

FP718 ASSOCIATION BETWEEN MATRIX GLA PROTEIN AND AORTIC STIFFNESS IN KIDNEY TRANSPLANTATION

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INTRODUCTION AND AIMS: Aortic stiffness due to vascular calcification is commonly observed among kidney transplant recipients and is considered as a predictive factor of poor events such as cardiovascular events and graft failure. Matrix-Gla Protein (MGP) is a protein secreted by chondrocytes and vascular smooth cells which acts as an endogenous calcification inhibitor. MGP needs different steps of activation including carboxylation which is vitamine K-dependent. In kidney transplantation, recent studies have shown a significant association between the inactive form of MGP (dephosphorylated and uncarboxylated MGP, dp-ucMGP) reflecting vitamine K status and all-cause mortality. However, we found no data assessing directly the association between dp-ucMGP and aortic stiffness. The aim of our study was to evaluate the association between the inactive form of MGP and aortic stiffness in a cohort of renal transplant recipients (RTR).

METHODS: We studied the association between inactive MGP levels (dephosphorylated and uncarboxylated: dp-ucMGP), vascular calcifications (Kauppila score) and aortic stiffness (pulse wave velocity, PWV) in prevalent kidney transplant recipients from two independent transplant centers. The analysis of association was performed with uni and multivariate linear regression including traditional and non-traditional cardiovascular risk factors and graft function parameters.

RESULTS: We analyzed 128 patients in two independent centers. The mean age of this cohort was 55.4 ± 13.6 years and the mean time since transplantation was 8.3 ± 7.7 years. In univariate analysis, a significant association was observed between MGP and pulse wave velocity ($p=0.017$). In multivariate analysis after taking into consideration other cv risk factor we no longer observed the association between MGP and the calcification score ($P=0.1$) while we still observed a significant and independent association between MGP and PWV ($p=0.05$).

CONCLUSIONS: To our knowledge, this is the first study to show an association between dp-ucMGP and aortic stiffness in a cohort of kidney transplant recipients. The absence of correlation between dp-ucMGP and vascular calcification may be explained by different hypothesis such as the lack of sensibility of the Kauppila score, the low score of calcification in our cohort or the role of vitamine K as an inhibitor of pro-inflammatory markers. These data need to be confirmed in a larger cohort and in a longitudinal study to assess the role of MGP as a marker of the cardiovascular risk in kidney transplant.