IPITA 2021 VIRTUAL CONGRESS ABSTRACTS

207.2: Favorable 5-year Follow Up Outcomes After Islet Transplantation in Patients With Type 1 Diabetes Mellitus at University of Chicago

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Introduction: Prospective randomized multicenter trial did not find advantage of CXCR1/2 blocker (Reparixin) over placebo in islet transplantation in patients with type 1 diabetes mellitus and problematic hypoglycemia at 1 year follow-up. We present favorable metabolic outcomes at 5-year follow-up in trial cohort from our center.

Material and Methods: 12 nonuremic patients with type 1 diabetes and problematic hypoglycemia received a total 19 islet transplants (ITx) (up to 2 ITx per patient) within 1 year. Eight patients were randomly assigned and received Reparixin and 4 patients received placebo within first week after each transplant in addition to standard immunosuppression (anti-thymocyte globulin, tacrolimus, and mycophenolate).

Results: 11/12 of patients achieved insulin independence during the study period. At 5-year follow-up 4/8 (50%) remained insulin free with HbA1c <6.0% in Reparixin group vs. 1/4 (25%) in placebo group. One patient had partial islet function without severe hypoglycemic episodes (SHEs). Diabetic neuropathy and renal function remained unchanged while retinopathy improved in 3/6 (50%) patients. 6/12 (50%) patients left the study: 3/6 proceeded with pancreas transplant and remain off insulin, the remaining 3/6 stopped immunosuppression with decline of islet graft function. No patients experienced any cardiovascular events nor became persistently sensitized (current PRA 0%).

Conclusions: Repeat islet transplantation led to insulin independence in 91% of patients. 50% of patients in Reparixin group and 25% in placebo remained insulin free 5 years after ITx. In long-term follow-up there was no progress of secondary diabetic complications. Kidney function in all patients remained stable without macroalbuminuria. No patients became persistently sensitized. Subsequent pancreas transplantation was feasible and effective in patients with decline of islet graft function.

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