P96: ASSOCIATION OF METABOLIC SYNDROME AND ITS COMPONENTS WITH ARTERIAL STIFFNESS IN GENERAL POPULATION OF THE EVA STUDY

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Background: Chronic obstructive pulmonary disease (COPD) is an inflammatory condition associated with increased cardiovascular risk. COPD patients have increased aortic stiffness and increased risk of stroke. In addition, increased mid cerebral artery pulsatility index (MCAPi) is associated with increased arterial stiffness and risk of stroke in patients with Diabetes. However, the mechanisms relating to the increased risk of stroke in COPD remain unclear. Therefore, this study aims to investigate the relationship between aortic pulse wave velocity (aPWV) and the MCAPi in COPD patients.

Methods: This Cross-sectional evaluation included 20 COPD patients (mean ±SD, age 69.0 ± 6.3 years) from the ACRADE study. aPWV was measured using the SphygmoCor system and MCAPi using transcranial Doppler ultrasound. In addition, forced expiratory volume in the first second/forced vital capacity (FEV1/FVC) was measured using spirometry and quality of life was assessed using the St George’s Respiratory Questionnaire (SGRQ). Measures of frailty were assessed using Time-Up-and-Go test (TUG) and the Comprehensive Geriatric Assessment (CGA).

Results: MCAPi was significantly associated with aPWV (r = 0.518, P = 0.033). aPWV was significantly associated with SGRQ disease impact (r = 0.604, P = 0.010) and also associated with TUG (r = 0.561, P = 0.019) and CGA (r = 0.639, P = 0.006).

Conclusions: These pilot data highlight the association between increased aortic stiffness and increased pulsatile flow velocity transmitted to the cerebral circulation of COPD patients. In addition, COPD symptoms, impact and frailty are all associated with increased aortic stiffness. However, more research is needed to investigate cause and effect between COPD symptoms, impact and its relationship between aPWV and cerebral flow pulsatility.

P94 EVALUATING CENTRAL PRESSURE IN PATIENTS WITH ACUTE ISCHEMIC STROKE IN ACUTE PHASE: PROGNOSIS AND OUTCOME

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Acute ischemic stroke (AIS) is defined as sudden onset of a neurologic deficit. It’s the cause of about 85% of all strokes and the deficits last for more than 24 h. (1) Blood pressure (BP) is elevated in 75% or more of patients with acute stroke and different levels of peripheral BP at onset are associated with poor outcomes. In patients with AIS, management of blood pressure is still a matter of debate. Brachial pressure is a poor surrogate for aortic pressure and recent evidence suggests that central pressure is more strongly related to future cardiovascular events. In this pilot study we aimed to evaluate central pressure (CBP) in patients admitted with AIS in the acute phase (first 24 h). We evaluated 34 patients with a mean age of 72.7 years. Patients presented a mean NIHSS score 5,4 at admission (0-18) and NIHSS of 4 at discharge. Pre-AIS Rankin mean was 1 and at discharge was 2,1. Brachial systolic and diastolic blood pressures varied between 108 – 250 and 42 – 131 mmHg accordingly, with mean values of 147.48/78.21. Central BP varied from 102.5 – 215 mmHg systolic and 44 – 128.5 mmHg diastolic with mean value of 136,65/80,56 mmHg.In this sample, low values of both central and peripheral BP were associated with poor outcome (Rankin scale).This is an ongoing study aiming to evaluate central hemodynamic parameters in acute phase os AIS at long term. The main goal is to enlarge our sample so we can be able to extract more and stronger data.
correlation coefficient between $r = 0.450$ (cfPWV and diastolic blood pressure) and $r = 0.128$ (between CAVI and triglycerides). After adjustment for age and sex the correlation remains the same with the cfPWV. However, it is only maintained with the CAVI only with blood pressure.

### References


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### Background

Wave reflection parameters predict cardiovascular events, but 24-hour profiles in large samples of healthy adults are unknown.

### Methods

In 1645 individuals free from antihypertensive drugs from 11 centers in Europe and Asia, 24-hour blood pressure monitoring with a validated oscillometric brachial cuff (Mobilograph, I.E.M., Stolberg; Germany) was performed. Brachial waveforms were acquired and processed with ARCSolver algorithms to derive information relating to wave reflections using pulse waveform analysis (heart-rate corrected augmentation index-Aix75, augmentation pressure-AP) and wave separation analysis (backward wave amplitude-Pb, reflection magnitude-RM). Nighttime/daytime difference (N/D) was nighttime (01.00–06.00) minus daytime (09.00–21.00) values/daytime values. Participants were categorized as young (13–39 years; male/female: 219/112), middle-aged (40–66 years; male/female: 545/553), and old (67–104 years; male/female: 86/130).

### Results

24-hour measures of wave reflections increased with increasing age and were significantly lower in men compared to women (Aix75: 18.3 vs 28.0 %, AP: 10.1 vs 14.9 mm Hg, Pb: 18.9 vs 20.0 mm Hg, RM: 63.0 vs 66.2). Aix75 was higher during daytime compared to nighttime (23.3 vs 21.3), but only in young and middle-aged participants. For all participants, AP (11.6 vs 14.5 mm Hg), Pb (18.5 vs 21.7 mm Hg), and RM (62.9 vs 68.8) were higher during nighttime compared to daytime. N/D varied with age and was more pronounced in younger individuals.

### Conclusion

24-hour variability of wave reflection parameters differs according to age and gender. In future, this information could be useful for tailoring individual cardiovascular risk management.