P45: IMPEDANCE CARDIOGRAPHY EVALUATION IN ELDERLY HYPERTENSIVE PATIENTS

Francisco Ferreira da Silva, Pedro Marques da Silva


To link to this article: https://doi.org/10.1016/j.artres.2018.10.098

Published online: 7 December 2019
Background: Masked hypertension (MH) is prevalent in young adults and is associated with similar vascular complications as sustained hypertension, but whether this is already evident in young adults is unclear. We therefore compared retinal vessel calibres and function in response to flicker light induced provocations (FLIP) in young healthy adults stratified by MH status and explored associations between these parameters.

Methods: We used data from the first 566 participants (aged 20–30 years) taking part in the African-PREDICT study. Participants were clinically normotensive (70% valid readings) were measured and MH status determined. The central retinal artery (CRAE) and vein equivalent (CRVE) were calculated based on fundus images and retinal vessel dilation responses to FLIP determined.

Results: MH showed a prevalence of 16%. MHs had a lower CRAE (155 ± 10 MU vs. 160 ± 12 MU, p = 0.002), but similar CRVE and vessel dilation in response to FLIP when compared to normotensives. The latter findings remained consistent upon adjustment for sex, ethnicity, age and body mass index. Multivariate regression analysis demonstrated an independent association between CRAE and the presence of MH (R² = 0.07, β = -0.10 (-0.20; -0.01)). No further associations existed between retinal vessel parameters and MH status.

Conclusion: Already at a young age, healthy adults with MH show slight adverse changes in the retinal microvasculature. Considering the prevalence of MH in young adults, and the predictive value of reduced CRAE, our data emphasize the early identification of altered 24 hr blood pressure patterns.

P45
IMPEDANCE CARDIOGRAPHY EVALUATION IN ELDERLY HYPERTENSIVE PATIENTS

Francisco Ferreira da Silva 1, Pedro Marques da Silva 1
1Hospital CUF Descobertas, Lisboa, Portugal
2Hospital de Santa Marta - Centro Hospitalar de Lisboa Central, Lisboa, Portugal

Objectives: Vascular aging results from endothelial dysfunction and increased arterial stiffness, a independent determinant of cardiovascular (CV) events, that is amplified by the presence and progression of arterial hypertension (AH). Age related changes in hemodynamic variables may predict negative vascular outcomes.2 In this study, we evaluate hemodynamic variables in elderly hypertensive patients with impedance cardiography (IC) in order to infer opportunities for therapeutic optimization.

Methods: We retrospectively analysed hypertensive patients that were part of the PREDESC study. The selected 75 patients were divided into two groups, above or below 65 years old, matched by anthropometric and blood pressure (BP) values. (Table 1) Antihypertensive therapy wasn’t considered. For each group the mean of IC variables was obtained, and statistical analysis was performed by a T-student test.

Results: From the patients included, 25 have ≥65 years and 50 <65 years. In the elderly group mean age was 71 years, 52% were female and mean BMI 28.6 Kg/m². Mean BP was 142 mmHg vs 135 mmHg for systolic and 74 mmHg vs 83 mmHg for diastolic BP, heart rate 63 bpm vs 69 bpm in elderly and younger group respectively. Mean IC results showed statistically significant differences for cardiac output, cardiac index, systemic compliance, left ventricular ejection time, velocity index and acceleration index between the groups. (Table 2)

Conclusions: BP determination and control may not signify adequate hemodynamic state. With this study, elderly hypertensive patients present different hemodynamic behaviour, compared with younger ones, in variables of blood flow, resistance and contractility. These data could have potential implications on the pharmacological optimization of BP treatment.

References

P47
ABNORMAL FLOW PATTERN IN MARFAN PATIENTS IS RELATED TO AORTIC GEOMETRIC FEATURES: A 4D FLOW MRI STUDY

Andrea Guyla, Gisela Teixido-Tura, Jose Rodriguez-Palomares, Aroa Ruiz-Munoz, David Garcia-Dorado, Artur Evangelista, Hospitals Vall d'Hebron, Department of Cardiology, VHHR, Universitat Autonoma de Barcelona, Barcelona, Spain

Introduction: Ascending aorta aneurysm and dissection are the most common cardiovascular complications affecting Marfan syndrome patients (MFS). Recent large increase in life expectancy of MFS driven the growing prevalence of descending aorta (DaAo) dilation and dissection. Despite local abnormal vortices in the proximal DaAo were related to local dilation, their origins have never been explored. We investigated the link between aortic geometrical characteristics and abnormal flow pattern in the thoracic aorta of MFS.

Methods: Fifty-tree MFS without significant aortic valve disease and forty age-matched healthy volunteers (HV) were prospectively included in 4D flow-MRI study, obtaining flow field and angiography. Spatial distribution of flow (in-plane rotational flow (IRF) and systolic flow reversal ratio (SFRR))