Circulating soluble Fas ligand correlates with disease activity in Graves' hyperthyroidism

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摘要

Abstract

Apoptosis of thyrocytes may play an important role in the pathogenesis of autoimmune thyroiditis. Meanwhile, the Fas/Fas ligand (FasL) apoptosis pathway has received much attention in physiological homeostasis and immune regulation in various thyroiddiseases, including Graves' hyperthyroidism (GD). FasL is a type II membrane protein of the tumor necrosis factor family, and induces apoptosis when it binds to Fas. Soluble FasL (sFasL) may also exert cytotoxic activity against Fas-expressing cellsby producing trimerization of Fas molecule, but soluble Fas (sFas) is an apoptotic inhibitor. To determine the role of circulating sFas/sFasL in modulating disease activity of GD, we examined the circulating levels of sFas/sFasL in GD patients withvarious levels of anti-thyrotropin-stimulating hormone (TSH) receptor antibodies (TRAb). Serum samples were obtained from 22 consecutive untreated hyperthyroid GD patients with higher TRAb level (63.8% +/- 12.5%, group I) and 22 treated euthyroid GDpatients, who were in a state of disease remission, with lower TRAb level (7.9% +/-5.9%, group II). The levels of sFas were significantly higher in group I (1.56 +/- 0.26 ng/mL) than in group II (0.76 +/- 0.26 ng/mL, P <.01). The levels of sFasL werealso significantly higher in group I patients (0.153 +/- 0.018 ng/mL) than in group II patients (0.126 +/- 0.012 ng/mL, P <.01). A significant correlation was found between sFasL levels and TRAb activity in all GD patients (r = 0.69, P <.01). Because changes in sFasL levels and TRAb levels occur in parallel, increased serum sFasL in patients with GD may contribute to homeostasis in the thyroid. Serum sFasL may be considered to be a candidate marker for evaluating disease aggression or regression in GD.