment associated with HE, response to steroid treatment as measured through cognitive functioning, and a viable methodology for tracking cognition over time.

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