The soluble urokinase receptor (suPAR) predicts mortality in end-stage renal disease

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INTRODUCTION AND OBJECTIVES

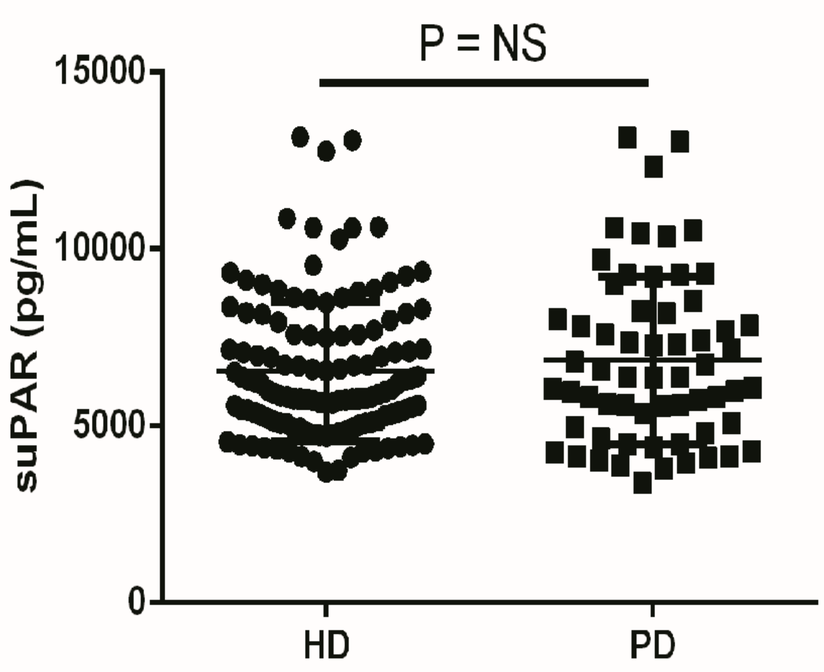
The soluble urokinase receptor (suPAR) is a candidate biomarker for focal segmental glomerulosclerosis (FSGS). The clinical usefulness however is questioned as suPAR accumulates parallel to loss of kidney function. In non-FSGS CKD patients suPAR is an independent predictor of cardiovascular disease. Whether suPAR is associated with outcome in dialysis patients has not been studied to date.

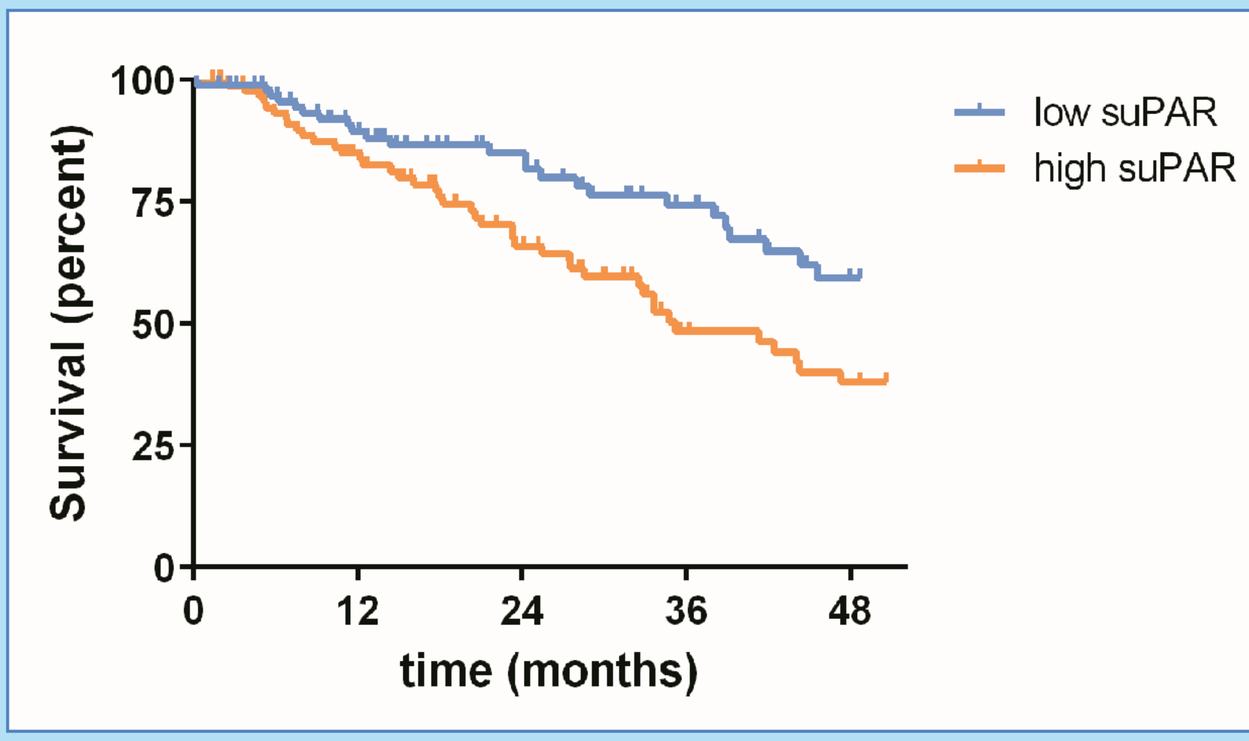
METHODS

We measured suPAR concentrations in patients with end-stage renal disease using the human uPAR enzyme-linked immune sorbent assay (R&D systems™). Associations with overall mortality were explored using Kaplan-Meier estimates and multivariate Cox proportional hazards analyses.

RESULTS

- We determined suPAR concentrations in 186 prevalent patients with end-stage renal disease (hemodialysis (HD) n=125; peritoneal dialysis patients (PD) n=61)
- suPAR concentrations in HD and PD were similar (median 5918 vs. 6372 ng/mL, Wilcoxon P NS)
- suPAR concentrations were associated with overall mortality (P 0.001), both when treated as continuous variable as well as dichotomized
- In multivariate analysis, after correction for age, sex, albumin, c-reactive protein, haemoglobin and PTH, suPAR remained independently associated with mortality (P 0.01)





CONCLUSIONS

suPAR is directly and gradually associated with overall mortality in patients with end-stage renal disease. This extends observations in patients with mild-to-moderate CKD. These observations question whether suPAR is a selective biomarker for FSGS and suggest a role for the urokinase receptor signaling pathway in CKD.

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