Phenotypic characteristics of GAD antibody-positive recently diagnosed patients with type 2 diabetes in North America and Europe.

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A number of patients with type 2 diabetes are GAD antibody positive. A Diabetes Outcome Progression Trial (ADOPT) is a randomized, double-blind clinical trial in recently diagnosed drug-naive patients with type 2 diabetes that allows for the evaluation of GAD positivity in the context of anthropometric and biochemical characteristics. Of the 4,134 subjects enrolled in ADOPT for whom GAD status was obtained, 174 (4.2%) were GAD positive, with the prevalence of GAD antibodies being similar in North America (4.7%) and Europe (3.7%). Although BMI and age were similar, GAD-positive patients had a lower fasting insulin level, compatible with them being more insulin sensitive. The lower fasting insulin concentration was accompanied by a decreased early insulin response to oral glucose. However, when this insulin response was corrected for the degree of insulin sensitivity, GAD-positive and -negative patients had similar beta-cell function. Consistent with the difference in insulin sensitivity, GAD-positive patients had higher HDL cholesterol and lower triglyceride levels. In the GAD-positive individuals, the prevalence of the metabolic syndrome as defined by NCEP ATP III (National Cholesterol Education Program Adult Treatment Panel III) was also lower (74.1 vs. 83.7%, P = 0.0009). These phenotypic differences may underlie a potential difference in the natural history of hyperglycemia and its clinical outcomes.