



## Artery Research

ISSN (Online): 1876-4401

ISSN (Print): 1872-9312

Journal Home Page: <https://www.atlantis-press.com/journals/artres>

---

### **P7.14: C-REACTIVE PROTEIN AND MARKERS OF ARTERIAL STIFFNESS IN HIGH CARDIOVASCULAR RISK PATIENTS**

J. Badariene, L. Ryliskyte, M. Kovaite, A. Čypiene, V. Skorniakov, V. Dzenkeviciute, A. Laucevicius

**To cite this article:** J. Badariene, L. Ryliskyte, M. Kovaite, A. Čypiene, V. Skorniakov, V. Dzenkeviciute, A. Laucevicius (2011) P7.14: C-REACTIVE PROTEIN AND MARKERS OF ARTERIAL STIFFNESS IN HIGH CARDIOVASCULAR RISK PATIENTS, Artery Research 5:4, 182–182, DOI: <https://doi.org/10.1016/j.artres.2011.10.121>

**To link to this article:** <https://doi.org/10.1016/j.artres.2011.10.121>

Published online: 14 December 2019

sphygmomanometry, central BP and aortic pulse wave velocity (PWV) were estimated by applanation tonometry. Stepwise multiple regression analysis (corrected for multiple covariates related to cardiovascular risk) was used to determine independent predictors of central and peripheral haemodynamics.

**Results.** Results from the multiregression analysis of gender-specific associations with height are presented in the table. Height was not significantly associated with aortic PWV in men or women. Height was (borderline) associated with brachial SBP in women ( $r=0.27$   $p=0.051$ ), but not in men ( $r=0.19$   $p=0.087$ ). Conversely, central SBP, augmentation index (AIx) at 75 bpm and time of reflected wave ( $T_R$ ) were independently associated with height in both men and women. Moreover, both men and women of above median height were less likely to be taking vasoactive medication (38% vs 56%;  $p<0.001$ ) or have hypertension (40% vs 53%;  $p=0.002$ ) compared to participants of below median height.

**Conclusions.** After correcting for conventional cardiovascular risk factors, taller individuals have more favourable central haemodynamics and reduced prevalence of hypertension and antihypertensive therapy compared with shorter men and women. These findings may help explain the decreased cardiovascular risk associated with being taller and have important clinical consequences regarding therapy.

Dependant variable	Gender	Beta	p-value	Adjusted R <sup>2</sup>
Brachial SBP (mmHg)	Women	-0.115	0.051	0.84
	Men	-0.096	0.087	0.82
Central SBP (mmHg)	Women	-0.172	<0.001	0.88
	Men	-0.139	0.002	0.89
AIx@75 bpm (%)	Women	-0.224	<0.001	0.33
	Men	-0.189	<0.001	0.52
Aortic PWV (m/s)	Women	0.025	0.067	0.34
	Men	0.014	0.148	0.39

#### P7.13

##### WHICH ARTERIAL STIFFNESS PARAMETER IS THE BEST PREDICTOR OF CARDIOVASCULAR MORTALITY IN HEMODIALYSIS PATIENTS?

Othmane T. El Hadj<sup>1</sup>, O. Cseperekát<sup>1</sup>, J. Nemcsik<sup>2</sup>, J. Egresits<sup>2</sup>, M. Szathmári<sup>1</sup>, A. Tislér<sup>1</sup>

<sup>1</sup>1st Department of Internal Medicine, Semmelweis University, Budapest, Hungary

<sup>2</sup>Department of Angiology, St. Imre Teaching Hospital, Budapest, Hungary

According to previous studies different parameters characterize arterial stiffness relate to cardiovascular mortality in patients on haemodialysis. However, its relative prognostic value and the optimal time of measurement have not previously been examined in one cohort.

The carotid-femoral pulse wave velocity (PWV), the carotid augmentation index (AI), the carotid pulse pressure (CPP) and the carotid-brachial pulse pressure amplification (AMP) were determined in 98 patients before and after haemodialysis procedure. Patients were followed for 29 months (median; range 1–34) and the association of these parameters with the risk of cardiovascular mortality was assessed using log-rank tests and Cox proportional hazards regression.

During follow-up, 25 patients died of cardiovascular causes. Increasing pre- and postdialysis PWV tertiles and decreasing predialysis AMP tertiles were significantly related to cardiovascular mortality ( $p = 0.012$  and  $0.011$  for PWV, respectively; and  $<0.001$  for AMP). Neither the AI nor CPP was related to cardiovascular mortality. The adjusted hazard ratios for 1 m/s higher pre- and postdialysis PWV were 1.24 (1.07–1.44) and 1.17 (1.06–1.28), respectively. The hazard ratio for 10% lower predialysis AMP was 1.41 (1.03–1.92). When included in the same model, both predialysis PWV and AMP remained significantly associated with cardiovascular mortality.

Among different stiffness parameters, PWV is consistently related to cardiovascular mortality, irrespectively of the timing of measurement. Predialysis AMP seems to provide additional prognostic information.

Supported by the Hungarian Society of Hypertension, Hungarian Society of Nephrology, Hungarian Nephrology Foundation.

#### P7.14

##### C-REACTIVE PROTEIN AND MARKERS OF ARTERIAL STIFFNESS IN HIGH CARDIOVASCULAR RISK PATIENTS

J. Badariene<sup>1,2</sup>, L. Ryliskytė<sup>1,2</sup>, M. Kovaite<sup>1,2</sup>, A. Čypiene<sup>1,2</sup>, V. Skorniakov<sup>1,2</sup>, V. Dzenkeviciute<sup>1,2</sup>, A. Laucevicus<sup>1,2</sup>

<sup>1</sup>Vilnius University Hospital Santariskiu Klinikos, Vilnius, Lithuania

<sup>2</sup>Vilnius University, Vilnius, Lithuania

**Introduction:** The aim of the study was to investigate the relationship between C-reactive protein (CRP) and markers of arterial stiffness.

**Methods:** We have analyzed the data of 3163 high cardiovascular risk patients selected from a larger cohort of patients inspected in Vilnius University Hospital Santariskiu Klinikos primary prevention cardiovascular unit. The criteria for inclusion was low value of CRP ( $<5$  mg/l). The mean age of the selected sample was 54.03±6.10. Almost two thirds of them were females (65.7%). We divided all patients into two groups. The first group consisted of patients having CRP below 2 mg/l ( $n=2041$ ), whereas the second group consisted of patients having CRP no less than 2 mg/l ( $n=1122$ ). After that, these groups were compared with respect to the following markers of arterial stiffness: augmentation index (AIx), flow mediated dilatation (FMD), femoral and brachial pulse wave velocities (PWV (femoral), PWV (brachial)). Only femoral PWV significantly differed between the groups: (8.69±2.68 (CRP<2 mg/dl) vs 9.00±1.59 (CRP≥2 mg/dl);  $p=0.003$ ), and there were no differences with respect to other markers. Division of patients into groups with CRP<3 mg/l ( $n=2623$ ) and CRP≥3 mg/l ( $n = 540$ ) yielded the same results. There was a significant difference only with regard to femoral PWV (8.74±2.45 (CRP<3) vs. 9.12±1.56 (CRP≥3);  $p=0.004$ ).

**Results:** Our study suggests that there is a moderate relationship between CRP and arterial stiffness and it is best diagnosed by alterations of femoral PWV.

#### P7.15

##### MEASUREMENT OF ARTERIAL STIFFNESS IN THE PORTUGUESE

##### POPULATION: THE GUIMARÃES STUDY (STUDY TO DETERMINE THE CARDIOVASCULAR RISK OF THE POPULATION OF GUIMARÃES/VIZELA: PREVALENCE OF ARTERIAL STIFFNESS AND EARLY VASCULAR AGING SYNDROME)

P. G. Cunha<sup>1,3</sup>, P. N. Oliveira<sup>2</sup>, J. Cotter<sup>1,3</sup>, N. Sousa<sup>3</sup>

<sup>1</sup>Center for the Research and Treatment of Arterial Hypertension and Cardiovascular Risk, CHAA / Minho University, Guimarães, Portugal

<sup>2</sup>Departamento de Estudo de Populações, Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Oporto, Portugal

<sup>3</sup>Life and Health Science Research Institute (ICVS), School of Health Science, University of Minho, Braga, Portugal

We observed 1104 subjects of the Portuguese population coming from two adjacent cities in the north: Guimarães and Vizela. They were randomly selected from the population to be included in a cohort representative of the age and gender distribution. We evaluated their age, sex, clinical history, blood pressure (BP) (mean of three measurements), height, weight, lipidic profile, fasting glucose, HbA1c, serum creatinine, microalbuminuria (occasional sample); we also performed Pulse Wave Velocity (PWV) measurements (Sphygmocor®).

These 1104 subjects (56,4% females), had a mean global age of 47,6 years (18 – 94); 42% had hypertension, 10,7% had Diabetes, 80% had lipidic profile abnormalities, 3,1% had GFR < 60ml/min and 16,1% had microalbuminuria. The mean brachial systolic BP was 131,3 mmHg (84 to 243) and the mean brachial diastolic BP was 76,7 mmHg (44 to 128); The average BMI was 26,8 kg/m<sup>2</sup> (16,8 to 46,2).

The mean PWV value recorded in the population was 7,4 m/sec (4,1 to 18); mean PWV values were distributed as follows, according to the different age classes: 18 to 30 years – 6,1 m/sec (4,1 to 9,7); 31 to 40 years – 6,6 m/sec (4,2 to 13,6); 41 to 50 years – 7,5 m/sec (4,7 to 14,1); 51 to 60 years – 7,5 m/sec (4,6 to 12,3); 61 to 70 years – 9,0 m/sec (4,5 to 18); 71 to 80 years – 9,4 m/sec (5 to 15,4); 81 to 90 years – 10,5 m/sec (6,7 to 15,7). These are, to our knowledge, the first arterial stiffness measurements performed on a population based cohort in Portugal.

#### P7.16

##### ASSESSMENT OF CENTRAL HAEMODYNAMICS AND ARTERIAL STIFFNESS IN THE COMMUNITY – ARE WE THERE YET?

D. Nunan<sup>1</sup>, S. Wassertheurer<sup>2</sup>, D. Lasserson<sup>1</sup>, B. Hametner<sup>2</sup>, S. Flemming<sup>1</sup>, A. Ward<sup>1</sup>, C. Heneghan<sup>1</sup>