Abstract

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Long-term metabolic and immunological follow-up of nonimmunosuppressed patients with type 1 diabetes treated with microencapsulated islet allografts: four cases.

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Abstract

OBJECTIVE: To assess long-term metabolic and immunological follow-up of microencapsulated human islet allografts in nonimmunosuppressed patients with type 1 diabetes (T1DM).

RESEARCH DESIGN AND METHODS: Four nonimmunosuppressed patients, with long-standing T1DM, received intraperitoneal transplant (TX) of microencapsulated human islets. Anti-major histocompatibility complex (MHC) class I-II, GAD65, and islet cell antibodies were measured before and long term after TX.

RESULTS: All patients turned positive for serum C-peptide response, both in basal and after stimulation, throughout 3 years of posttransplant follow-up. Daily mean blood glucose, as well as HbA(1c) levels, significantly improved after TX, with daily exogenous insulin consumption declining in all cases and being discontinued, just transiently, only in patient 4. Anti-MHC class I-II and GAD65 antibodies all tested negative at 3 years after TX.

CONCLUSIONS: The grafts did not elicit any immune response, even in the cases where more than one preparation was transplanted, as a unique finding, compatible with encapsulation-driven "bioinvisibility" of the grafted islets. This result had never been achieved with the recipient's general immunosuppression.

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