Disease Risk and Immune Function

Immune function during GH treatment in GH-deficient adults: an 18-month randomized, placebo-controlled, double-blinded trial.

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OBJECTIVE: The aim of the present study was to investigate natural killer (NK) cell function and lymphocyte subsets in GH-deficient (GHD) adults, before and during long-term GH treatment. STUDY DESIGN: We investigated immune function in 19 adults with severe GHD, before and during 18 months of randomized treatment with GH or placebo. Measurement of lymphocyte subsets and NK cell activity was performed. Data obtained from 110 healthy adults served as reference values. RESULTS: NK cell activity, both unstimulated and stimulated by interferon-a or interleukin-2, was significantly impaired in GHD patients. Similarly, NK cell concentration and the proportion of NK cells (CD16+) were reduced in GHD patients compared to controls. Both total and proportional CD4 + cells were increased in patients compared with controls. IGF-I increased significantly during treatment, but the immune functions investigated were unaltered. CONCLUSIONS: GH deficiency was associated with changes in lymphocyte subsets and impaired unstimulated and stimulated natural killer cell activity, but these remained abnormal during 18 months of GH replacement therapy. Extra-pituitary GH gene expression in, e.g. lymphoid tissues may serve as an autocrine/paracrine factor in immunomodulation and explain the clinical normal immune function in adult GH-deficient patients.

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