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P095 -Urinary alpha 1 acid glycoprotein and progression to end stage renal disease in chronic kidney disease: a prospective observational cohort study.

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Background

Alpha 1 Acid Glycoprotein (AGP) is a negatively charged glycosylated protein with a molecular weight of 41-43-kDa that has increased urinary levels in individuals exposed to chronic hypoxia and patients with kidney disease. As renal hypoxia is a mechanism for progression of chronic kidney disease (CKD) we addressed the hypothesis that urinary AGP (uAGP) is a prognostic factor for clinically important outcomes in patients with CKD.

Materials and methods

A novel latex-enhanced immunoassay developed for the Optilite turbidimetric analyser was used to measure uAGP (mg/L) at inception in 177 patients whom were enrolled in a prospective study of CKD at high risk of progression to end stage renal disease (ESRD). The association between uAGP and development of ESRD was assessed by competing-risks regression (to account for the competing risk of death).

Results

Urinary AGP/creatinine ratio (uAGP/CR mg/mmol) was not related to the stage of CKD (P=0.16). There was a weak positive correlation between uAGP/CR and age (rho 0.193;
P = 0.01,) and moderate negative correlation with baseline urinary albumin creatinine ratio (ACR) (rho -0.301; P<0.001). Fifty eight (32.8%) participants progressed to ESRD at a median follow-up of 71 (inter quartile range (IQR) 67-75) months; there was no association between uAGP level and risk of ESRD before and after adjustment for age, sex, eGFR, and ACR (HR 1.000 [0.999-1.001]); uAGP was not associated with risk of death either before or after adjustment (HR 0.999 [0.998-1.001]). As previously reported, there was a strong association between age, eGFR, ACR and clinical outcomes.

Conclusions

Urinary AGP levels do not relate to the severity of CKD and there is no association between uAGP and progression to ESRD or death in patients with CKD at high risk of progression to ESRD.