



## Artery Research

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### **P.023: INCREASED CARDIOVASCULAR RISK IN FIRST-DEGREE RELATIVES (WITHOUT ABDOMINAL AORTIC ANEURYSM, AAA) TO AAA PATIENTS?**

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hypertension (HT). The examination of arterial stiffness in this group has a chance to become a routine procedure. This indicates how important will be the choice of the optimal method for PWV measurement.

**The aim** of this study was to compare aortic PWV obtained in patients with primary HT using three different types of devices: Complior<sup>®</sup>, SphygmoCor<sup>®</sup> and Arteriograph.

**Method:** In 64 pts with mild or moderate primary HT (age  $54 \pm 13.6$  yrs), 39 males and 25 females we measured PWV using the three aforementioned devices at the same clinical visit.

**Results:** PWV obtained with Complior<sup>®</sup> ( $10.2 \pm 2.3$  m/s), SphygmoCor<sup>®</sup> ( $8.1 \pm 1.2$  m/s) and Arteriograph ( $8.6 \pm 1.8$  m/s) were significantly different (ANOVA,  $p < 0.001$ ), due to higher Complior-PWV values than those obtained with the remaining devices. A comparison of such PWV determinants as traveled distance and transit time revealed a significant difference in distances between the methods, but no differences in transit times. The Bland-Altman analysis for each pair of devices indicated that PWV values were measured with similar accuracy when considering the mean of differences.

**Conclusions:** The methodological differences in traveled distance, but not in transit time measurement are responsible for higher pulse wave velocity obtained with the Complior than SphygmoCor and Arteriograph devices. Taking into account this differences, all devices are accurate and valuable for PWV measurement.

### P.023

#### INCREASED CARDIOVASCULAR RISK IN FIRST-DEGREE RELATIVES (WITHOUT ABDOMINAL AORTIC ANEURYSM, AAA) TO AAA PATIENTS?

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**Background:** Patients affected by AAA have a tendency to generalized dilatation, increased vascular stiffness and cardiovascular risk. There is a pronounced genetic predisposition for AAA, but it is unknown whether first-degree relatives without AAA, have a generalized dilating diathesis, or defect arterial wall mechanics. The aim of the study was to investigate the arterial diameter and wall properties in first-degree relatives without AAA, and compare them with controls without a family history of AAA.

**Methods:** 71 non-smoking relatives to patients with AAA (41m/30f; 41-70years) and 66 age and sex-matched controls were included. The abdominal aorta, carotid, common femoral, and the popliteal artery were investigated by ultrasound.

**Results:** No arterial dilatation was found, but rather a tendency of narrowing. The relatives had higher heart rate (HR) ( $P < .01$ ) and diastolic blood pressure (DBP) than controls. The males had also higher systolic blood pressure (SBP). After adjusting for HR, the difference in SBP in males disappeared but the DBP remained increased ( $P < .05$ ), and MAP became increased in males ( $P < .05$ ).

The distensibility coefficient (DC) and the compliance coefficient (CC) were decreased in all arteries in the males but only in the aorta in females ( $P < .05$ ). After adjusting DC and CC for MAP and HR, stiffness was normalized.

**Conclusion:** No general arterial dilatation in AAA relatives without aortic aneurysmal disease can be found, supporting the hypothesis that the dilating diathesis is linked to the aneurysmal manifestation in the abdominal aorta. Although the threat of aneurysmal dilatation and rupture seems to be lacking, BP, HR and arterial stiffness are increased, indicating raised cardiovascular risk in this population.

### P.024

#### CARDIAC FUNCTION, LARGE ARTERIES PROPERTIES AND MORTALITY IN OLDER PATIENTS WITH ATHEROSCLEROSIS

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**Objective:** We assessed predictive power of large arteries properties for mortality among older subjects with symptomatic atherosclerosis.

**Methods:** We assessed 100 patients above 70 years of age with present atherosclerosis, stabilised at the time of assessment. Follow up averaged 31 months. Apart from standard clinical examination, echocardiography and assessment of large arteries by the Sphygmocor device were performed. The vital status of subjects was obtained from National health registry.

**Results:** During follow up 31 patients died. Survivors and non-survivors did not differ significantly in prevalence of standard risk factors, as well as in the arterial properties. Left heart insufficiency was more frequent in non-survivors.

	Survivors	Non-survivors	P value
Systolic Blood Pressure (mmHg)	141,3 ± 22,0	135,9 ± 21,5	0,4317
Pulse Wave Velocity (m.s <sup>-1</sup> )	13,2 ± 4,6	12,9 ± 3,5	0,7401
Peripheral Augmentation Index (%)	87,7 ± 15,2	77,7 ± 31,4	0,5899
Central Augmentation Index (%)	142,7 ± 21,0	133,2 ± 38,2	0,9951
Heart Failure	31 ( 44,9 %)	23 ( 74,2 %)	0,0197
Ejection Fraction of Left Ventricle (%)	61,9 ± 13,0	55,1 ± 14,9	0,0461

**Summary:** In patients with present atherosclerosis large arteries properties lost partially its prognostic value, as well as standard risk factors. Prognosis was mainly determined by the level of left ventricle dysfunction.

### P.025

#### INCREASED ARTERIAL STIFFNESS AMONGST HEALTHY SOUTH ASIANS IN THE UNITED KINGDOM IN THE ABSENCE OF RAISED BLOOD PRESSURE

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**Background:** The pathophysiology of increased coronary heart disease (CHD) risk affecting South Asians(SA) living in Britain remains unclear. For a given blood pressure SA have a higher risk of CHD than the indigenous European Caucasian(EC). We hypothesised that measures of arterial stiffness would be greater amongst healthy SA compared to EC counterparts specifically ,in the absence of raised blood pressure and established CHD risk indices.

**Methods:** Arterial stiffness was measured by digital volume pulse photoplethysmography(Micromedicals PCA 2) in 90 healthy SA (and compared to age-gender matched 62 EC in a temperature controlled environment using a standard protocol.

**Results:** SA and EC's were comparable for CVD risk profile (Table 1). South Asians had an increased Stiffness Index compared to European Caucasians ( $9.43(0.22)$  vs.  $8.53(0.23)$  m/s,  $P = 0.007$ ). In linear regression waist hip ratio and mean blood pressure were independent predictors of arterial stiffness ( $\beta = 0.26$ ,  $P = 0.03$ ).

**Conclusion:** South Asians have an increased wave reflection and systemic arterial stiffness compared to European Caucasians. Pathophysiological differences in vessel wall characteristics in South Asians may explain their increased susceptibility to higher cardiovascular risk and further work is warranted.

Risk factor Mean (SD)	South Asian (n=90)	European Caucasian (n=62)	P Value
Mean age (years)	45.21(13.45)	46.76(11)	0.13
Body Mass Index(BMI)Kg/m <sup>2</sup>	25.9(3.2)	27.4(4.5)	0.08
Waist Hip Ratio(WHR)	0.94(0.08)	0.93(0.08)	0.53
Systolic blood pressure(mmHg)	134.56(20.3)	135.31(15.33)	0.82
Diastolic blood pressure(mmHg)	83.64(12.35)	83.58(10.09)	0.97
Serum cholesterol (mmol/l)	4.45(1.4)	4.66(0.72)	0.94
Fasting blood sugar(mmol/l)	4.99(1.4)	4.56(0.92)	0.43

P values using unpaired ttest comparing two groups

### P.026

#### CLINICAL AND VASCULAR EFFECTS OF SWITCHING PATIENTS WITH CORONARY ARTERY DISEASE TO NEBIVOLOL

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The problem of inadequate efficacy of standard antianginal therapy in patients with stable angina requires new pharmacotherapeutic solutions.