



 Download

 Cite

 Share

 Favorites

 Permissions

IPITA 2021 VIRTUAL CONGRESS ABSTRACTS

307.5: Modified Approach Allowed for Improved Islet Allograft Transplantation Into Pre-vascularized Sernova Cell Pouch™ Device - Preliminary Results of the Phase I/II Clinical Trial at University of Chicago

Bachul, Piotr¹; Generette, Gabriela S.¹; Perez-Gutierrez, Angelica¹; Borek, Peter¹; Wang, Ling-Jia¹; Golab, Karolina¹; Basto, Lindsay¹; Perea, Laurencia¹; Tibudan, Martin¹; Juengel, Braden¹; Kumar, Jayant¹; Thomas, Celeste¹; Philipson, Louis¹; Fung, John¹; Witkowski, Piotr¹

Author Information 

Transplantation: December 2021 - Volume 105 - Issue 12S1 - p S25
doi: 10.1097/01.tp.0000804420.88438.67

 Metrics

Introduction: After the first-in-human pilot study which showed safety of the pre-vascularized Sernova Cell Pouch (SCP) in the subcutaneous space, we modified islet transplantation (ITx) conditions for improved engraftment in the SCP.

Methods: Two sets of the SCP were implanted in the abdominal anterior rectus sheath in seven patients with longstanding type 1 diabetes mellitus, problematic hypoglycemia and no stimulated C-peptide. Only highly purified islets were used for ITx and islets were suspended in the patient's own serum. Immunosuppression was initiated 1 month later followed by a marginal dose ITx after another month. Small sentinel SCPs were explanted for histopathological evaluation 3 months after each ITx.

Results: Seven patients were submitted to 21 study related surgeries with a wound infection in 2 patients after SCP implantation with only one patient requiring device excision. The first subject presented with persistent stimulated serum C-peptide at 6 months after 1st and 2nd ITx into SCP. After 2nd ITx, glucose control improved substantially including reaching optimal target values for CGM with only 5% of Time Below Range (TBR). Subsequent intraportal ITx allowed for insulin independence currently maintained for over 15 months. The second patient at 3 months after 2nd ITx had positive stimulated serum C-peptide (0.48 ng/mL) with reduction of HbA1c from 10.6% to 7.6%, decreased insulin requirement from 49 to 28 u/day, improved CGM with TBR <4%, and reduction in Time Above Range (TAR) from 76% to 48%. To date, stimulated C-peptide has been detected for over 9 months. Three additional patients recently received ITx and await evaluation.

Conclusion: Persistent islet graft function with sustained blood levels of C-peptide, reduction of HbA1c, improved CGM parameters, reduction of SHEs, and decreased total daily insulin requirement was achieved in the first 2 patients after ITx into SCPs implanted into abdominal wall. Significantly improved islet engraftment and clinical outcomes occurred using a modified approach for ITx into SCP.

Copyright © 2021 Wolters Kluwer Health, Inc. All rights reserved.

Article Level Metrics

There is no Altmetric data at this time...

Advertisement

Related Links

- Articles in PubMed by Piotr Bachul
- This article in PubMed
- Articles in Google Scholar by Piotr Bachul
- Other articles in this journal by Piotr Bachul

Readers Of this Article Also Read

- DISCORDANT XENOGENEIC NEONATAL THYMIC TRANSPLANTATION CAN INDUCE DONOR-SPECIFIC TOLERANCE¹
- ADDITIONAL MONOCLONAL ANTIBODY (mAb) INJECTIONS CAN REPLACE THYMIC IRRADIATION TO ALLOW INDUCTION OF MIXED CHIMERISM AND TOLERANCE IN MICE RECEIVING BONE MARROW TRANSPLANTATION AFTER CONDITIONING WITH ANTI-T CELL mAbs AND 3-GY WHOLE BODY IRRADIATION¹
- THE IMPORTANCE OF NONIMMUNE FACTORS IN RECONSTITUTION BY DISCORDANT XENOGENEIC HEMATOPOIETIC CELLS^{1,2}
- SPECIFIC PROLONGATION OF SKIN GRAFT SURVIVAL FOLLOWING RETROVIRAL TRANSDUCTION OF BONE MARROW WITH AN ALLOGENEIC MAJOR HISTOCOMPATIBILITY COMPLEX GENE
- HUMORAL TOLERANCE IN XENOGENEIC BMT RECIPIENTS CONDITIONED BY A NONMYELOABLATIVE REGIMEN

Related Articles

[Back to Top](#)



Never Miss an Issue

Get new journal Tables of Contents sent right to your email inbox

[Get New Issue Alerts](#)


Browse Journal Content

- Most Popular
- About the Journal
- Current Issue
- Subscribe
- For Authors
- Past Issues
- Register on the website
- Get eTOC Alerts

For Journal Authors

- Submit an article
- How to publish with us

Customer Service

-  Live Chat
- customerservice@lww.com
- 800-638-3030 (within USA)
- 301-223-2300 (international)
- [Activate Journal Subscription](#)
- [Browse the help center](#)

