Abstract

Introduction: Correlation between increasing titers for GADA, IA-2A, and ZnT8A and graft loss due to recurrent autoimmunity has been reported, but not confirmed in other studies. Here, we assessed the prognostic value of DAA levels for predicting graft function in our cohort of islet transplant recipients.

Methods: Twelve patients with T1DM with hypoglycemic unawareness underwent islet allotransplantation (ITx). Eight of those patients were randomly assigned to receive Reparixin (CXCR1/2 inhibitor) and remaining 4 to placebo in addition to thymoglobulin, tacrolimus and mycophenolate mofetil for immunosuppression.
Titters of DAAs were monitored before IT and 0, 7, and 75 days and every 3 months post-operatively.

Results: IA-2A and ZnT8A levels were undetectable prior to and after IT in all 12 T1DM patients at any time points, median follow-up of 56 months (24-66) so had no value in islet monitoring. No difference was observed for trends of GADA titers between 4 patients with long-term insulin independence after IT and the remaining 8 who experienced a decline in islet graft function. Prior to and after IT, GADA levels did not vary between patients receiving Reparixin and placebo with most GADA negative (65% and 50%, respectively). Most patients converted from GADA seronegative to seropositive or increased antibody titers [5/8 (62.5%) and 4/4 (100%), respectively] and converted back to seronegative by 1 year post-transplant and maintained partial or complete islet function over 4 years.

Conclusion: We found no correlation between trends of anti-GAD65 autoantibody levels and IT outcome in our 12-patient cohort. Levels of DAAs targeting IA-2 and ZnT8 were not detectable in all patients prior to and after IT and did not correlate with IT outcome. Differences in immunosuppression and anti-inflammatory regimens and patient characteristics between studies may contribute to inconsistency among reported results.


Funding State of Illinois; Dompé

© 2019 by the American Diabetes Association.

http://www.diabetesjournals.org/content/license
Readers may use this article as long as the work is properly cited, the use is educational and not for profit, and the work is not altered. More information is available at http://www.diabetesjournals.org/content/license.

We recommend

Modulation of humoral islet autoimmunity by pancreas allotransplantation influences allograft outcome in patients with type 1 diabetes.
S Braghi et al., Diabetes, 2000

Rising Incidence of Type 1 Diabetes Is Associated With Altered Immunophenotype at Diagnosis
Anna E. Long et al., Diabetes, 2012

Humoral responses to islet antigen-2 and zinc transporter 8 are attenuated in patients carrying HLA-A*24 alleles at the onset of type 1 diabetes.
Anna E Long et al., Diabetes, 2013
Twenty-Year Progression Rate to Clinical Onset According to Autoantibody Profile, Age, and HLA-DQ Genotype in a Registry-Based Group of Children and Adults With a First-Degree Relative With Type 1 Diabetes
Frans K. Gorus et al., Diabetes Care, 2017

Lucien Marchand et al., Diabetes Care, 2017

Differentiating Slowly Developing Type 1 From True Type 2?
Desmond A. Schatz, MD, Medscape

Relationship of four vitamin D receptor gene polymorphisms with type 1 diabetes mellitus susceptibility in Kuwaiti children
Rasoul MA et al., MDLinx, 2019

Islet Transplantation in Type 1 Diabetes Mellitus Using Cultured
Tatiana Frouda et al., Medscape

Encephalitis Associated With Glutamic Acid Decarboxylase Autoantibodies in a Child: A Treatable Condition?
Christian M. Korff et al., JAMA Neurology, 2011

Autoantibodies to Lipoprotein-Related Protein 4 in Patients With Double-Seronegative Myasthenia Gravis
Bin Zhang et al., JAMA Neurology, 2012

Advertisement

Call for papers!
• Rapid Publication

BMJ Open Diabetes Research & Care

American Diabetes Association
BMJ