

[Clin Endocrinol \(Oxf\)](#). 2004 Oct;61(4):437-40.

Growth hormone (GH)-induced reconstitution of CD8+ CD28+ T lymphocytes in a rare case of severe lymphopenia associated with Juvenile Haemochromatosis and Turner's syndrome.

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Abstract

This paper describes a rare case of Turner's syndrome associated with Juvenile Haemochromatosis and severe lymphopenia, followed-up for a period of 5 years. Because of the indication for treatment with growth hormone (GH), this case was observed as a model to analyse the effects of GH on growth, iron mobilization and lymphocyte reconstitution. For this purpose, a serial study of the T lymphocyte subpopulations CD4+, CD8+, CD8+ CD28+ and CD8+ CD28- was performed by immunophenotyping during the follow-up period. Besides the impact of both phlebotomy treatment and GH on the rapid growth and mobilization of 20.8 g of iron in 136 weeks, the most relevant observation was the finding of a significant expansion of CD8+ T lymphocytes expressing the costimulatory marker CD28 in the setting of the severe lymphopenia. These findings constitute new clinical evidence supporting the notion that the GH/IGF-1 system has an important role on the maintenance of T cell homeostasis in vivo, and that GH may be regarded as a putative therapeutic agent in T lymphocyte reconstitution.