

Principal Investigator

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Study Title:

ADRENERGIC CONTRIBUTION TO GLUCOSE COUNTERREGULATION IN ISLET TRANSPLANTATION

Purpose:

In this protocol we aim to study how innervation affects transplanted islet cell responses to hypoglycemia. The purpose of this study is to test how a bodies' nerves and hormones affect these islet cells and how they respond to low blood sugar (glucose). This study will provide important information about how the islets protect type 1 diabetics from low blood glucose.

Brief Description

The primary objective will be addressed by a double blind mechanistic non-interventional study in Type 1 diabetic recipients of intrahepatic islet transplantation (Group 1). This group will undergo 4 visits; a screening visit and 3 hyperinsulinemic clamps each with a randomly assigned condition: phentolamine (α blockade), propranolol (β blockade) or placebo.

The secondary objective will be to compare islet cell hormonal responses to insulin-induced hypoglycemia between participants in Group 1 and Type 1 diabetic recipients of extrahepatic islet transplantation (Group 2), and Pancreatectomized recipients of intrahepatic islet auto-transplantation (Group 3).

Groups 2 & 3 will undergo 2 visits; a screening visit and a single hyperinsulinemic clamp.

We hope to enroll a maximum of 45 islet cell recipients. 12-15 participants will fall into each of the above three groups.

A final component to this study will be to provide the participants with a Medtronic iPro®2 Professional Continuous Glucose Monitor which they will wear for 7 days.

Eligibility

Our participants will all have received an islet cell transplant here at UPenn or at another national center. The islet cell graft must be a functioning graft.

Compensation (if applicable)

Patients will be compensated for their time at the completion of the study. Payment will be made via check from the University of Pennsylvania. Each clamp visit will compensated at \$150.00 and the Screening visit at \$50.00. Group 1 will therefore receive \$500.00 and Groups 2 & 3 will receive \$350.00.

Travel reimbursement

Should your participation in this study require long-distance travel involving air or rail; economy or coach-fare tickets will be reimbursed via a check from the University of Pennsylvania.

If your travel is a short-distance; you will receive \$11.00 in cash at each visit to cover your parking or your regional rail ticket expense.

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