

## **Patients with human immunodeficiency virus infection may have Graves' disease during antiviral therapy**

**The background of the study.** Human immunodeficiency virus type 1 (HIV-1) infection results in severely compromised immunologic function. Effective antiviral drug therapy is associated with the onset of several autoimmune diseases, including Graves' disease. This article describes a patient with HIV infection who had the onset of hyperthyroidism due to Graves' disease during antiviral drug therapy.

**Case report.** The patient was a 27-year-old woman with HIV infection. At the time of diagnosis in March 2001, her CD4 T-cell count was very low (15 cells/ $\mu$ l), her plasma HIV RNA level was high (35,000 copies/ml), and her serum free thyroxine (T<sub>4</sub>), thyrotropin (TSH), and TSH-receptor antibody concentrations were normal. She was treated with four antiviral drugs (stavudine, lamivudine, amprenavir, and ritonavir). Two months later her CD4 cell count was 95 cells/ $\mu$ l and her plasma HIV RNA level was <50 copies/ml. Her CD4 cell count increased progressively to normal (862 cells/ $\mu$ l) in June 2004, and her plasma HIV RNA level remained <50 copies/ml.

In late 2003, she had the onset of weight loss, palpitations, and tremor, and hyperthyroidism and diffuse goiter were confirmed in April 2004. Her serum free T<sub>4</sub> concentration was high and her serum TSH concentration was low. Her CD4 cell count was 618 cells/ $\mu$ l and her plasma HIV RNA level was <50 copies/ml. She was treated with propylthiouracil, and became euthyroid in six weeks. In November 2004, hyperthyroidism recurred, and treatment was changed to methimazole. When last studied (May 2005), while taking methimazole, she was clinically euthyroid and her serum free T<sub>4</sub> concentration was normal, but her serum TSH concentration was low and her serum TSH-receptor antibody concentration was high.

**The conclusions of the study.** Graves' disease and hyperthyroidism can occur as manifestations of the recovery of immune function that is associated with effective antiviral therapy in patients with HIV infection.