P8.1: FEASIBILITY OF 24-HOUR CENTRAL BLOOD PRESSURE MEASUREMENTS—THE ISAR HEMODIALYSIS STUDY


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Results: Compared to normal TT levels, TD patients (n=19) were older (59 ± 8 vs 52±10 years, P<0.05) with higher BMI (28.6 ± 4.0 kg/m² vs 27.0±4 kg/m², P<0.05). They had lower EF, SV and inversely, higher EA/ELV compared to controls with normal TT. TD was also associated to a higher mitral E/E' and PWVc-f. The association remained significant in multivariate analysis after adjustment for age and cardiovascular risk factors.

Conclusion: Testosterone deficiency associates to an unfavorable LV performance as well to central arterial stiffness, with an adverse outcome on cardiac energetic. This information adds clinical value on hormone lower level, in both cardiovascular risk assessment and stratification of future preventive strategies.

P7.12
CIRCULATING VASCULAR GROWTH FACTORS AND AORTIC INDICES IN GHANAIANS WITH DIABETES AND HYPERTENSION

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Objectives: Impaired angiogenesis may be one mechanism linking large artery stiffness to organ damage. We investigated the relationship between arterial stiffness and regulators of angiogenesis as circulating vascular growth factors: vascular endothelial growth factor (VEGF), angiopeptin (Ang-1), Ang-2, which together with endogenous VEGF induces proliferation and the sprouting of new blood vessels, in Ghanaians with type 2 diabetes (T2DM) and hypertension (HTN).

Methods: 63 T2DM plus HTN patients, 44 patients with T2DM only, 54 patients with HTN only, and 39 subjects without T2DM nor HTN were included in the study. Aortic pulse wave velocity (PWVao) and aortic systolic pressure (SBPao), augmentation index (Alx) and aortic pulse pressure (PPao) were measured with Tensiomédié's Arteriograph. Fasting blood samples were measured for blood glucose, lipid profile, Ang-1, Ang-2 & VEGF.

Results: T2DM plus HTN patients had higher levels of Ang-1 (44.3 vs 36.1 and 36.3 ng/ml; p=0.004) and Ang-2 (875.65 vs. 764.4 and 710.35 pg/ml; p=0.009) than T2DM only and HTN only patients respectively. Ang-2 levels were positively associated with PWVao (r=0.17, p=0.03), SBPao (r=0.28, p<0.01), and Alx (r=0.22, p<0.01). When all the vascular growth factors were forced into multiple regression analysis, adjusting for age, BMI, systolic BP and fasting glucose, only Ang-2 emerged significantly related to PWVao (β=0.027, p=0.02). SBPao (β=0.54, p<0.01), Alx (β=0.3, p<0.01).

Conclusion: Vascular growth factors were related to arterial stiffness indices, Ang-2 independently, in Ghanaians, and higher in patients with both diabetes and hypertension than with either condition alone.

P7.13
DOES CAROTID ARTERY APPLATION TONOMETRY CAUSE BAROREFLEX ACTIVATION?

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Introduction: Carotid artery applanation tonometry is widely used to assess carotid-femoral pulse wave velocity and the local carotid artery pressure response. However, the substantial pressure applied locally to the carotid artery with applanation tonometry, might evoke a baroreceptor response. This response would lead to changes in heart rate (HR) and blood pressure waveforms, influencing the intended measurements. In this study, we assessed whether carotid applanation tonometry has an influence on HR.

Methods: In 22 hypertensive subjects, HR was assessed during carotid as well as femoral applanation tonometry by continuous finger pulse waveform recording (Nexfin). Subjects were in supine position. Both carotid and femoral acquisitions were measured in alternation and in triplicate. Median averaging over the three measurements was used to obtain a subject's median HR during carotid as well as femoral tonometry.

Results: HR during carotid tonometry and femoral tonometry was 64.0±9.3 bpm and 64.6±9.8 bpm respectively. Difference (carotid-femoral) was -0.7±2.4 bpm (p=0.198, two-sided t-test, 95% CI: [-1.7,0.4]bpm). Given a power (1-β) of 0.8 and α=0.05, our study was powered to statistically detect a 1.4bpm HR difference.

Conclusion: We conclude that carotid artery tonometry influences HR by at most 1.4bpm, which appears clinically insignificant.