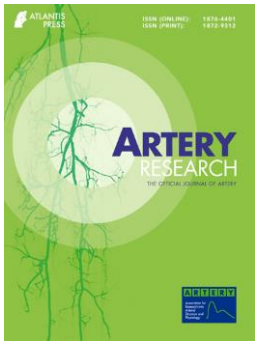

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2.2: TRANSFER FUNCTION-DERIVED CENTRAL PRESSURE AND CARDIOVASCULAR EVENTS: THE FRAMINGHAM HEART STUDY

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MRI. Strokes were identified from primary care record review and hospital discharge data.

Results. Stroke was most frequent in AfC. Prevalence of infarcts was similar in all ethnic groups while WMH were most frequent in AfC. Mean carotid IMT(excluding those with plaque) was greatest in AfC. (Table) CAC was greater in WE and SA. In WE, associations between carotid IMT and presence of stroke, infarcts or WMH was strong, even after adjustment for Framingham risk factors and CAC (fully adjusted odds ratio (OR(95%CI)) for a 1 SD increase in IMT:1.34(1.10, 1.64)). However, in SA and AfC there was little association between IMT and CVD (fully adjusted ORs: 1.12(0.87, 1.44), 0.74 (0.51, 1.08) respectively (ethnicity x IMT interactions: $P = 0.32$ and 0.028 respectively). CAC was independently associated with CVD in WE (fully adjusted OR for 10 unit increment:1.003(1.0004, 1.001), but less so in SA (1.002(1.00, 1.005) or AfC (1.00(0.99, 1.006).

Conclusion. Neither carotid IMT nor CAC were independently associated with presence of clinical and subclinical cerebrovascular disease in South Asians or African Caribbeans. In Europeans, IMT was more strongly associated than CAC.

*Median (IQR)	White Europeans	South Asians	African Caribbeans
Number	630	484	217
Male	77%	86%	52%
Smoking (never/ex/current)	38/54/8%	78/18/4%	66/28/6%
Treated hypertension	56%	76%	79%
Total cholesterol: HDL ratio*	3.5(2.9, 4.2)	3.4(2.8, 4.2)	3.2(2.6, 3.8)
Waist:hip ratio*	0.97 (0.93, 1.02)	1.00 (0.96, 1.04)	28.4 (25.6, 31.9)
CAC, AU*	97(6,384)	92(7,410)	0.95 (0.90, 1.01)
CIMT, mm*	0.88 (0.76,1.04)	0.89 (0.79,1.02)	0.92 (0.81,1.04)
Carotid lumen diameter, mm	6.61 ± 0.87	6.44 ± 0.76	6.20 ± 0.78
Stroke	4%	5%	9%
Brain infarcts, any (MRI	21%	20%	22%
White matter hyperintensities	33%	30%	42%
Presence of any stroke, infarcts, WMH	37%	37%	47%

2.2
TRANSFER FUNCTION-DERIVED CENTRAL PRESSURE AND CARDIOVASCULAR EVENTS: THE FRAMINGHAM HEART STUDY

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Relations between central versus brachial blood pressure and major cardiovascular disease (CVD) events remain controversial. Central measures derived using radial tonometry and a generalized transfer function as implemented using the SphygmoCor device may better predict CVD risk compared to central pressures from carotid tonometry. We used proportional hazards models to examine relations of augmentation index, central systolic and pulse pressure, and central-to-peripheral pulse pressure amplification obtained using the Sphygmocor algorithm to first-onset major CVD events in 2183 participants (mean age 62 years, 58% women) in the Framingham Heart Study. During median follow-up of 7.8 (range 0.2 to 8.9) years, 149 participants (6.8%) had an incident event. Augmentation index ($P = 0.6$), central systolic pressure ($P = 0.20$), central pulse pressure ($P = 0.24$) and pulse pressure amplification ($P = 0.15$) were not related to outcomes in models that adjusted for age, sex, clinic systolic blood pressure, use of antihypertensive therapy, total and high density lipoprotein cholesterol concentrations, smoking, and presence of diabetes. When models were repeated using supine oscillometric systolic pressure recorded at the time of tonometry and excluding cases with tonometry pulse height variations >5%, pulse diastolic variation >5%, pulse shape variation >4% or an operator index <80, as recommended by SphygmoCor documentation ($N = 1262$, 64 events), central pulse pressure estimated using the SphygmoCor algorithm was inversely associated with events (HR=0.64, confidence limits 0.42 to 0.98; $P = 0.04$). After considering standard risk factors including brachial systolic pressure, higher central pressure derived using radial artery tonometry and a generalized transfer function was not associated with higher CVD risk.

2.3
PULSE WAVE VELOCIY IN A LARGE POPULATIONAL STUDY. PRELIMINARY RESULTS BRAZILIAN LONGITUDINAL STUDY OF ADULT HEALTH (ELSA-BRASIL)

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Large artery stiffening is widely accepted as a determinant of ISH in the population with a predictive power of CV events has been shown to be beyond traditional risk scores. However, its clinical role in is still limited perhaps due to the lack of established reference values and methodological uniformity. The aim of this prospective longitudinal study is to investigate the role of large artery stiffening as determinant of cardiovascular disease. ELSA-Brazil is a cohort study of 15,105 university servants, aged 35-74 years. The baseline examination was carried out from 2008 through 2010 and included interviews, clinical, anthropometric examinations, overnight urine, ECG, IMT, echocardiography, retinography, HR variability, and PWV (Complior). All centres were submitted to a central training and validation. A biologic sample was stored to allow investigation of biomarkers of CV risk. Values are mean ±SD. PWV measurements were obtained in 14,835 individuals (M:F; 6,780:8,055). PWV is strongly influenced by age and BP ($R^2 =$ 0,41). HR and fasting glucose provides only additional 2% in R^2 change. Lipids were not correlated to PWV. Age and BP adjusted values in men are higher than in women (9,53 ± 1,89 vs 9,2 ± 1,88 m/s, $P < 0{,}001$), but the slope of correlation with age are not different. BP status does not change the correlation of BP and PWV. However adjusted PWV values are increased in Diabetic individuals (9,97 ± 2,3 vs 9,18 ± m/s,$P < 0{,}001$). The present study has a potential to clarify important questions regarding the role of PWV as a determinant of disease, favouring its routine inclusion in clinical practice.

2.4
SERUM BIOMARKERS AND RETINAL VESSEL DIAMETERS IN SCHOOL CHILDREN

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Objectives. Retinal vessel analysis is a valid diagnostic tool to detect subclinical signs of atherosclerosis in the cerebrovascular microcirculation as early as childhood. The aim of the study was to investigate the association between specific obesity-related biomarkers and retinal vessel diameters in school children.

Methods. We studied 381 children aged 10 to 13 years in a school-based setting. Anthropometric measurements and blood sampling were conducted using standard protocols for children. The serum biomarkers leptin, insulin, adiponectin and IL-6 were assessed and correlated with retinal arteriolar (CRAE) and venular (CRVE) diameters and the arteriolar-to- venular ratio