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**Preliminary results of islet after kidney transplantations from the new islet transplantation program at Medical University of Gdansk in Poland.**

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Introduction: We analyzed first clinical results of islet after kidney transplantation in patients with brittle type 1 diabetes in our new islet transplant program.

Patients and methods: All islet infusions performed since October 2018 were analyzed.

Results: Four patients in age of 41, 53, 55, 51 received their first percutaneous intraportal islet infusions within last year, whereas the first patient also received subsequent second infusion. In 3 patients indication for ITx were recurrent severe hypoglycemia episodes (SHE) and in one problematic hyperglycemia. Patients received on average islet mass of 374,940 IEQ (346,970 – 491,643), with 6,070 IEQ/kg (5074 – 6636) suspended in 8.8 ml (4.5 – 13) of pellet. Median purity, viability and GSIR were 42% (range 20-70), 83,9%, (range 55.4-91.3) and 1,69 (range 1.11-12.3), respectively. Donors were chosen based on 64, 95, 77, 82 and 89 points in the North American Islet Donor Score. In addition to ongoing maintenance immunosuppression for kidney transplant, patients received either Thymoglobulin in case of first ITx or basiliximab in case of second ITx, with etanercept.  $\beta$ -cell graft function assessed on day 75 post after ITx was good, according to Igl's criteria with complete elimination of severe hypoglycemic episodes, HbA1c improvement from 8.7 to 6.7%,

7.0 to 5.7% and 7.4 to 6.2%, respectively, and 50% reduction in insulin requirements in 3 patients with a history of SHE. Continuous glucose monitoring in those 3 patients showed improvement in the average mean standard deviation (SD) sensor glucose from 71 mg/dl to 28 mg/dl, percentage of time spent in target glucose range (70 and 150 mg/dl) improved from 42% to 84%, time spent in hypoglycemia decline from 3.0% to 0.0%, and time spent in hyperglycemia (>150 mg/dl ) declined from 55% to 12%, comparing baseline before the ITx to on day 75 post ITx, respectively. In the remaining patient with baseline HbA1c of 10%, islet cell  $\beta$ -cell graft function on day 75 and after was marginal (Igl) with HbA1c of 7.9-8.2% and 30% drop of insulin requirements. In one case islet infusion was complicated with subcapsular hematoma, which recovered without intervention or transfusion. Another patient developed prolonged cholestasis and another one agranulocytosis, which required temporal withholding of mycophenolate, valgancyclovir and trimetophrim-sulfametoxazole.

Conclusions: Pancreatic islet transplantation offers a substantial improvement in glycemic control in patients with a history of problematic hypoglycemia. All adverse events resolved without sequelae.

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