FP177 IS MIR-133A MARKER OF PROGRESSIVE CHRONIC KIDNEY DISEASE?

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INTRODUCTION: Chronic kidney disease (CKD) is associated with a high incidence of cardiovascular (CV) disease and numerous risk factor have been implicated to play a role. Recent studies have shown that the levels of various microRNAs in the serum of patients with CKD have been altered and there are reports that miR-133a serum levels correlated with left ventricular hypertrophy in hemodialysis patients.The aim of this study was to investigate association between circulating miR-133a levels and development of *de novo* CV events in patients with CKD stage 3-5HD.

METHODS: This study included 51 patients with diagnosed CKD and 7 healthy individuals as controls. According to the estimated glomerular filtration ratio (eGFR) patients were divided into three equal subgroups (n=17): patients with CKD stage 3b, 4, and 5HD. The level of miR-133a was measured in serum by quantitative real-time PCR. Echo parameters were measured by cardiac ultrasound at the beginning and after 12 months of follow-up. The following CV events were reported during 18 months of follow-up: cardiac death, myocardial infarction, cerebrovascular insult, exacerbation of existing and newly discovered angina pectoris and peripheral arterial disease.

RESULTS: A statistically significant difference in the level of circulating miR-133a between subgroups of patients and healthy individuals was observed ($p = 0.041$; Kruskal Wallis test). The level of miR-133 in the serum of patients with stage 5HD was increased compared to patients with stages 3b and stage 4 and it was 4.5 times higher compared to the control group. CV events were registered more frequently in hemodialysis patients (71%) than in patients from stages 3b and stage 4. However, the association between the miR-133a serum levels with newly occurred CV events was not found ($p = 0.805$; Kruskal Wallis test). The similar level of miR-133a was observed in serum of patients with normal and hypertrophic left ventricle, and in patients with normal and reduced ejection fraction as well ($p = 0.288$ and $p = 0.252$, respectively; Independent Samples Mann Whitney U test) .

CONCLUSIONS: Our study showed association between higher miR-133a serum levels (either as direct marker or surrogate) and the progression of CKD. The significance of increased expression of miR-133a particularly in end stage renal disease has to be confirmed by larger studies.