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P3.29: ASSESSMENT OF THE DETERMINANTS OF LOCAL CAROTID STIFFNESS IN A GENERAL POPULATION IN NORTHERN ITALY

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Magnetic Separation Module I according to manufacturer's protocol. DNA samples were then amplified by real time polymerase chain reaction (real-time PCR), followed by High Resolution Melting Analysis (HRMA) on RotorGene 6000. Hardy-Weinberg equilibrium expectation was tested by using a chi-square ($\chi 2$) goodness-of-fit test. Non-adjusted analysis of the association between *ApoE* genotypes and alleles with essential hypertension was based on Fisher Exact Probability Test by using the Vassarstat calculator.
As found in most European populations, the ε3ε3 genotype was the most common (72.04%), followed by ε3ε4 (14.69%), ε2ε3 (9.80%), ε2ε4 (2.24%), ε2ε2 (0.82%), and ε4ε4 (0.41%) in control group. The genotype frequencies in hypertensive patients were: ε3ε3 (72.99%), ε3ε4 (16.11%), ε2ε3 (7.11%), ε2ε4 (2.37%), ε4ε4 (1.42%), ε2ε2 (0.00%). Allele frequencies were within the Hardy-Weinberg equilibrium expectations ($P > 0.05$) in both patients and controls. Neither the ε2 nor the ε4 carrier status was associated with hypertension (OR = 0.68, 95%CI = 0.41-1.13, p=0.14 and 1.23, 0.84-1.79, p=0.29 respectively).
This study provides epidemiologic evidence that the ApoE genotype is not associated with EH in Bulgarian population.

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ASSESSMENT OF THE DETERMINANTS OF LOCAL CAROTID STIFFNESS IN A GENERAL POPULATION IN NORTHERN ITALY

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Background: The determinants of aortic stiffness have been elucidated in several studies, while few data are available for carotid stiffness. Aim of the study was to identify the main determinants of carotid arterial stiffness parameters in a general population in Northern-Italy(Vobarno Study).
Methods:183subjects(61% female, mean age 55± 4,53% hypertensives,59% treated) underwent laboratory examinations and both clinic and 24 hours BP measurement (Spacelabs 90207). A non-invasive echotracking system was used to measure intima-media thickness, diameter, distension, distensibility (Dist), distensibility coefficient (CDist), compliance coefficient (CC) and elastic modulus (Einc) on 4-cm long common carotid artery segment.
Results: correlation coefficient of Dist, CDist and Einc are shown in Table 1.

	Dist		CDist		Einc	
	R	*p*	r	*p*	r	*p*
Age (years)	−0.240*	0.001	-0.241*	0.001	0.210*	0.005
BMI (Kg/m2)	−0.192*	0.01	-0.192*	0.010	0.169*	0.024
Clinic SBP (mmHg)	−0.501*	0.001	-0.477*	0.000	0.511*	0.000
Clinic DBP (mmHg)	−0.181*	0.015	-0.184*	0.014	0.262*	0.000
Clinic MBP (mmHg)	−0.374*	0.001	-0.362*	0.000	0.422*	0.000
24 hours SBP (mmHg)	−0.207*	0.006	-0.198*	0.009	0.222*	0.003
24 hours DBP (mmHg)	−0.183*	0.016	-0.191*	0.012	0.207*	0.006
24 hours MBP(mmHg)	−0.13	0.094	-0.125	0.099	0.166*	0.029

At multivariate analysis the independent predictor of Dist,CDist and Einc were age (β=-0.22, β=-0.22 and β=0.18, respectively, all p<0.01), BMI (β=-0.18, β=-0.18 and β=0.14, respectively, all p<0.05),MBP (β=-0.34, β=-0.33 and β=0.40, respectively, all p<0.001)and female gender(β=0.19,β=0.18 and β=-0.15,respectively,all p<0.05).When carotid arterial stiffness parameters were compared in males and females,a significantly lower values of Dist and CC were observed in females (365±97 vs 427±124 μm,p<0.001 and 0.63±0.24 vs 0.83±0.29 mm^2/kPa^{-1},p<0.001, respectively).After adjusting for possible confounders in a multivariate model distension(345 vs 456 μm, p<0.001),CDist (23.4 vs 30.3 $kPa^{-1}\cdot 10^{-3}$, p<0.001) and CC (0.61 vs 0.87 mm^2/kPa^{-1}, p<0.001)were significantly lower in females while Einc was significantly higher in females(0.45 vs 0.34 $kPa\cdot 10^3$,p=0.007).Conclusion: in a general population sample age, female gender, BMI and clinic and 24 hours BP values are associated to an increase local carotid stiffness.

P3.28
CENTRAL VS. PERIPHERAL AND STEADY VS. PULSATILE BLOOD PRESSURE COMPONENTS AS DETERMINANTS OF RETINAL MICRO-VESSEL DIAMETERS

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Objective: We assessed association of retinal micro-vessel diameter with central and peripheral BP.
Methods: We post-processed retinal photographs taken in 514 subjects randomly selected from a Flemish population (mean age, 50.6 years; 50.8% women), using IVAN software to generate retinal arteriolar (CRAE) and venular (CRVE) equivalents. We measured peripheral and central BP by mercury sphygmomanometry and tonometry at the carotid artery (SphygmoCor software), respectively. We applied stepwise regression, considering as covariables in addition to BP sex, age, body mass index, smoking, drinking, antihypertensive drug treatment, and serum cholesterol.
Results: CRAE and CRVE averaged 153μm and 219μm. Effect sizes (ìm) for CRAE for 1−SD increase in peripheral vs. central BP were −3.77 vs. −3.52 systolic, −3.16 vs. −3.13 diastolic, −3.84 vs. −3.64 for mean BP, and −2.07 vs. −1.83 for pulse pressure (P≤0.006). Models that included two BP components demonstrated that CRAE decreased (P≤0.035) with systolic (peripheral vs. central, −2.87 vs. −2.40) and diastolic (−1.58 vs. −1.80) BP. CRAE decreased with mean BP (−3.53 vs. −3.53; P<0.0001), but not with pulse pressure (P≥0.19). CRVE was not related to any peripheral or central BP component (P≥0.062). The variance inflation factor in these models was <2.0. The multivariable-adjusted slopes of CRAE on BP components were similar for centrally and peripherally measured BP (p≥0.28).
Conclusion: Higher systolic and mean BP is associated with smaller CRAE, irrespective of whether BP is measured centrally or peripherally. Central BP does not refine the inverse association of CRAE and CRVE with peripheral BP.

P3.30
DIFFERENCE IN THE PREVALENCE OF HYPERTENSION USING STANDARD BLOOD PRESSURE MEASUREMENT COMPARED TO AMBULATORY BLOOD PRESSURE MONITORING IN KILIFI, KENYA

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Background: As sub Saharan Africa (sSA) goes through demographic and epidemiological transition, accurate data on disease prevalence are required to guide allocation of scarce health resources between declining but still important infectious disease and emerging chronic conditions such as hypertension. We conducted a study to determine the difference in the prevalence of hypertension as diagnosed using standard blood pressure measurement (SBP) compared to 24-hour ambulatory monitoring (ABPM).
Methods: We randomly selected an age-stratified sample of 700 adults (18-90 years) living within the Kilifi Health and Demographic Surveillance System (KHDSS) in Kenya (adult population ∼125,000). All participants underwent SBP by WHO recommended methods (mean of last 2 from 3 sequential readings); those with an average SBP ≥140/90 mmHg underwent ABPM.