INTRODUCTION AND AIMS: Changes in renal function after Left Ventricular Assist Device (LVAD) placement have been investigated in multiple studies with contradictory results. Aim: to determine renal function dynamics after continuous flow LVAD implantation (CFLVADI).

METHODS: The investigation included 59 patients with advanced heart failure undergoing CFLVADI as bridge to transplantation: age 50.4±13.1 years. Glosmerular filtration rate (GFR) was calculated by CKD-EPI 2011 formula. Patients were categorized into 2 groups according to pre-implantation GFR level: 1 - with irreversible GFR impairment (GFR ≤58.804: 60 ml/min/1.73m², n = 7), 2 - GFR ≥60 ml/min/1.73m²; n = 52). Post-operative acute injury cases were excluded from both groups. 1 group - pre-LVAD GFR Median - 54 (25 %’s-75 %’s - 33-59), 2 group - pre-LVAD GFR Median - 98 (25 %’s-75 %’s - 82-112).

RESULTS: Significant difference wasn’t found between post-LVAD GFR for group 1 at 1, 6, 12 months: 52 (25 %’s-75 %’s -37-59), 58 (25 %’s-75 %’s - 52-94), 58 (25 %’s-75 %’s - 47-100) respectively, Friedman ANOVA Chi Sqr = 1.5, p = 0.68. LVAD GFR for group 2 at 1, 6, 12 months: 100.5 (25 %’s-75 %’s - 83.5-110.5), 94 (25 %’s-75 %’s - 78-112), 91.5 (25 %’s-75 %’s - 70-110) respectively, Friedman ANOVA analysis revealed significant differences in post-LVAD GFR dynamics: Chi Sqr = 8.18, p = 0.04. Post-LVAD GFR medians were staying in normal ranges, but slightly decreased by every time point. Post hoc analysis (Wilcoxon matched pairs test with Bonferroni correction for p>0.01, did not approve significant changes for this group probably because of small difference in values.

CONCLUSIONS: This study didn’t reveal significant changes in kidney function dynamics after CFLVADI in both groups. LVAD continuous flow presumptive negative effect on the renal blood flow was not confirmed. Consequently, within a year in case of adequate compliance, chronic kidney disease will not progress in these patients. More observations are needed to clarify effect of CFLVADI on kidney function to determine terms of timely implantation, isolate CKD risk groups and plan for heart-kidney transplantation.