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P103: REFERENCE VALUES IN A REPRESENTATIVE SAMPLE FOR A CERTAIN COUNTRY

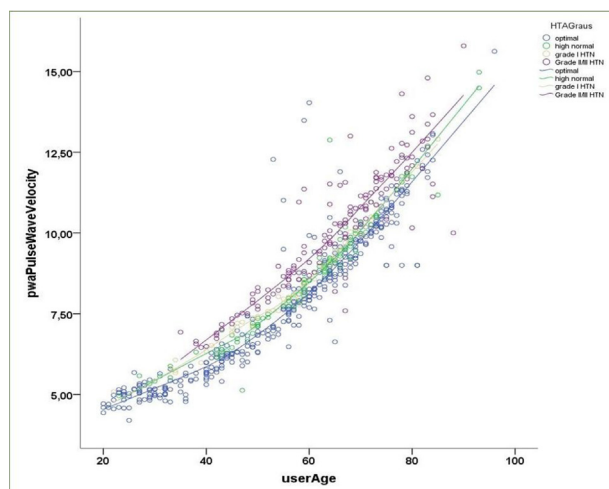
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Results: Participants recruited for the project account for 658, 65.7% women, with a mean age of 57.34 ± 16.26 years (range: 20–96 years). Brachial BP was 126.60 ± 16.43 mmHg and 79.89 ± 11.54 mmHg, and central BP was 115.80 ± 15.35 mmHg and 81.18 ± 11.60 mmHg, respectively for systolic and diastolic BP. Mean pulse wave velocity (PWV) was 8.45 ± 2.28 m/s. The proportion of participants with increased PWV was 19.9%. Participants with increased PWV were significantly older and had higher brachial and central BP and BMI. Multivariate linear regression indicated age, Gender, BP and abdominal fat as independent determinants of PWV. AS trajectories were significantly different as a function of arterial hypertension and cardiovascular risk classification (figure 1). **Conclusions:** The preliminary results of this pioneering large scale study measuring arterial function in communal pharmacies provides the grounds for the operationalization of subclinical target organ damage screening in pharmacies, as a strategy to improve cardiovascular risk monitoring and to promote adherence to treatment.



P100 THE ASSOCIATION BETWEEN DAIRY PRODUCTS CONSUMPTION AND ARTERIAL STIFFNESS: A META-ANALYSIS

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Background: Dairy products consumption has been related to some metabolic risk parameters. Specifically, some studies have associated higher intake of dairy products with lower pulse wave velocity (PWV) values, although discrepancies persist in this relationship.

Objective: To determine the association between dairy products consumption and PWV.

Methods: A search strategy was conducted in Medline, SCOPUS and WOS, from their inception to June 2018, for observational studies addressing the association between dairy products and PWV. Effect sizes (ES) were estimated by using random-effects meta-analysis models based on Der Simonian and Laird method. Subgroup analyses were conducted based on dairy products type (i.e., milk, cheese, and yogurt).

Results: Six studies were included in this systematic review and meta-analysis. The ES for the association between total dairy products and PWV was -0.01 (95% CI: -0.08 ; 0.05) (Figure 1). Subgroup analysis could be only performed based on milk consumption ES: 0.00 (95% CI: -0.07 , 0.08 ; I²: 0.0 ; $p = 0.865$). Systematic review showed similar results for cheese, and yoghurt. Conversely, low fat dairy products were associated with lower PWV values.

Conclusion: There was no association between total dairy products, milk, cheese and yoghurt consumption and PWV. Low fat dairy products consumption has been related to lower levels of PWV. These findings add

further evidence supporting that dairy products consumption does not pose any additional cardiovascular risk factor. Further research is needed to elucidate the role of each dairy product type on cardiovascular disease risk factors.

P101 REFERENCE VALUES OF DIFFERENT PARAMETERS OF VASCULAR FUNCTION IN CAUCASIAN POPULATION WITHOUT CARDIOVASCULAR DISEASES. EVA STUDY

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Objective: To describe the mean values of different parameters of vascular function, evolution with age and differences by gender in the general population without cardiovascular diseases.

Design and method: An observational, descriptive, cross-sectional study. Study population: From the population assigned to the participating health-care centres, a cluster random sampling stratified by age and gender was performed to obtain 501 participants aged between 35 and 75, 100 per decade, (50% women) without cardio or cerebrovascular disease. Measurements: pulse wave velocity femoral carotid (cfPWV) was determined using the SphygmoCor System, Cardio Ankle Vascular Index (CAVI) and the pulse wave velocity ankle arm (aaPWV) using the VaSera.

Results: Mean values: age 55.9 ± 14.2 years (Males = $65.9 \pm 14.3y$, Females = $55.8 \pm 14.2y$, $p = 0.935$); CAVI: 8.0 ± 1.4 (Males = 8.1 ± 1.5 , Females = 7.9 ± 1.4 , $p = 0.043$); aaPWV = 12.9 ± 2.7 m/seg (males = 13.2 ± 2.5 m/seg and women = 12.7 ± 2.9 m/seg, $p = 0.064$) and cfPWV: 6.5 ± 2.0 m/sec (Males = 6.8 ± 2.2 m/sec, Females = 6.2 ± 1.8 m/sec, $p < 0.001$). For each year that the age increases, an increase of the CAVI of 0.073 ($y = 3.919 + (0.073 \cdot \text{age})$), in males 0.075 ($y = 3.943 + (0.075 \cdot \text{age})$) and in women 0.071 ($y = 3.900 + (0.071 \cdot \text{age})$). An increase in aaPWV of 0.137 m/sec ($y = 5.276$ m/sec + $(0.137$ m/sec * age) , in males 0.118 ($y = 6.554$ m/sec + $(0.118$ mm*age)) and in women 0.156 ($y = 3.978$ m/sec + $(0.156$ m/sec*age)) and an increase in cfPWV of 0.092 m/sec ($y = 1.417$ m/sec + $(0.092$ m/sec*age)), in males 0.104 ($y = 1.075$ m/sec + $(0.104$ m/sec*age)) and in women 0.080 ($y = 1.748$ m/sec + $(0.080$ m/sec*age)).

Conclusions: The mean values of CAVI and cfPWV as well as the annual increase are greater in males than in females. However, there are no differences in the mean values of the aaPWV and the annual increase is greater in females.

References

1. Namekata T, Suzuki K, Ishizuka N, Shirai K. Establishing baseline criteria of cardio-ankle vascular index as a new indicator of arteriosclerosis: a cross-sectional study. *BMC Cardiovasc Disord.* 2011;11:51.
2. Boutouyrie P, Vermeersch aSJ. Determinants of pulse wave velocity in healthy people and in the presence of cardiovascular risk factors: 'establishing normal and reference values'. *Eur Heart J.* 2010 Oct;31(19):2338-50.
3. Wohlfahrt P, Cifkova R, Movsisyan N, Kunzova S, Lesovsky J, Homolka M, et al. Reference values of cardio-ankle vascular index in a random sample of a white population. *J Hypertens.* 2017 Jun 07;34(234-48)
4. Vlachopoulos C, Aznaouridis K, O'Rourke MF, Safar ME, Baou K, Stefanadis C. Prediction of cardiovascular events and all-cause mortality with central haemodynamics: a systematic review and meta-analysis. *Eur Heart J.* 2010; 31 (15):1865-71.

P102 WITHDRAWN BY AUTHOR

P103 REFERENCE VALUES IN A REPRESENTATIVE SAMPLE FOR A CERTAIN COUNTRY

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Background: Difference between sex, age, ethnias etc. have been described for every parameter of vascular structure and function. It is of outmost importance to know their reference values for using non invasive vascular evaluations (NIVE) in a certain population to detect subclinical atherosclerosis.

Objective: Analyze the values of the main vascular structure and functional parameters used for NIVE in a significative reference sample of a country.

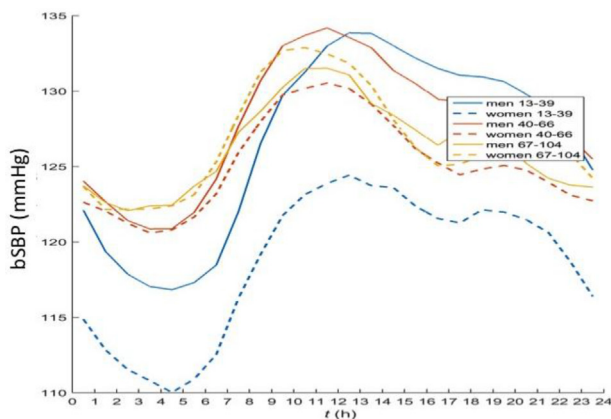
Methods: A retrospective cohort study from a database of 7355 p. first ever Non Invasive Vascular Evaluations (NIVE) (IMT, plaques, PWV and Endothelial Function (EF)). We analyzed 667 p. 40–45 y.o. (9.1%) referent healthy patients without CV risk factors, heredofamilial history, CV events and CV drugs. The whole group, men (392) and female (275) data divided in deciles (from 70 y.o.) are described.

Results: The higher proportion of the sample is concentrated between 30 and 60 y.o. in both sexes. IMT ranged from 0,49 to 0,8 mm, % of CF Plaques from 1,2% to 78,6%, Athero.Burden 16 to 68mm², Endothelial Function from 9,8 to 8,8% and PWV from 6,8 + 1.9 to 10.3 + 2 m/sec. Comparison between sex showed higher values in males and with other reference antional and international series, quite similar values except in some groups.

Conclusion: This is a significative sample of "healthy patients" coming from a mixed urban and rural population of our country, offering a set of reference values for the main NIVE parameters, ready for clinical application.

References

- Engelen L, Ferreira I, Coen D, Stehouwer C D, et al on behalf of the Reference Values for Arterial Measurements Collaboration: Reference intervals for common carotid intima-media thickness measured with echotracking: relation with risk factors. *European Heart Journal* (2013) 34, 2368–2380.
- The Reference Values for Arterial Stiffness' Collaboration Group: Determinants of pulse wave velocity in healthy people and in the presence of cardiovascular risk factors: "Establishing normal and reference values". *European Heart Journal* 2010; 31: 2338–2350.
- Díaz A, Galli C, Tringler M, et al: Reference Values of Pulse Wave Velocity in Healthy People from an Urban and Rural Argentinean Population. *International Journal of Hypertension* 2014: 1-7 ID 653239
- Bia D, Zocalo Y, Farro I, et al: Integrated Evaluation of Age-Related Changes in Structural and Functional Vascular Parameters Used to Assess Arterial Aging, Subclinical Atherosclerosis, and Cardiovascular Risk in Uruguayan Adults: CUiiDARTE Project. *Int J of Hypertens* 2011; 1-12



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INFLUENCE OF AGE AND GENDER ON 24-HOUR VARIABILITY OF CENTRAL BLOOD PRESSURE: FINDINGS FROM THE INTERNATIONAL 24-HOUR AMBULATORY AORTIC BLOOD PRESSURE CONSORTIUM (I24ABC)

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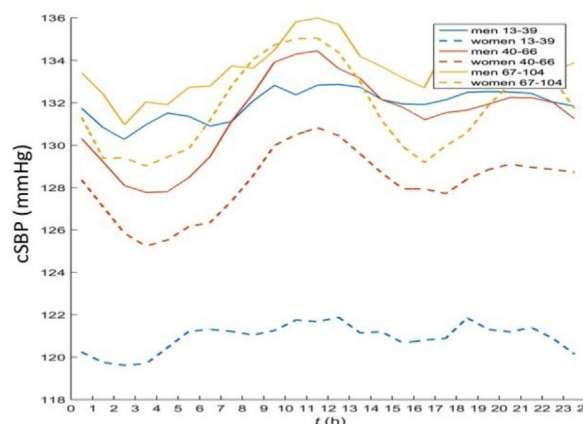
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Background: Conventional brachial cuff BP is known to vary according to age and gender, but the influence of these factors on 24-hour ambulatory central BP is unknown. We sought to determine this in a large healthy population from 11 centers in Europe and Asia.

Methods: 24-hour ambulatory BP using a validated oscillometric device (Mobilograph, I.E.M, Stolberg, Germany) was performed in 1645 individuals free from anti-hypertensive drugs. Participants were categorized as young (Y: 13–39 years; M/F:219/112), middle-aged (MA: 40–66 years; M/F:545/553), and older (O: 67–104 years; M/F:86/130). Nighttime/daytime difference (N/D) was defined as nighttime (01.00–06.00) minus daytime (09.00–21.00) values / daytime values.

Results: Averaged 24-hour brachial BP was 125/79 (Y), 128/83 (MA), and 127/77 (O) mmHg. N/D for brachial SBP was -10.3% (Y), -6.4% (MA), and -4.7% (O), but was significantly less pronounced for central SBP: -1% (Y), -3.1% (MA), and -1.9% (O). Men, compared to women, had higher brachial and central SBPs, mainly in younger participants. Brachial pulse pressure (PP) displayed limited and age-dependent circadian variations, whereas central PP was substantially higher at nighttime: N/D was 24% (Y), 9% (MA), and 5.9% (O). Brachial and central PPs were higher in men in the younger group, but higher in women in middle-aged and older groups.

Conclusion: Both age and gender each have a significant influence on 24-hour variability of central BP, but is different than variability in brachial BP. These data have potential implications for refining hypertension diagnosis and management.



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PULSE PRESSURE AMPLIFICATION AND PHYSICAL ACTIVITY IN YOUNG BLACK AND WHITE ADULTS: THE AFRICAN-PREDICT STUDY

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