Expression and Function of the Costimulatory Receptor SLAMF1 Is Altered in Lymphocytes From Patients With Autoimmune Thyroiditis

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Context: Signaling lymphocytic activation molecule family 1 (SLAMF1) is a costimulatory receptor expressed by most immune cells. Its role in autoimmune thyroid disease (AITD) is not well known.

Objective: To analyze the expression and function of the costimulatory receptor SLAMF1 in lymphocytes of patients with AITD.

Design: Cross-sectional, prospective, single-center study.

Setting: Department of Endocrinology, Hospital Universitario de la Princesa, Madrid.

Patients: Twenty-eight patients with AITD (17 with Graves disease and 11 with Hashimoto thyroiditis) and 21 controls.

Intervention: Multiparametric flow cytometry and immunofluorescence techniques to analyze the expression of SLAMF1 in peripheral blood (n = 28) and thyroid tissue (n = 5) mononuclear cells. Assay of inhibition of cellular proliferation to study the function of SLAMF1 in CD4+CD25+ T regulatory (Treg) cells.

Main Outcome Measure: Expression levels and the function of SLAMF1 in lymphocytes in AITD patients and controls.

Results: Expression of SLAMF1 was significantly increased in peripheral blood CD4+, T helper 17, and CD19+ B cells from AITD patients. Immunofluorescence microscopy detected the presence of SLAMF1+ lymphocytes in thyroid inflammatory cell infiltrate. Functional studies showed that SLAMF1 engagement in Treg cells increased their suppressive function in healthy controls but not in AITD patients.

Conclusions: The altered expression of SLAMF1, as well as its defective function observed in patients with AITD, may have a relevant role in the defective immune-regulatory function observed in this condition. (J Clin Endocrinol Metab 102: 672–680, 2017)