Embryonic stem cells in new inset type 2 diabetes mellitus

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In the course of 1-5 years, observed were 18 patients (6 women and 12 men) with diabetes mellitus (DM) complicated by hyperinsulinism and dyslipidemia, mean age being 43.5±5.8 years, duration of the disease 1.2±0.5 years. 40% of these patients managed their condition by diet alone, others were undergoing monotherapy with minimal dosages of sulphonylureas. All patients presented with lasting morning hyperglycemia, absence of glycosuria, above normal C-Peptide (5.4±1.3 ng/ml), HbA1C concentration 8.1±1.5%. All patients showed changed blood lipid profiles with elevated cholesterol level, in the mean by 35%, increased LDL and VLDL concentration by mean 30%. The symptoms of the disease were minimal and manifested in the form of functional disturbances and psychophysiological reactions. Patients were treated by transplantations of hematopoietic and non-hematopoietic mesenchymal and endodermal embryonic stem cells isolated from growth zones of 4-8 weeks old cadaverous embryos’ internal organs. Suspensions were administered intravenously, in the amount of 0.5-3.0 ml, cell count 0.1-100x105/ml. In the course of the first post-transplant week, 44% of patients reported elevation of glycemia by 15-25%, then decrease, without additional glycemic therapy. Within a month, 84% of patients reported decreased weakness and better mood. Decrease of morning hyperglycemia began after 2-3 months, and was accompanied by lowered C-Peptide. Normalization of the above indices, as well as lowering of HbA1C concentration, was reported in 5-7 months after the initial treatment; at the same time period observed was positive tendency in normalization of lipid metabolism. Lasting normalization of carbohydrate and lipid metabolism in 78% of patients was reported after 10-12 months, and was accompanied by discontinuance of hyperglycemic medications. Further 2-year observation of 60% of the above patients confirmed sustainability of the effects.