



## Artery Research

ISSN (Online): 1876-4401

ISSN (Print): 1872-9312

Journal Home Page: <https://www.atlantispress.com/journals/artres>

---

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

Peter Nilsson, Erik Petersson Rosberg

**To cite this article:** Peter Nilsson, Erik Petersson Rosberg (2018) P97: FAMILY PATTERNS OF CENTRAL HAEMODYNAMICS ACROSS THREE GENERATIONS IN THE MALMÖ OFFSPRING STUDY, Artery Research 24:C, 107–107, DOI: <https://doi.org/10.1016/j.artres.2018.10.150>

**To link to this article:** <https://doi.org/10.1016/j.artres.2018.10.150>

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<sup>1</sup>, Erik Petersson Rosberg<sup>2</sup>

<sup>1</sup>Lund University, Department of Clinical Sciences, Skane University Hospital, Jan Waldenströms gata 15, Level 5, S-20502, Malmö, Sweden

<sup>2</sup>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<sup>1</sup>, Siegfried Wasserheuer<sup>2</sup>, James Sharman<sup>3</sup>, Cristina Giannatasio<sup>4</sup>, Piotr Jankowski<sup>5</sup>, Yan Li<sup>6</sup>, Alessandro Maloberti<sup>4</sup>, Barry McDonnell<sup>7</sup>, Carmel McEniery<sup>8</sup>, Maria Lorenza Muisan<sup>9</sup>, Janos Nemcsik<sup>10</sup>, Anna Paini<sup>9</sup>, Enrique Rodilla<sup>11</sup>, Ian Wilkinson<sup>12</sup>, Robert Zweiker<sup>13</sup>, Athanase Protogerou<sup>14</sup>

<sup>1</sup>Cardiology Department, Klinikum Wels-Grieskirchen, Wels, Austria

<sup>2</sup>Austrian Institute of Technology, Vienna, Austria

<sup>3</sup>Menzies Institute for Medical Research, University of Tasmania, Australia

<sup>4</sup>University Milano-Bicocca, Milan, Italy

<sup>5</sup>Jagellonian University Krakow, Krakow, Poland

<sup>6</sup>Shanghai Institute of Hypertension, Shanghai Jiaotong University School of Medicine, Shanghai, China

<sup>7</sup>Cardiff Metropolitan University, Cardiff, UK

<sup>8</sup>Cambridge University, Cambridge, UK

<sup>9</sup>Università di Brescia, Italy

<sup>10</sup>Semmelweis University Budapest, Hungary

<sup>11</sup>Valencia (Hospital de Sagunto) Universidad CEU Cardenal Herrera, Spain

<sup>12</sup>Cambridge University, UK

<sup>13</sup>Cardiology Department, Medical University Graz, Austria

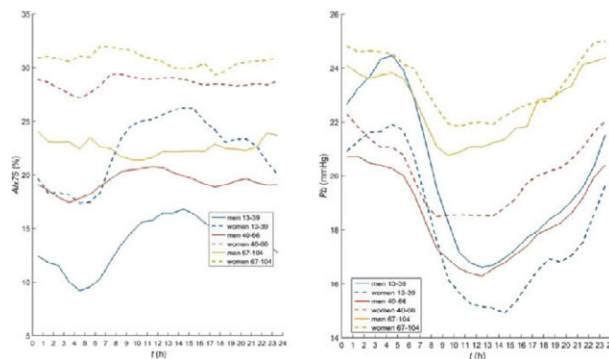
<sup>14</sup>Department of Pathophysiology Medical School National and Kapodistrian University of Athens, Athens, Greece

**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-Alx75, 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 (Alx75: 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). Alx75 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<sup>1</sup>, Ema Paulino<sup>2</sup>, Mariana Rosa<sup>2</sup>, Ana Pinto<sup>2</sup>, Maria Teixeira<sup>2</sup>, Patrícia Soares<sup>2</sup>, Sofia Maximiano<sup>2</sup>, Johannes Risse<sup>3</sup>, Sonja Gose<sup>2</sup>

<sup>1</sup>Polytechnic Institute, Coimbra Health School, Portugal

<sup>2</sup>Holon Pharmacies, Portugal

<sup>3</sup>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.