

**DECREASED LEVELS OF SOLUBLE RECEPTOR FOR ADVANCED GLYCATION END-PRODUCTS ARE ASSOCIATED WITH PRONOUNCED ARTERIAL STIFFENING, ALBUMINURIA AND ATTENUATED GLOMERULAR FILTRATION RATE IN ESSENTIAL HYPERTENSION**

ACC Poster Contributions

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**Background:** Emerging evidence implicates the soluble receptor for advanced glycation end-products (sRAGE) in the development of vascular disease, while arterial stiffening, urinary albumin excretion and impaired renal function are associated with atherosclerosis progression. In this study we estimated the relationships of sRAGE with albumin to creatinine ratio (ACR), estimated glomerular filtration rate (eGFR) and arterial stiffness in essential hypertension.

**Methods:** In 320 newly diagnosed untreated non-diabetic patients with stage I to II essential hypertension [192 men, mean age=52 years, office blood pressure (BP)=145/93 mmHg] ACR values were determined as the mean of two non-consecutive morning spot urine samples and aortic stiffness was evaluated on the basis of carotid to femoral pulse wave velocity (PWV). Moreover, eGFR was assessed using the Modification of Diet in Renal Disease equation, while the distribution of sRAGE was split by the median (1060.1 pg/ml) and accordingly subjects were stratified into those with high and low values.

**Results:** Patients with low sRAGE (n=164) compared to those with high sRAGE values (n=156) had greater 24-h systolic BP (139±8 vs 131±6 mmHg, p=0.001), while did not differ regarding metabolic profile (p=NS). Moreover, patients with low compared to those with high sRAGE levels exhibited higher ACR (50.56±14.3 vs 20.75±15.5 mg/g, p=0.011) and PWV (9±1.7 vs 7.5±1.2 m/sec, p<0.0001), whereas had lower eGFR (65.9±7.2 vs 92.6±9.1 ml/min/1.73m<sup>2</sup>, p<0.05), independently of confounders. In the total population, sRAGE was associated with 24-h pulse pressure (r=-0.371, p=0.001), ACR (r=-0.274, p=0.019), eGFR (r=0.236, p=0.03) and PWV (r=-0.401, p<0.0001). Multiple regression analysis revealed that body mass index, 24-h systolic BP, ACR and PWV were the independent predictors of sRAGE (R<sup>2</sup>=0.57, p<0.0001).

**Conclusion:** In essential hypertension, decreased sRAGE levels are associated with increased PWV, pronounced albuminuria and impairment of renal function. Moreover, the close relation of sRAGE with arterial stiffening, ACR and eGFR, supports the potent role of sRAGE in renal and vascular atherosclerotic disease progression.