

Subcutaneous Pancreatic Islet Transplantation Using Fibrin Glue as a Carrier.

Authors: Andrades P., Asiedu C., Rodriguez C., Goodwin K.J., McCarn J., Thomas J.M.

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Abstract:

Background: Pancreatic islet grafts are difficult to manipulate and implant in the recipient site mainly because they are formed by a group of cells suspended in a solution. This physical property determines various characteristics that are unique for pancreatic islet transplantation. The purpose of this study was to evaluate the role of fibrin glue as a delivery method for islet transplantation.

Methods: C3H mouse islets were syngeneically transplanted into streptozotocin-diabetic recipients using fibrin glue in a subcutaneous pocket (Group 1) and using liquid islets injected under the kidney capsule (Group 2). Blood glucose levels were measured during 4 weeks of follow-up and compared against normal (Group 3) and diabetic levels (Group 4). **Results:** No statistical differences were observed between the normal, kidney capsule, and fibrin glue groups. Only the diabetic group had a statistical difference when compared with the normal control group ($P < .01$). At the beginning, levels in Group 1 (fibrin glue) were higher than in Group 2 (kidney capsule), but turned into similar values after time and no statistical differences were observed between them during follow-up. **Conclusions:** Islet/fibrin glue grafts placed in a subcutaneous pocket obtained the same results as liquid grafts placed under the kidney capsule, proving to be an adequate delivery method for islet transplantation and solving some of the engraftment problems we find with liquid grafts. © 2006 Elsevier Inc. All rights reserved.