

## **Gastric fundus submucosa as a site for islets transplantation: development of a rat model**

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**Background:** The transplantation of islets of Langerhans is a promising alternative for glycemic control for patients with type 1 diabetes. The site of the graft is one of the factors that has large impact on the functioning of this transplant. In this sense, the stomach appears to be a promising location for the transplant of the islets. Our objective is to describe a new experimental model for the grafting of Islets of Langerhans in rat stomachs.

**Methodology:** Islets of Langerhans were extracted from 20 isogenic male rats of the Lewis lineage and transplanted into 4 isogenic rats of the Wistar lineage in the gastric fundus submucosa. Normoglycemia was defined as two successive measurements of < 250 mg/dL. No immunosuppression was used.

**Results:** The results obtained following the transplantation of the islets into the gastric submucosa in 4 rats showed between 2050 and 2310 islets transplanted (a mean of 2127). All rats presented satisfactory glycemic control (<250 mg/dL) for at least 2 days, and 1 died possibly from hypoglycemia.

**Conclusion:** The graft of islets into the submucosa of the gastric base is a viable model with potential for adequate glycemic control. This model gives potential for new perspectives and future studies in this area.

**Keywords:** Type 1 diabetes; Langerhans islets; Islets transplantation; Experimental model; Stomach fundus submucosa.