Correspondence

Acanthosis Nigricans: A New Manifestation of Insulin Resistance in Patients Receiving Treatment with Protease Inhibitors

Sir—Dubé [1] and Thiebaut et al. [2] have published interesting articles describing insulin resistance in patients with HIV infection who are receiving treatment with protease inhibitors. Recently, an increasing number of papers have been published which relate treatment with protease inhibitors to the appearance of insulin resistance, diabetes, hyperlipidemia, and anomalies in the distribution of corporeal fat [3]. We describe a patient with HIV infection who, after beginning treatment with protease inhibitors, developed insulin resistance, diabetes mellitus, and acanthosis nigricans. To our knowledge, such a case has not been described in the medical literature.

The patient was a 36-year-old man who had had HIV infection diagnosed 5 years before presentation. He had received treatment with ritonavir, zidovudine, and didanosine for 19 months; this regimen was then changed to with nelfinavir, saquinavir, stavudine and nevirapine, which he received for 17 months. Diabetes mellitus was diagnosed 9 months after the patient started treatment with ritonavir. At the time the patient presented to our clinic, he was asymptomatic. Findings of a physical examination were as follows: height, 187 cm; weight, 91 kg; body mass index, 26 kg/m²; loss of facial and gluteal fat, increase of abdominal fat; and a velvet-aspect hyperpigmentation in the axillas and elbows (figure 1). Other physical examination findings were normal. Complementary laboratory studies were performed, for which the values were as follows: blood glucose, 229 mg/dL; total cholesterol, 145 mg/dL; high-density lipoprotein cholesterol, 29 mg/dL; triglycerides, 174 mg/dL; CD4 count, 361 cells/μL; and virus load, 236,000 copies/mL. A test of pancreatic reserve with glucagon was performed; the basal C-peptide level was 5.5 ng/mL, and after stimulus, it was 12 ng/mL. At that time, the patient had a basal blood glucose level of 259 mg/dL and an insulin level of 41.10 mg/dL. The insulin sensitivity score, as determined by use of the Quantitative Insulin Sensitivity Check Index [4] was 0.25, which indicates high insulin resistance. The result of a cutaneous biopsy of the axilla was compatible with acanthosis nigricans. The patient began treatment with oral hypoglycemic drugs, which resulted in good control of blood glucose levels.

Acanthosis nigricans is a cutaneous marker of insulin resistance, although, in a few cases, it has also been associated
with malignant diseases, receipt of certain medications, and uncommon illnesses [5]. It is characterized by the appearance of papillomatosis with hyperpigmented and hyperkeratosis plaques that have a velvet texture and a grayish-brown coloration. These lesions are distributed symmetrically and affect flexural areas, including the neck, axilla, groin, ante-cubital and popliteal fossa, and the periumbilical region; occasionally, they can affect the mucous areas [6]. It is believed that hyperinsulinemia favors the bond between insulin and growth factor receptors similar to insulin receptors, which stimulate the proliferation of keratinocytes and fibroblasts in the dermis. The pathologic diagnosis includes hyperkeratosis and slight acanthosis with dermal papillomatosis.

Insulin resistance appears in ≈61% of patients with HIV infection who are receiving treatment with protease inhibitors [7], but acanthosis nigricans has only been described as associated with HIV infection in 1 patient with opportunistic infections [8]. It has not, to our knowledge, been described as associated with protease inhibitor treatments, although it is not infrequent in other situations of insulin resistance [9]. Acanthosis nigricans should be considered a new manifestation of insulin resistance syndrome in patients with HIV infection who are receiving treatment with protease inhibitors; the skin of such patients should be carefully examined.

References

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