Artery Research
Vol. **25**(**S1**); 2019, *p.* S137
DOI: https://doi.org/10.2991/artres.k.191224.124; ISSN 1872-9312; eISSN 1876-4401
https://www.atlantis-press.com/journals/artres

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

Július Gelžinský*

Medical Faculty in Pilsen, Charles University, Czech Republic

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 ≈8 years of follow-up) using a Sphygmocor device (AtCor Medical Ltd.) and intra-individual change of PWV per year (ΔPWV/year) was calculated. Concentrations of sRAGE were assessed at baseline by ELISA methods (R&D Systems).

Results: Average ΔPWV/year significantly increased across the sRAGE quintiles ($p = 0.0008$) and drop by one sRAGE quintile was associated with ≈21% increase in the relative risk of accelerated age-dependent stiffening (ΔPWV/year ≥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 (≥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 overt time. This finding strongly supports hypothesis, that high sRAGE have protective role against vascular ageing.

*Corresponding author. Email: gelzinskyj@fnplzen.cz