

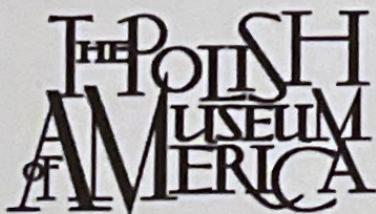


The Junior Board of the
Polish American Medical Society
Welcomes You to the



4th Polish American Youth Academic Summit: Pioneers in Medicine

October 7th, 2023 at 12pm
Polish Museum of America



Consulate General
of the Republic of Poland
in Chicago



POSTER 4

Title: Persistence of Long-term Insulin Independence After Islet Transplantation and Two Subsequent Pregnancies.

Presenter: Joseph Tomecki BS

Authors: Joseph Tomecki BS¹, William Lin MD¹, Sarah Gondek BS¹, Kamila Milejczyk BS¹, Surmai Shukla MBBS¹, Peter Ciesielski BS¹, Agnieszka Zawada MD PhD¹, Piotr Witkowski MD PhD¹

Author affiliations:¹ Department of Surgery, University of Chicago Medicine, Chicago, Illinois, USA

Prior presentations: 83rd Annual American Diabetes Association Scientific Sessions, Poster Presentation, San Diego, CA, USA, June 2023.

INTRODUCTION

Pregnancy increases metabolic demand for insulin, which may lead to the exhaustion of intraportally transplanted islets. We aim to describe proactive insulin therapy during pregnancy which we hypothesized would allow for tight blood glucose control, islet graft protection from exhaustion, and persistent long-term insulin independence postpartum. Patient was a Caucasian 29-year-old female with T1DM hypoglycemia unawareness and suffered from frequent severe hypoglycemic episodes despite advanced diabetic treatment. She developed long-term exogenous insulin independence with HbA1c <5.8 after a single intraportal islet transplant (9,999 IEQ/kg).

METHODS AND PROCEDURES

Anti-thymocyte globulin, along with Reparixin, Dompe, Italy (CXCR1/2 inhibitor), was used for immunosuppression induction and tacrolimus (through level 7-9) with mycophenolate as maintenance immunosuppression. Before conception, mycophenolate was replaced with Imuran 125mg to eliminate its teratogenic effect. The patient became pregnant 5 years and 7.5 years after her islet transplantations. To reassure tight and optimal blood glucose control during both pregnancies, the patient supplemented exogenous insulin as 5-10u of long-acting insulin (detemir) in the first trimester, 15-45u in the second, and 35-70u in the third trimester of the first pregnancy. An insulin pump was utilized during the second pregnancy in amounts of up to 35 units daily in 3rd trimester.

RESULTS

Shortly after delivery, the patient stopped insulin injections and resumed insulin independence with optimal blood glucose and HbA1c below 5.7. Islet graft function prior to and after pregnancy remained stable based on BETA-2: 22 and 26, respectively, and based on the Mixed Meal Tolerance Test- peak blood glucose 130mg/ml and 124mg/ml, respectively, with comparable c-peptide areas under the curve. Both babies were born prematurely after 34 weeks of each pregnancy with emergent c-sections due to preeclampsia. After the first pregnancy, the baby boy died due to necrotizing enterocolitis soon after delivery. The second baby girl has been developing appropriately. She is currently 10 months old.

CONCLUSIONS

Insulin supplementation during the pregnancy in insulin-independent patients after islet intraportal transplantation was safe and effective in maintaining tight optimal blood glucose control and islet graft function.