

Islet transplantation boosts long-term survival in kidney transplant recipients with type 1 diabetes

September 16 2023



Credit: Unsplash/CC0 Public Domain

Islet transplantation significantly reduces the risk of transplantation failure and enhances life expectancy in individuals with type 1 diabetes

who undergo kidney transplantation, a new study has revealed.

This breakthrough research, presented at the [European Society for Organ Transplantation](#) (ESOT) Congress 2023, compared the long-term outcomes of patients with type 1 diabetes who underwent [kidney transplantation](#) and received an [islet](#) transplantation, with patients who underwent [kidney](#) transplantation and then managed their diabetes with [insulin](#) alone.

The study found that islet transplantation exhibited a substantial advantage over insulin treatment, significantly reducing the risk of transplant failure and mortality.

The researchers investigated every patient with type 1 diabetes in France who received a kidney transplant between 2000 and 2017. Among 2,393 patients, 327 were eligible for islet transplantation, including 47 that were actually transplanted with islets.

To ensure comparability between the two groups, the researchers matched patients based on factors, such as the year of transplantation, age of the recipient, kidney function, or HBA1c.

After comparing the two groups, the researchers found that islet transplantation had a significant benefit over insulin alone in terms of reducing the risk of transplantation failure and death.

The results showed a 0.47 hazard ratio for graft failure in the islet transplantation group, indicating a 53% lower risk of failure compared with the insulin-only group. As well as this, patients who received an islet transplantation had a higher estimated life expectancy for a 10-year follow-up (9.61 years compared with 8.85 years for those on insulin alone).

Notably, when investigating the outcomes of islet transplantation alone, two crucial positive outcomes were identified. At the one-year mark following the islet transplantation, there was an estimated 89.4% probability of graft survival. Additionally, patients were estimated to have a 70.2% probability of achieving independence from insulin at one year.

"Although islet transplantation has previously been shown to improve glycemic control compared with conventional insulin therapy in recent clinical trials, little was known about its long-term impact on patient prognosis until now," said Dr. Mehdi Maanaoui, the lead author of the study. "These results are exciting and provide hope for people living with type 1 diabetes and kidney transplants."

"Islet transplantation could be a game-changer in the management of type 1 diabetes, and our research demonstrates a clear association between islet transplantation and a substantial increase in [life expectancy](#)," added Dr. Mehdi Maanaoui.

In 2021, there were estimated to be approximately 8.4 million individuals across the globe with type 1 diabetes. Prevalence is expected to rise, with projections ranging from 13.5 to 17.4 million cases predicted by 2040. Additionally, approximately 30% of patients with type 1 diabetes will suffer from kidney failure.

These figures highlight the escalating public health challenge posed by type 1 [diabetes](#) and the urgent need for effective management and treatment strategies to address this increasing burden on health care systems worldwide.

Dr. Mehdi Maanaoui emphasized, "While further research is required to ensure the outcomes of islet transplantation begin to match the long-term success achieved with pancreas transplantation, we hope these findings

help to increase patient access to [islet transplantation](#)."

More information: Maanaoui M, et al. Islet transplantation versus insulin alone in type 1 diabetic kidney transplant recipients: a French nationwide study on behalf of the TREPID group. Presented at the European Society for Organ Transplantation Congress; 17 September 2023; Athens, Greece.

Provided by European Society for Organ Transplantation

Citation: Islet transplantation boosts long-term survival in kidney transplant recipients with type 1 diabetes (2023, September 16) retrieved 13 May 2024 from <https://medicalxpress.com/news/2023-09-islet-transplantation-boosts-long-term-survival.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--