Insulin-Like Growth Factor-1 but Not Insulin Predicts Cognitive Decline in Huntington's Disease

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Résumé en anglais	BACKGROUND: Huntington's disease (HD) is one of several neurodegenerative disorders that have been associated with metabolic alterations. Changes in Insulin Growth Factor 1 (IGF-1) and/or insulin input to the brain may underlie or contribute to the progress of neurodegenerative processes. Here, we investigated the association over time between changes in plasma levels of IGF-1 and insulin and the cognitive decline in HD patients. METHODS: We conducted a multicentric cohort study in 156 patients with genetically documented HD aged from 22 to 80 years. Among them, 146 patients were assessed at least twice with a follow-up of 3.5 ± 1.8 years. We assessed their cognitive decline using the Unified Huntington's Disease Rating Scale, and their IGF-1 and insulin plasmatic levels, at baseline and once a year during the follow-up. Associations were evaluated using a mixed-effect linear model. RESULTS: In the cross-sectional analysis at baseline, higher levels of IGF-1 and insulin were associated with lower cognitive scores and thus with a higher degree of cognitive impairment. In the longitudinal analysis, the decrease of all cognitive scores, except the Stroop interference, was associated with the IGF-1 level over time but not of insulin. CONCLUSIONS: IGF-1 levels, unlike insulin, predict the decline of cognitive function in HD.

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