**Cardiometabolic biomarkers and prediction of kidney disease progression: the eGFR cohort study**

**Aim:** Traditional markers modestly predict chronic kidney disease progression in Aboriginal and Torres Strait Islander people. Therefore, we assessed among Aboriginal and Torres Strait Islander people with and without diabetes, associations of cardiometabolic and inflammatory clinical biomarkers with kidney disease progression.

**Methods:** The eGFR study is a prospective cohort with members recruited across diabetes and/or kidney function strata. The baseline biomarkers (expressed as 1 standard deviation increase in logarithmic scale) of plasma kidney injury molecule-1 (pKIM-1) (pg/ml), high-sensitivity troponin-T (hs-TnT) (ng/L), troponin-I (hs-TnI) (ng/L) and soluble tumour necrosis factor receptor-1 (sTNFR-1) (pg/ml) were assessed in 496 adults. Linear regression estimated annual change in estimated glomerular filtration rate (eGFR) (ml/min/1.73m2). Cox proportional hazards regression estimated risk for developing a combined kidney health outcome (an absolute 30% decline in eGFR with a follow-up eGFR <60 ml/min per 1.73m2, kidney replacement therapy initiation or kidney disease related death) over the follow-up.

**Results:** The median (25th, 75th percentile) annual CKD-EPI eGFR change was -2.4 (-0.5 to -5.5) ml/min/1.73m2 over a follow-up of 3.0 (2.5, 3.3) years. In individuals with diabetes (n=218), but not those without diabetes (n=278), higher baseline hs-TnT (-2.1 [-4.1 to -0.2], p=0.033) and sTNFR-1 (-1.8 [-3.5 to -0.1], p=0.039) predicted mean (95% CI) eGFR change, after adjusting for age, gender, baseline eGFR and urinary albumin-to-creatinine ratio. Results remained significant with further adjustment for hypertension, blood pressure, BMI, waist circumference, HbA1c, smoking or C-reactive protein. Baseline variables explained 11% of eGFR annual decline variance; increasing to 27% (p<0.001) with biomarkers. Fifty-six participants progressed to the combined kidney health outcome. In individuals with diabetes, hs-TnT and hs-TnI were significantly associated with increased risk of kidney health outcomes.

**Conclusion:** Cardiovascular, kidney and inflammatory biomarkers are likely associated with kidney function loss in individuals with diabetes, with particularly prominent associations for cardiac injury markers.

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