

LOWER GLOMERULAR FILTRATION RATE AT 1 YEAR IN KIDNEY TRANSPLANT RECIPIENT AS A PREDICTOR OF LEFT DIASTOLIC DYSFUNCTION

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Introduction: Kidney transplantation is the optimal treatment for patients with end stage renal disease (ESRD). Successful transplantation have major benefits by reducing CV risk in these patients, but still cardiovascular disease remains the leading cause of death with a functioning graft. Reduced graft function is independent risk factor for developing cardiovascular morbidity.

Aim: This study investigated the associations of LV function changes with impaired kidney graft function expressed as lower glomerular filtration rate (GFR) at 1 year after transplantation.

Methods: A total number of 55 adult patients with LDKT were included in the study. The inclusion criteria were: first transplantation of one organ - kidney, use of living donor related or unrelated, emotionally related (spouses) donor. Data which were related to donor - sex, age of the donor, type of donation (related or unrelated donor). Data which referred to the patient: sex, age, length of hemodialysis treatment prior to transplantation, type of immunosuppressive and antihypertensive therapy. Clinical and biochemical variables, serum creatinine, serum urea, protein status, 24 hours proteinuria, body weight were analyzed at 12 months after transplantation. The GFR was calculated with three equations: MDRD (6 variables), Cockcroft and Gault (C-G) and Nankivell equation.

All patients underwent a transthoracic echocardiographic investigation at 48 months after transplantation. LV function (LV function) were assessed using 2-dimensional echocardiography.

Results: Of total number 55 transplant patients, 50 patients (90.91%) were on hemodialysis prior to transplantation.

Pre-emptive transplantation was performed in 5 patients. The calculated GFR with MDRD, Cockcroft&Gault and Nankivell equation at 12 months was $68.46 \pm 21.5 \text{ ml/min}$, 88.91 ± 24.9 and $67.81 \pm 16.7 \text{ ml/min}$, respectively.

92% of patients received antihypertensive therapy. Twenty percentages of patients have subclinical form of systolic dysfunction defined with reduced Global Longitudinal Strain (GLS) and 10,9% have LV diastolic dysfunction with preserved ejection fraction.

Lower GFR at 1 year post transplantation were associated with LV diastolic dysfunction. Estimated GFR with MDRD equation in group of patient with diastolic dysfunction was $52.22 \pm 22.92 \text{ ml/min}$, and the group of patients with normal LF function eGFR were $70.45 \pm 20.60 \text{ ml/min}$, $p=0.04$. Estimated GFR with C-G equation in first group were 64.95 ml/min , and in the second group were 91.86 ml/min , $p=0.01$. Estimated GFR with Nankivell equation in the first group were $62.66 \text{ ml/min} \pm 23.58 \text{ ml/min}$, and in the second group were $82.76 \pm 15.78 \text{ ml/min}$, $p=0.003$. Lower GFR at 12 months have not been associated with subclinical form of systolic dysfunction.

Conclusion: In kidney transplant recipients, a lower eGFR at 1 year after transplantation was associated with diastolic dysfunction, and increased risk for future development overt clinically heart failure.