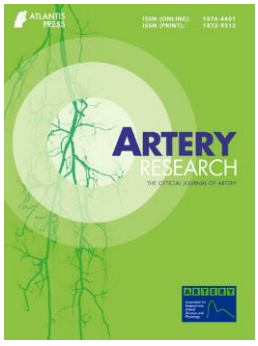


Artery Research

ISSN (Online): 1876-4401 **ISSN (Print): 1872-9312**
Journal Home Page: https://www.atlantis-press.com/journals/artres

P99: STUDY ON THE PREVALENCE AND DETERMINANTS OF EARLY VASCULAR AGEING IN A COMMUNITY PHARMACY SETTING – PRELIMINARY RESULTS: FROM THE ASINPHAR@2ACTION (ARTERIAL STIFFNESS IN THE PHARMACIES TO (2) ACTION) PROJECT

Telmo Pereira, Ema Paulino, Mariana Rosa, Ana Pinto, Maria Teixeira, Patrícia Soares, Sofia Maximiano, Johannes Risse, Sonja Gose

To cite this article: Telmo Pereira, Ema Paulino, Mariana Rosa, Ana Pinto, Maria Teixeira, Patrícia Soares, Sofia Maximiano, Johannes Risse, Sonja Gose (2018) P99: STUDY ON THE PREVALENCE AND DETERMINANTS OF EARLY VASCULAR AGEING IN A COMMUNITY PHARMACY SETTING – PRELIMINARY RESULTS: FROM THE ASINPHAR@2ACTION (ARTERIAL STIFFNESS IN THE PHARMACIES TO (2) ACTION) PROJECT, Artery Research 24:C, 107–108, DOI: https://doi.org/10.1016/j.artres.2018.10.152

To link to this article: https://doi.org/10.1016/j.artres.2018.10.152

Published online: 7 December 2019

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. Subjects with MetS have odds ratio (OR) for both cfPWV $\geq$ 10 m/sec (OR = 1.884, 95 % CI 0.996—3.486) and CAVI $\geq$ 9 (OR = 1.810, 95 % CI 0.749—4.372).
Conclusions: The cfPWV showed the positive correlation, after adjusting it for age and sex with all the components of the MetS, however the CAVI showed the positive correlation with the arterial pressure.

P97
FAMILY PATTERNS OF CENTRAL HAEMODYNAMICS ACROSS THREE GENERATIONS IN THE MALMÖ OFFSPRING STUDY

Peter Nilsson [1], Erik Petersson Rosberg [2]
[1]*Lund University, Department of Clinical Sciences, Skane University Hospital, Jan Waldenstroms gata 15, Level 5, S-20502, Malmö, Sweden*
[2]*Lund University, Department of Clinical Sciences, Skane University Hospital, Malmö, Sweden*

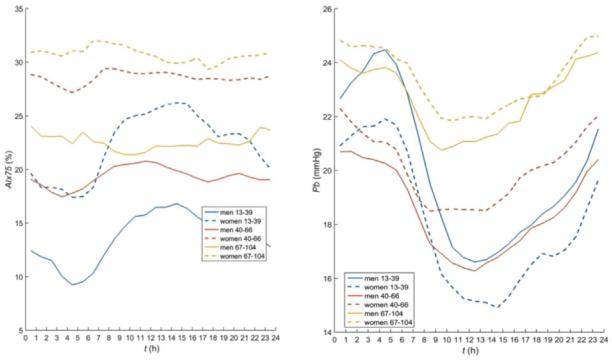
Background: Markers of central haemodynamics have in recent years emerged as promising predictors of cardiovascular disease (CVD). Central haemodynamics are affected early in the development of vascular aging and affect organs directly attached to large arteries. Carotid-Femoral pulse wave velocity (c-f PWV), Augmentation index (Aix), and central systolic blood pressure (cSBP) are variables from indirect measurements that reflect central haemodynamic and arterial stiffness. Family patterns exist [1].
Aim: To investigate if a relationship exists for patterns of central haemodynamics across three related generations, especially c-f PWV.
Methods: In all, 1131 participants from Malmö Diet Cancer Study (MDCS) and Malmö Offspring Study (MOS) were included in this study. c-f PWV was measured in grandparents and in all offspring. Correlation analyses of c-f PWV between offspring and c-f PWV in parents and grandparents were conducted. Parents and grandparents were divided in quartiles by c-f PWV and offspring c-f PWV, and cSBP means were compared with one-way ANOVA analyses. Multiple regression analyses were conducted to adjust for age, sex, BMI, SBP and fasting glucose.
Results: c-f PWV in grandchildren was positively correlated with c-f PWV in parents ($r = 0.26$, $p < 0.001$) and in grandparents ($r = 0.29$, $p < 0.001$). Offspring c-f PWV correlated significantly with parental Aix and cSBP. Parents with high c-f PWV had offspring with statistically significant higher means of c-f PWV and cSBP than parents with low c-f PWV.
Conclusion: Measures of central haemodynamic are positively correlated across three generations in a population-based study.

References
1. Fatehali AA, Gottsäter M, Nilsson PM. Family history of cardiometabolic diseases and its association with arterial stiffness in the Malmö Diet Cancer cohort. J Hypertens. 2017 Nov;35(11):2262-2267.

P98
AGE AND GENDER DIFFERENCES IN VARIABILITY OF WAVE REFLECTIONS OVER 24 HOURS: THE INTERNATIONAL 24-HOUR AMBULATORY AORTIC BLOOD PRESSURE CONSORTIUM (I24ABC)

Thomas Weber [1], Siegfried Wasserheurer [2], James Sharman [3], Cristina Giannatasio [4], Piotr Jankowski [5], Yan Li [6], Alessandro Maloberti [4], Barry Mcdonnell [7], Carmel McEniery [8], Maria Lorenza Muisan [9], Janos Nemcsik [10], Anna Paini [9], Enrique Rodilla [11], Ian Wilkinson [12], Robert Zweiker [13], Athanase Protogerou [14]
[1]*Cardiology Department, Klinikum Wels-Grieskirchen, Wels, Austria*
[2]*Austrian Institute of Technology, Vienna, Austria*
[3]*Menzies Institute for Medical Research, University of Tasmania, Australia*
[4]*University Milano-Bicocca, Milan, Italy*
[5]*Jagellonian University Krakow, Krakow, Poland*
[6]*Shanghai Institute of Hypertension, Shanghai Jiaotong University School of Medicine, Shanghai, China*
[7]*Cardiff Metropolitan University, Cardiff, UK*
[8]*Cambridge University, Cambridge, UK*
[9]*Università di Brescia, Italy*
[10]*Semmelweis University Budapest, Hungary*
[11]*Valencia (Hospital de Sagunto) Universidad CEU Cardenal Herrera, Spain*
[12]*Cambridge University, UK*
[13]*Cardiology Department, Medical University Graz, Austria*
[14]*Department of Pathophysiology Medical School National and Kapodistrian University of Athens, Athens, Greece*

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.

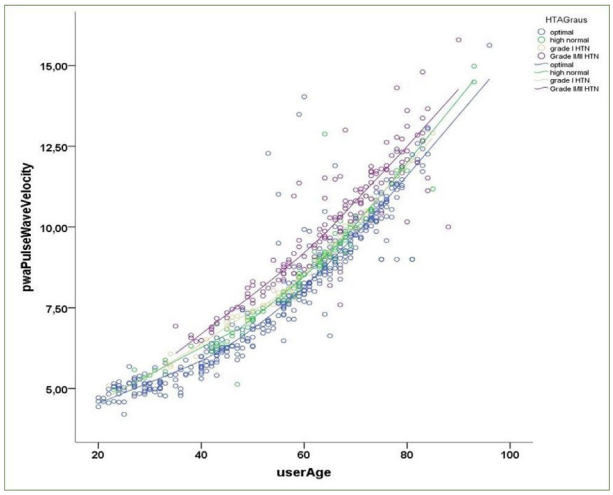


P99
STUDY ON THE PREVALENCE AND DETERMINANTS OF EARLY VASCULAR AGEING IN A COMMUNITY PHARMACY SETTING — PRELIMINARY RESULTS: FROM THE ASINPHAR@2ACTION (ARTERIAL STIFFNESS IN THE PHARMACIES TO (2) ACTION) PROJECT

Telmo Pereira [1], Ema Paulino [2], Mariana Rosa [2], Ana Pinto [2], Maria Teixeira [2], Patrícia Soares [2], Sofia Maximiano [2], Johannes Risse [3], Sonja Gose [2]
[1]*Polytechnic Institute, Coimbra Health School, Portugal*
[2]*Holon Pharmacies, Portugal*
[3]*I.E.M, GmbH, Germany*

Objective: The ASINPHAR@2action programme aims at raising awareness to early vascular ageing (EVA) through a community-based intervention. This preliminary analysis is focused on the analysis of the proportion of participants with abnormal arterial stiffness (AS) and the definition of its main determinants.
Design and method: This preliminary analysis is a cross-sectional, observational, descriptive, non-interventional study of participants enrolled in 11 communal pharmacies in Portugal (HOLON pharmacies), between April and November 2017. Blood pressure (BP) and arterial function parameters were measured with a non-invasive validated device (MOBIL-O-GRAPH, IEM®). Clinical and demographic information was gathered.

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

Celia Álvarez-Bueno [1], Iván Cavero-Redondo [2], Alba Soriano-Cano [2], Diana P. Pozuelo-Carrascosa [2], Blanca Notario-Pacheco [2], Estela Jimenez-Lopez [2]
[1]*Universidad de Castilla-La Mancha, Centro de Estudios Socio-Sanitarios, Cuenca, España*
[2]*Universidad de Castilla-La Mancha, Health and Social Research Center, Cuenca, España*

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

Marta Gomez-Sanchez [1], Leticia Gomez-Sanchez [1], Gristina Lugones-Sanchez [1], Jesus Gonzalez-Sanchez [1], Rosario Alonso-Dominguez [2], Jose I. Recio-Rodriguez [1], Olaya Tamayo-Morales [1], Manuel A. Gomez-Marcos [2]
[1]*Institute of Biomedical Research of Salamanca (IBSAL), Primary Health Care Research Unit, La Alamedilla Health Center, Salamanca, Spain*
[2]*Institute of Biomedical Research of Salamanca (IBSAL), Primary Health Care Research Unit, La Alamedilla Health Center, Health Service of Castilla y León (SACyL), Salamanca, Spain*

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 healthcare 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 Anckle 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 ± 14.3y, Females = 55.8 ± 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*age)), in males 0.075 (y=3.943 + (0.075*age)) and in women 0.071 (y=3.900 + (0.071*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

Pedro Forcada [1], Carlos Castellaro [2], Sergio Gonzalez [3], Carol Kotliar [4], Sebastian Obregon [4], Jorge Chiabaut Svane [4]
[1]*Cemic, Argentina*