Abstract

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Study of Left Ventricle Hypertrophy, Dilatation and Ejection Fraction Changes Before and After Kidney Transplantation

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Abstract

Background: End-stage renal disease (ESRD) population are at risk of serious complications with the cardiovascular one being the commonest. Left ventricular hypertrophy (LVH) is the most frequent cardiac finding observed in this group of patients. It is mainly attributed to chronic pressure and volume overload. Renal transplantation is the best renal replacement modality offered to these patients with an expected improvement in cardiovascular related complications.

Aim of the work: We aimed to study the changes in left ventricle hypertrophy, dilatation and ejection fraction before and after kidney transplantation

Methods: This cross-sectional study included 30 renal transplant recipients with a mean age of (34.13 ± 11.80) years. Echocardiographic study was done to all patients before the transplant operation and 6-12 months after transplantation. In the studied sample, 80% of the patients were known to be hypertensive and 16.7% had diabetes mellitus. Patients with a reported history of post-transplant rejection episodes or heart failure were excluded from the study. All patients were on hemodialysis before transplantation and the mean pre-transplant dialysis duration was (15.83 ± 13.23) months while the mean post renal transplant duration was (10.33 ± 1.95) months. All patients received living kidney donation and were subjected to the same post-transplant immunosuppressive drug regimen.

Results: The mean left ventricle ejection fraction (EF) before and after renal transplantation was (59.70 ± 7.86) and (68.82 ± 7.93), respectively (P <0.001). The mean left ventricle end diastolic dimension (LVEDD) was (55.27 ± 7.77) pre-transplant which was improved to (49.57 ± 6.49) post-transplant with a P value (P <0.001), similarly the mean left ventricle end-systolic dimension (LVESD) was (37.11 ± 7.40) pre-transplant which improved to (30.40 ± 6.07) post-transplant with a P value (P <0.001) and the mean left ventricular mass index (LVMI) showed a significant improvement from (144.1 ± 44.15) pre-transplant into (115.1 ± 38.79) post-transplant with a P value (P =0.002).

Conclusion: According to the results of this study the renal transplantation could improve left ventricle parameters in patients with end stage renal disease.