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Suppression of peripheral blood natural killer cell activity by excess thyroid hormone.

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[–] Abstract

Natural killer (NK) cells were assessed in patients with hyperthyroxinemia due to Graves' disease or treatment with thyroxine (T4). Cytolytic activity was measured with 51Cr-labeled K562 tumor cells and NK enumeration was by flow cytometry using NKH-1 monoclonal antibody to identify the relevant surface marker. Activity was uniformly decreased in association with hyperthyroxinemia, regardless of the underlying pathology; however, there was no reduction in the number of NKH-1+ cells. NK activity was enhanced by addition of interleukin 2 (IL-2) in both control and patients' cells although the value in the latter instance failed to reach the basal control level. Production of IL-2 by lymphocytes from hyperthyroxinemic subjects, in response to phytohemagglutinin, was also reduced. Since NK cells are thought to act as a defense against viral infections and some malignancies and may play a role in autoregulation of the immune system, this effect of T4 may have significant biological implications.

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