OBSERVATIONS

Treatment of LADA With Etanercept

Latent autoimmune diabetes of adults (LADA) is a subset of type 1 diabetes. The disease accounts for ~2–12% of all cases of diabetes (1). The pathogenesis of the disease involves autoimmune destruction of the β-cells of the pancreatic islet that produce insulin. There is a cell-mediated effect, via islet-reactive T cells (2), and a humoral immune response via autoantibodies (3). Studies have indicated that the GAD and islet cell antibodies are the most common in patients with LADA (4). Despite the priority of hyperglycemia, treating the underlying pathogenesis should be considered. Some of these efforts may include interfering with the cytokines that are implicated in the inflammatory process, which include tumor necrosis factor-α and interleukin-1β, among others. A tumor necrosis factor-α blocker, etanercept, has been studied in children with type 1 diabetes. This small pilot study suggested that etanercept could preserve β-cell function (5). We report the longest use of etanercept for preservation of β-cell function in type 1 diabetes.

This 48-year-old male patient presented to his primary care physician in April 2000 with hyperglycemia and the classical symptoms of polyuria and polydipsia. His initial A1C was 10.4%. In our clinic, the patient was noted to have a normal BMI of 23.5 kg/m^2. Physical exam did not reveal the presence of acanthosis nigricans. Given the lack of typical findings for type 2 diabetes and a positive GAD antibody, the patient was suspected of having a type 1 diabetes process.

The patient was initiated on and has remained on consistent low-dose basal insulin therapy for the last 11 years. The concept of using etanercept to treat the underlying autoimmune condition and preserve β-cell function was introduced to the patient. After an explanation of the risks and benefits, the patient agreed to a trial of etanercept. The patient was initiated on 25 mg etanercept subcutaneously every 3 days in August 2000, which he remains on today. We have followed normal diabetes parameters along with a measure of endogenous insulin secretion, specifically, C-peptide levels during a 2-h Sustacal challenge. His A1C levels have all remained <6.5%, and many have been <6%. The calculated area under the curve for C-peptide levels during the 2-h Sustacal challenges has remained near his baseline. While the patient has been on etanercept, there has not been any evidence of adverse effects.

Unfortunately, etanercept is not without side effects, as it contains a black box warning for serious infection risk and development of lymphoma and other malignancies in children and adolescents. Hence, the risk-to-benefit ratio may be unsuitable for children. However, this ratio may be more compelling in adults, especially in LADA, where the autoimmune destruction is less robust. The successful treatment with etanercept for >11 years, in this case, emphasizes the availability of newer therapies to alter the natural progression of LADA.

In conclusion, etanercept was shown to be a safe and effective therapy for this patient diagnosed with LADA. Evaluation of the therapy in a larger patient group is needed.

VINCE N. MONTES, MD
IRL B. HIRSCH, MD

From the Division of Metabolism, Endocrinology and Nutrition, University of Washington, Seattle, Washington.

Corresponding author: Irl B. Hirsch, ihirsch@u.washington.edu.

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