



# P96 Soluble Receptor for Advanced Glycation End-products Independently Influenced Individual Age-dependent Increase of Arterial Stiffness

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## ABSTRACT

**Background:** Soluble receptors for advanced glycation end-products (sRAGEs) have been suggested to have a protective role neutralizing the advanced glycation end-products (AGEs) and their pathological effect on vessel walls. We aimed to investigate the association between circulating concentrations of sRAGEs and dynamic of arterial wall stiffening as a manifestation of vascular ageing in general population.

**Methods:** In a prospective cohort study, we longitudinally followed 530 general-population-based subjects (subsample of Czech post-Monica study). Aortic pulse wave velocity (PWV) was measured twice (at baseline and after  $\approx 8$  years of follow-up) using a Sphygmocor device (AtCor Medical Ltd.) and intra-individual change of PWV per year ( $\Delta$ PWV/year) was calculated. Concentrations of sRAGE were assessed at baseline by ELISA methods (R&D Systems).

**Results:** Average  $\Delta$ PWV/year significantly increased across the sRAGE quintiles ( $p = 0.0008$ ) and drop by one sRAGE quintile was associated with  $\approx 21\%$  increase in the relative risk of accelerated age-dependent stiffening ( $\Delta$ PWV/year  $\geq 0.2$  m/sec). In a categorized manner, subjects in the bottom quintile of sRAGE ( $< 889.74$  pg/mL) had fully adjusted odds ratio of accelerated stiffening 1.72 (95% CI: 1.06–2.79),  $p = 0.028$ , while those with high sRAGE concentrations ( $\geq 1695.2$  pg/mL) showed opposite effect [with odds ratio 0.55 (95% CI: 0.33–0.90),  $p = 0.017$ ].

**Conclusion:** Circulating status of sRAGE independently influenced individual progression of arterial stiffness over time. This finding strongly supports hypothesis, that high sRAGE have protective role against vascular ageing.

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