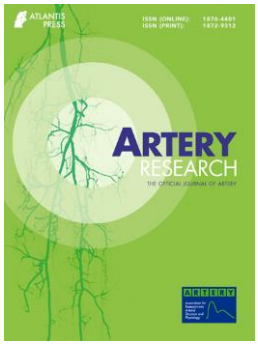

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1.1: DIABETES AND CENTRAL BLOOD PRESSURE IN CORONARY PATIENTS

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1.1
DIABETES AND CENTRAL BLOOD PRESSURE IN CORONARY PATIENTS

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Background: Relative (represented by pulsatility) as well as absolute (pulse pressure) changes of central blood pressure (BP) were shown to predict cardiovascular (CV) complications in coronary patients. However, the influence of diabetes (a major CV risk factor) on the values of BP-derived indices is unknown.
Methods: The study group consisted of 1239 patients with coronary artery disease (988 men and 251 women mean age: 58.6±10.1 years) undergoing coronary angiography. Demographic and clinical information as well as cuff brachial and invasive ascending aortic BP during catheterization were obtained. Diabetes was defined as being treated for diabetes or having fasting glucose ≥ 7.0mmol/l. We defined pulsatility as the ratio of pulse pressure (PP) to mean BP and pulsatility index as the ratio of PP to diastolic BP. Multivariate regression analysis was used to assess the effect of diabetes on the values of BP-derived indices.
Results: Diabetes was present in 222 (17.9%) patients. Among them 84 (37.8%) were prescribed insulin, 96 (43.2%) oral drugs, and 42 (18.9%) only diet. β-blockers were prescribed to 82.4% vs 87.2% (p=NS), ACE-inhibitors/sartans to 75.2% vs 57.6% ($p<0.05$), Ca blockers to 21.2% vs 15.7% ($p<0.05$), diuretics to 41.0% vs 20.1% ($p<0.05$), for diabetics and non-diabetics respectively. The effect of diabetes on central pressure is presented in the table. Diabetes was not independently related to the value of peripheral BP-derived indices.
Conclusion: Diabetes is independently related to the higher values of central PP, pulsatility and pulsatility index. This may contribute to higher CV risk in diabetics.

Table 1

BP — related variables	The mean difference between diabetics and non-diabetics (95% CI)	
	Univariate	Multivariate*
Systolic blood pressure [mmHg]	4.37 (1.03 - 7.70)	2.28 (-1.22 - 5.78)
Diastolic blood pressure [mmHg]	-1.16 (-2.82 - 0.50)	-1.11 (-2.98 - 0.76)
Mean blood pressure [mmHg]	0.66 (-1.34 - 2.66)	0.01 (-2.22 - 2.23)
Pulse pressure [mmHg]	5.53 (2.89 - 8.17)	3.39 (0.80 - 5.99)
Pulsatility	0.05 (0.03 - 0.08)	0.03 (0.01 - 0.06)
Pulsatility index	0.09 (0.05 - 0.13)	0.06 (0.02 - 0.10)

* Age, sex, brachial systolic and diastolic BP, ejection fraction, extent of coronary atherosclerosis, NYHA class, heart rate, creatinine level, risk factors and treatment are included in the model.

1.2
HOW DOES OBESITY INFLUENCE ARTERIAL STIFFNESS IN ASYMPTOMATIC ADULTS?

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Central obesity is an important cause of cardiovascular disease. It's well-known that aortic pulse wave velocity (aoPWV) is a strong predictor of cardiovascular events. However the potential correlation between fat accumulation and increased arterial stiffness is poorly investigated. The aim of this study was to assess the association between obesity and aortic stiffness in normotensive adults.
Patients and methods: AoPWV was assessed in apparently healthy, asymptomatic patient population using an invasively validated oscillometric device (TensioMed Arteriograph). AoPWV-values were stratified according to their BMI-values into three categories: normal weight (BMI<25), overweight (BMI: 25-30) and obese (BMI>30). Data are reported as mean and SD for continuous variables. For data comparison, a Student's t-test was used with a significance level of 0.05. Statistical analysis was carried out with IBM SPSS 20 statistical software.
Results: 9076 normotensive individuals (3749 male — 41.3%, and 5327 female — 58.7%) without any antihypertensive, antidiabetic or antilipemic medication were included into the analysis with a mean age of 48.2±14.1 yrs. 4374 individuals were lean (48%), 3346 were overweight (37%) and 1353 were obese (15%) according to BMI-values. Mean aoPWV of lean subjects was significantly better than overweight or obese individuals (8.6±2.41 m/s, 9.3±2.43 m/s ill. 9.8±2.52 m/s respectively $p<0.05$).
Conclusions: This is the first population-based study to report the effect of weight on vascular stiffness measured by oscillometric method in adults with wide age range. Our results confirmed that overweight and obesity are major determinants of arterial stiffness. The revealed association suggests that weight gain begins to influence on the vascular system at a very early stage of vascular aging. Nevertheless the effect of weight loss on arterial function needs to be further investigated.

1.3
CENTRAL PRESSURES AND WAVE REFLECTIONS ARE INDEPENDENTLY ASSOCIATED WITH MAJOR ADVERSE CARDIOVASCULAR EVENTS IN MEN WITH ERECTILE DYSFUNCTION

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Purpose: Erectile dysfunction (ED) confers an independent risk for cardiovascular events and total mortality. Central pressures and wave reflection