OP-1-5

ATHEROGENIC INDEX OF PLASMA, MEDIATED BY PIGMENT EPITHELIUM-DERIVED FACTOR IS ASSOCIATED WITH CHRONIC KIDNEY DISEASE PROGRESSION IN TYPE 2 DIABETES

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OBJECTIVES
Atherogenic index of plasma (AIP) is a novel marker of atherosclerosis and cardiovascular disease. Its role in chronic kidney disease (CKD) progression is unknown. Pigment epithelium-derived factor (PEDF) has anti-oxidant, anti-angiogenic and anti-inflammatory properties, and its circulating level may be elevated in CKD. We investigated the association between AIP and CKD progression, with possible mediation by PEDF, in type 2 diabetes (T2D).

METHODOLOGY
We conducted a prospective study on 1496 patients (mean age 57.6 ± 10.1 years) from SMART2D cohort. AIP was calculated as the logarithmically transformed ratio of triglyceride to high-density lipoprotein. CKD progression was defined as deterioration across KDIGO estimated glomerular filtration rate categories with ≥25% decrease from baseline. Enzyme-linked immunosorbent assay was used to quantitate PEDF. We examined the association between AIP in quartiles and CKD progression using cox proportional regression, adjusting for demographics, clinical characteristics and medications. This research was approved by an ethics committee.

RESULTS
Over follow-up of up to 11.0 years, 49.8% of the participants had CKD progression. Compared to quartile(q)1, q2, 3 and 4 AIP were positively associated with CKD progression with unadjusted hazard ratio(HR) of 1.27 (95%confidence interval (CI) 1.02-1.57; p=0.033), 1.44 (95% CI 1.17-1.79; p=0.001) and 1.81 (95% CI 1.47-2.23; p<0.001) respectively. Quartile 4 AIP remained positively associated with CKD progression in the fully adjusted model [HR 1.32 (95% CI 1.06-1.64; p=0.013)]. Binary mediation analysis revealed that PEDF accounted for 27.3% of the association between AIP and CKD progression (p=0.008).

CONCLUSION
Higher AIP, mediated by PEDF, is an independent predictor of CKD progression in T2DM. AIP is a simple and inexpensive index for predicting CKD progression for potential use in routine clinical practice.