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Cigarette smokers and arterial stiffness

Introduction: The correlation between the arterial stiffness and tobacco users has been verified in a clinical study. Increased arterial stiffness contributes to increased vascular calcifications and atherosclerotic disease and all cardiovascular mortality. Cigarette smokers contribute to 6 million deaths per year globally. Measurement of the arterial stiffness has been recommended in the ESC/ESH guidelines for the arterial hypertension.

Material & Method: In order to evaluate the arterial stiffness, the measurement of aortic pulse wave velocity, (APWV), augmentation index (AI), stroke volume, (SV), the reflection gradient (RC) was performed using Agedio Arteriograph. The estimation of cardiovascular risk factors was performed in all examined patients and two groups were formed. One group included smokers and the other one non-smoker healthy subjects. The open outpatient controlled prospective study has been designed. The cardiovascular others risk factors were evaluated in all.

Results: Preliminary results obtained have shown the significant increase in APWV, augmentation index and reflection index in smokers group compared to normal arterial stiffness values in non-smokers.

Conclusion: These preliminary results have shown that arterial stiffness has been significantly increased in a smoker group whereas the average vascular age has been increased. This finding is additional evidence for the cigarette smoking as risk factor for early vascular pathophysiological changes. The measurements of these parameters are necessary for the cardiovascular risk disease prevention.

Recent Publications

1. Hanan Qasim, Zubair A Karim, Jose O Rivera, Fadi T Khasawneh and Fatima Z Alshbool (2017) Impact of electronic cigarettes on the cardiovascular system. Journal of the American Heart Association 6:e006353J.
2. Szołtysek - Bołdys I, Sobczak A, Zielińska-Danch W, Bartoń A, Koszowski B and Kośmider L (2014) Influence of inhaled nicotine source on arterial stiffness. Przeglad Lekarski 71(11):572-5.
3. Robert J Doonan, Anais Hausvater, Ciaran Scallan, Dimitri P Mikhailidis, Louise Pilote and Stella S Daskalopoulou (2010) The effect of smoking on arterial stiffness. Hypertension Research 33(5):398–410.
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Biography

Sekib Sokolovic is a Professor of Internal Medicine at Medical Faculty of Sarajevo University and Cardiologist at Sarajevo University Clinical Center. He is a European Hypertension Specialist and Director of National Training in Cardiology and Director of the Excellence Center in Arterial Hypertension. His expertise is arterial stiffness, vitamin D, arterial hypertension, microcirculation and pulmonary arterial hypertension. He is an invited speaker worldwide and key speaker as well.