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Medical Complications in Diabetic Recipients after Kidney Transplantation

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Abstract : Diabetes mellitus is the most common etiology of end-stage renal disease (ESRD). Also, diabetic nephropathy is the etiology of ESRD in approximately 23% of kidney transplant recipients. A successful kidney transplant improves the quality of life and reduces the mortality risk for most patients. However, patients require close follow-up after transplantation due to medical complications. Diabetes mellitus can affect patient morbidity and mortality due to possible effects of immunosuppressive therapy on glucose metabolism. We compared the frequency of medical complications and the outcomes in diabetic and non-diabetic kidney transplant recipients. Materials and Methods: This retrospective study conducted in 498 patients who underwent kidney transplant surgery at our center in 10-year periods. The patients were divided into two groups: diabetics (46 ± 10 year, 26 males, 16 females) and non-diabetics (39 ± 12 year, 259 males, 197 females). The medical complications, graft functions, causes of graft loss and death were obtained from medical records. Results: There was no significant difference between recipient age, duration of dialysis, body mass index, gender, donor type, donor age, dialysis type, histories of HBV, HCV and coronary artery disease between two groups. The history of hypertension in diabetics was higher (69% vs. 36%, $p < 0.001$). The ratios of hypertension (50.1% vs. 57.1%), pneumonia (21.9% vs. 20%), urinary infection (16.9% vs. 20%), transaminase elevation (11.5% vs. 20%), hyperpotasemia (14.7% vs. 17.1%), hyponatremia (9.7% vs. 20%), hypotension (7.1% vs. 7.9%), hypocalcemia (1.4% vs. 0%), thrombocytopenia (8.6% vs. 8.6%), hypoglycemia (0.7% vs. 0%) and neutropenia (1.8% vs. 0%) were comparable in non-diabetic and diabetic groups, respectively. The frequency of hyperglycaemia in diabetics was higher (8.6% vs. 54.3%, $p < 0.001$). After transplantation, primary non-function (3.4% vs. 2.6%), delayed graft function (25.1% vs. 34.2%) and acute rejection (7.3% vs. 10.5%) ratios of in non-diabetic and diabetic groups were similar, respectively. Hospitalization durations in non-diabetics and diabetics were 22.5 ± 17.5 and 18.7 ± 13 day ($p=0.094$). Mean serum creatinine levels in non-diabetics and diabetics were 1.54 ± 0.74 and 1.52 ± 0.62 mg/dL at 6th month. Forty patients had graft loss. The ratios of graft loss and death in non-diabetic and diabetic groups were 8.2% vs. 7.1% and 7.1% vs. 2.6% ($p > 0.05$). There was no significant relationship between graft and patient survivals with the development of medical complication. Conclusion: As a result, medical complications are common in the early period. Hyperglycaemia was frequently seen following transplantation due to the effects of immunosuppressant regimens. However, the frequency of other medical complications in diabetic patients did not differ from non-diabetic one. The most important cause of death is still infections. The development of medical complications during the first 6 months did not significantly affect transplant outcomes.

Keywords : kidney transplantation, diabetes mellitus, complication, graft function
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