



Influence of different modes insulin on carbohydrate metabolism, state transplant, control of metabolic and hemodynamic factors in patients with type 1 diabetes during the first year after kidney transplantation

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Objective

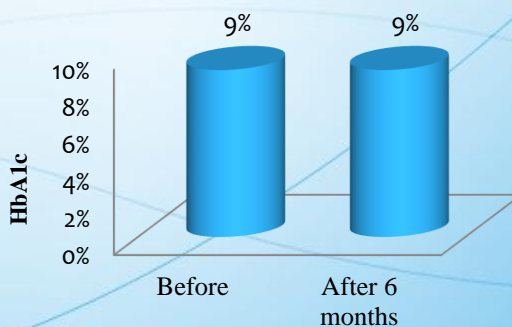
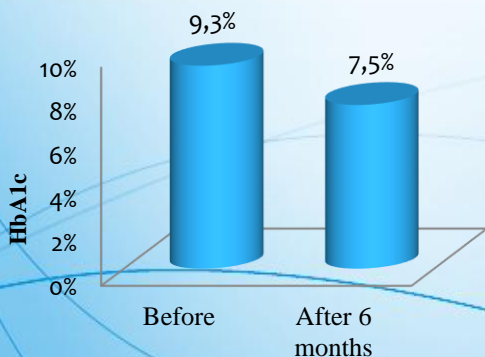
To evaluate the impact of different modes of insulin therapy (continuous subcutaneous insulin infusion (CSII) using insulin pump or multiple insulin injections (MII)) on carbohydrate metabolism, the state of the transplant, cardiovascular system, calcium and phosphorus metabolism in patients with type 1 diabetes (T1DM) during the first year after kidney transplantation (KT).

Materials & Methods

The study included two groups of patients with T1DM after transplantation: 1) 5 patients treated with CSII 2) 5 on MII. Mean duration of diabetes in the first group was 24 years[20;25], the second group – 23 years[21;23]. Posttransplantation period in both groups was comparable - 8 months [7, 8].

Results

The mean level of glycated hemoglobin (HbA1c) in groups before the study did not differ: 9.3 % [9.2; 9.8] and 9.0% [8.0;9.6] respectively. HbA1c in the first group patients was significantly lower after 3-6 months (7.5% [7.5; 7.8]), while in the group on MII remained the same - 9 % [7.6,9.1]. Recurrent diabetic nephropathy at the stage of microalbuminuria was diagnosed in the control terms in 1 patient (20%) on MII (albuminuria - 35 mg/l, reanalysis - 68.0 mg/l). All first group patients (CSII) had normal albuminuria. Glomerular filtration rate (GFR) (EPI) in both groups was comparable: 67 ml/min/1,73 m² [65,86] and 65 ml/min/1,73 m² [63, 109], respectively. Diabetic retinopathy (DR) mainly proliferative stage after repeated laser panretinal photocoagulation was stabilized in all patients of both groups. Levels of hemoglobin (129[125;129]/124[115;133]g/l), parathyroid hormone (65[45;65]/75[65]75pg/ml), calcium phosphorus product (3,1 [2,8;3,4]/2,8[2,3;2,8]), blood pressure (120[110;120]/70[60;70]mmHg/130[115;130]/70[70;80]mmHg) did not differ between groups of patients after KT.



Conclusions: The CSII of using insulin pump allows faster and more efficiently reach target values glycemia in patients with T1DM after KT, which may improve the control of complications and overall prognosis.