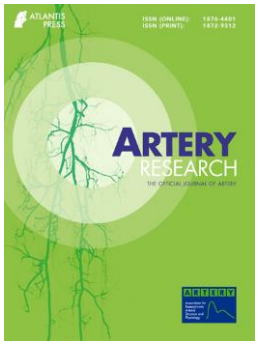

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P11.07: 24 HOUR AMBULATORY CENTRAL BP MEASUREMENT REVEALS SIGNIFICANT VARIATION IN PULSE PRESSURE AMPLIFICATION BETWEEN DAY AND NIGHT

J.C. Smith, L. Day, J. Woodcock-Smith, K. Miles, M. Watts, C.M. McEniery, I.B. Wilkinson

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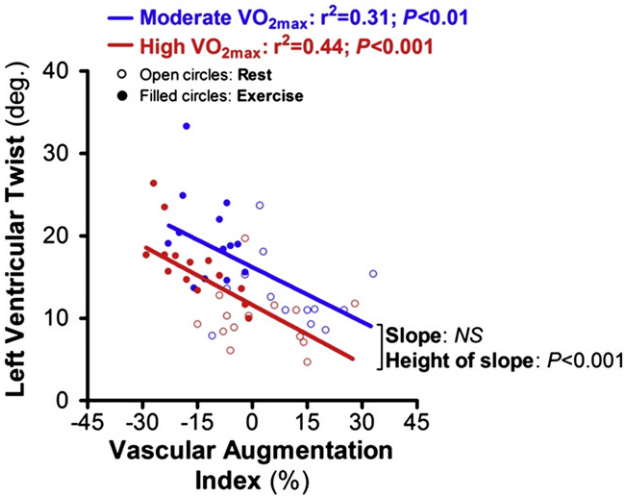
variables between both groups were determined with two-way ANOVA. Relationships between LV twist and AIx were identified using Pearson's product moment correlation.
Results: Heart rate and blood pressure did not differ between the two groups at rest or during exercise ($p>0.05$). While LV twist and AIx were significantly related in both the moderate and high fitness group (r^2: 0.31 and 0.44, respectively, $p<0.01$), the high $VO_{2\ max}$ group had a significantly lower LV twist for the same AIx ($p<0.001$, see figure).
Conclusions: In young healthy individuals, LV twist and AIx are significantly related. However, the lower LV twist in individuals with high aerobic fitness cannot be explained by AIx, heart rate or blood pressure and, therefore, may indicate a previously unknown component of LV adaptation related to aerobic fitness.



P11.07
24 HOUR AMBULATORY CENTRAL BP MEASUREMENT REVEALS SIGNIFICANT VARIATION IN PULSE PRESSURE AMPLIFICATION BETWEEN DAY AND NIGHT

J. C. Smith, L. Day, J. Woodcock-Smith, K. Miles, M. Watts, C. M. McEniery, I. B. Wilkinson
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Introduction: Brachial ambulatory blood pressure monitoring (ABPM) provides greater predictive value for cardiovascular events than clinic blood pressure (BP) readings. However, systolic BP varies throughout the arterial tree, such that brachial BP readings do not reliably indicate central (aortic) pressure. As yet, 24 hour ambulatory central BP, and central to peripheral pressure amplification have not been described.
Methods: 24 hour ambulatory brachial and central BP monitoring was undertaken in 122 healthy, treatment-naive individuals (71 females), using the mobilograph device (IEM, Germany). The mean age was 48±20 years (range 18-80 years). Ambulatory measurements were made every 30 minutes during the day and every 60 minutes overnight. Clinic (seated) BP was also assessed, prior to undertaking ambulatory measurements.
Results: Mean clinic (seated) BP was 130±21/79±11mmHg. During the daytime, mean ambulatory BP was 125±14/80±12mmHg (brachial) and 115±14/82±12mmHg (central). During the nighttime, both brachial (115±16/70±12mmHg) and central (107±15/71±11mmHg) ambulatory BP fell significantly ($P<0.001$ for all comparisons, Figure 1). However, the ratio between brachial and central pulse pressures (pulse pressure amplification) was significantly higher during the daytime (1.38±0.15) compared with nighttime (1.23±0.11, $P=0.002$).
Conclusions: Monitoring of ambulatory central BP reveals significant variation in pulse pressure amplification over a 24 hour period. These data indicate that ambulatory central and brachial BP are differentially affected by the activities of daily living. Further studies are required to investigate whether the prognostic value of ambulatory central BP is superior to ambulatory brachial BP.

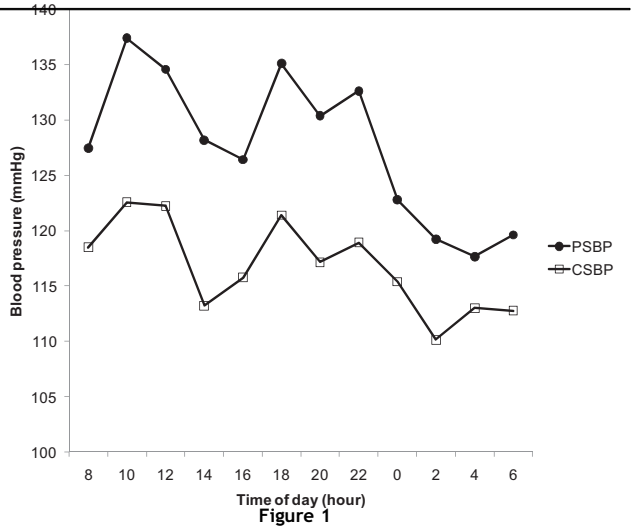

Figure 1

P11.08
THE COMPARISON OF ENOS MUTATION 894G>T AND ITS RELATIONSHIP WITH ARTERIAL STIFFNESS

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Acknowledgement: Grant ID 2246/2009
Background: Pulse wave velocity is a strong predictor of cardiovascular events and mortality. It is known that NO can influence arterial stiffness through vascular tone regulation. The presence of eNOS mutations can influence arterial stiffness. Purpose of the study was to investigate the relation between 894G>T mutation and arterial stiffness.
Material and method: The study included 70 subjects (63.4% women), in whom the 894G>T polymorphism (the PCR method) and arterial stiffness (using the TensioMedTMArteriograph) were determined. The mean age of the subjects was 59.81± 11.01 years, without significant sex differences.
Results: The distribution depending on the presence of genotypes was for the 894GT mutation as follows: 42.3% of the subjects were negative (GG), 40.8% heterozygous (GT) and 16.9% homozygous (TT). No significant differences were found between sexes (women vs men) regarding the presence of genotypes: GG 44.4% vs 38.5%, GT 44.4% vs 34.6%, TT 11.1 vs 26.9%, p=NS. Globally, there was no significant difference of the PWVAo values between homozygous and heterozygous or negative patients: 9.6±1.53m/sec in TT patients vs 10.36 ±1.79m/sec in GT patients vs 10.10±1.98 m/sec in GG patients(p=NS). There were no significant differences between the values of Aixb, AixAo, PP according to GG vs GT vs TT genotype (generally or per sexes), but homozygous patients (TT) had higher Aixb, PP values, respectively.
Conclusion: In the present study, the presence of the TT homozygote state was not associated with the increase of PWVAo, but seems to determine Aixb and PP increases.

		Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
PWVAo	GG	10.10	1.98	9.32	10.87
	GT	10.36	1.79	9.67	11.04
	TT	9.60	1.53	8.56	10.63
Aixb	GG	-1.80	30.34	-13.13	9.52
	GT	3.65	29.79	-7.67	14.98
	TT	8.80	33.67	-13.81	31.43
AixAo	GG	34.22	17.95	27.51	40.92
	GT	40.52	16.26	34.33	46.70
	TT	35.72	18.66	23.86	47.58
PP	GG	52.20	12.71	47.45	56.94
	GT	54.82	15.38	48.97	60.68
	TT	56.25	14.09	47.29	65.20