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Three months' withdrawal of growth hormone (GH) therapy from GH-deficient adults does not affect cognitive functioning

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Abstract

To determine the effect on cognitive functioning of discontinuation of GH treatment from GH-treated adults with GH deficiency (GHD), GH replacement was discontinued for 3 months from 12 of 21 adults, in a double-blind placebo-controlled trial, where 9 continued with GH. The following cognitive tests were given at baseline and end-point: Warrington Visual Recognition Memory, Benton Visual Retention, Rey Auditory Verbal Learning, Trail Making, Controlled Oral Word Association, Digit Span and Graded Naming. (Tests were split if no alternative available for end-point testing). Semi-structured interviews and questionnaires also given. Ethical Committee approval was obtained.

Results: The cognitive tests found no significant change in cognitive functioning (nor any trends in data) in either treatment group relative to baseline, and no significant between-group differences in scores at end-point when baseline scores had been partialled out. However, in interviews, 3 placebo-treated and 2 GH-treated patients reported perceived worsening of memory and concentration over the withdrawal period. Four of these patients also reported increased depression, confirmed in 3 cases by measures of psychological well-being.

Conclusions: Some studies have reported negative effects of GHD on cognitive functioning, with improvements after GH-replacement therapy. In the present study cognitive tests found no detrimental effects on cognitive functioning after discontinuation of GH-treatment in GH-deficient adults. Patient reports of perceived poorer cognitive functioning in relation to untreated GHD may be associated with increased depression.