Abstract: P5347

Pulse wave velocity is associated with cognitive impairment in older adults with heart disease.

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Introduction.

Cognitive impairment is highly frequent in adults older than 50 years as well as classical cardiovascular risk factors which cause vascular and endothelial dysfunction. The vascular etiology of cognitive impairment is well known, but it has been poorly studied the possible association between this cognitive status and the arterial stiffness evaluation in patients with heart disease.

Purpose.

The aim of our study was to evaluate the association between cognitive impairment and vascular function in subjects with heart disease.

Methods.

By an analytic transversal study, we included any sex patients older than 50 years, with known chronic cardiovascular disease (ischemic, valvular or conduction abnormalities). All of them were evaluated by Blessed Orientation-Memory-Concentration (BOMC) Test and Mini Mental State Examination (MMSE) to determine cognitive impairment; all patients underwent vascular function evaluation at same time with Arteriograph device, to determine augmentation index (AI) and aortic pulse wave velocity (PWV). All subjects gave informed consent. Protocol was authorized by ethics and science committee.

Quantitative variables are resumed as median (interquartile range) and qualitative variables as absolute and relative frequencies. Mann-Whitney’s and X2(or Fisher exact) tests were used for association analysis. For potentially confounders variables we use logistic regression; alpha confidence level was 0.05 for all tests.

Results.

One-hundred and seven patients were included; 43 (40.1%) had cognitive impairment (CIm). Age was 76 (71-83) years vs. 64 (59-70) years in the non-cognitive impairment (NCIm), p<0.001; cerebrovascular accident history was more frequent in CIm group [13 (30.2%) vs. 9 (14.0%), p=0.04). Sex, diabetes mellitus, hypertension, current smoke, lipids alteration, body mass index, serum glucose, creatinine, cholesterol, HDL-cholesterol, non-HDL cholesterol, hemoglobin, ischemic, valvular or conduction abnormalities pathology, atrial
fibrillation, left atrial enlargement, left ventricle ejection fraction and treatment with statins, antiplatelet or anticoagulants had not significant differences between groups with or without CIIm. Pulse wave velocity and in CIIm group, the PWV was 9.4 (7.4-11.4) m/s vs. 8.2 (7.2-9.3) m/s, p=0.016; augmentation index showed no significant differences between groups [29 (10-48) vs. 27 (13-47) m/s, p=0.78]. In multivariate analysis, PWV (Odds ratio 1.27, confidence interval 1.15-1.69, p=0.03), and age (Odds ratio 1.19, confidence interval 1.10-1.30, p=0.01), remain as independent predictors of cognitive impairment.

Conclusions.

In older adults with cardiovascular disease, pulse wave velocity and age are associated with cognitive impairment independently of other risk classical risk factors and cardiovascular drugs treatment.