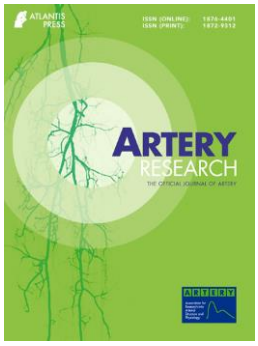

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P2.16: PULSE WAVE VELOCITY ASSESSED BY NON-INVASIVE TONOMETRY, IN ANESTHETIZED GÖTTINGEN MINIPIGS

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left ventricular influence the carotid strain. Change in longitudinal carotid strain might serve as an early marker of cardiovascular disease.

Table 1 Peak Longitudinal (L) and Circumferential (C) Strain (S) and Strain Rate (SR), Longitudinal (L D) and Radial (R D) Displacement of carotid arteries

L S, %	L SR	L D, mm	C S, %	C SR	RD, mm
10.8±4.1	1.5±0.6	0.45±0.1	7.8±1.7	0.8±0.17	0.27±0.6

Data is expressed as mean ± SD; L S — peak Longitudinal Strain, L SR — peak Longitudinal Strain Rate, L D — peak Longitudinal Displacement, C S — peak Circumferential Strain C SR — peak Circumferential Strain Rate, R D — peak Radial Displacement

Table 2 Independent relations of longitudinal carotid strain with arterial stiffness and cardiac parameters

	β	*p*
Carotid Stiffness β	**-0.49**	**0.03**
Aortic Stiffness, β	**-0.42**	**0.04**
LV fractional shortening	**0.38**	**0.048**
relative LV posterior wall thickness	0.19	0.16
ventricular septum thickness	0.17	0.24
E/A	**0.40**	**0.045**

P2.14
COMPARISON OF AGE-RELATED CENTRAL AORTIC BLOOD PRESSURE PARAMETERS USING TWO SPHYGMOCOR TECHNIQUES

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Background. Central aortic blood pressure (CBP) parameters are increasingly proved to be stronger predictors of cardiovascular outcomes than peripheral blood pressure parameters. Aortic stiffness, which increases with age, alters these parameters. The aim of this study was to compare the CBP parameters measured by two SphygmoCor techniques: tonometric (Classic) and cuff-based (XCEL) with respect to age.
Methods: 186 individuals (mean age 68±45 years, range 21-93 years, 97 males) from general cardiac clinic patients were recruited. Tonometric and cuff-based assessment of central systolic blood pressure (cSBP), central diastolic blood pressure (cDBP), central pulse pressure (cPP) and augmentation index normalised to a heart rate of 75 beats/min (Alx75) was made in a randomized fashion after a period of seated acclimatization. Statistical analysis was performed by means of Analysis of Covariance (ANCOVA) with respect to device and age, with an interaction term between device and age to detect age dependent differences between devices.
Results. All parameters changed significantly with age ($p<0.001$). There was no significant difference between all parameters estimated by the two techniques (Table). The interaction term of device and age was not significant for any parameter, indicating that the devices did not differ with respect to age.
Conclusion. The new cuff-based SphygmoCor technique used for evaluation of CBP parameters in a clinical environment is a convenient and accurate proxy for the previous tonometric technique regardless of patient age.

				p		
Parameter	Device	Slope	Intercept	Device	Age	Age*device
cSBP/age	Classic	0.28±0.07	97±5	0.49	<0.001	0.58
(mmHg/yr)	XCEL	0.23±0.06	101±4			
cDBP/age	Classic	-0.16±0.04	82±3	0.66	<0.001	0.99
(mmHg/yr)	XCEL	-0.16±0.04	84±3			
cPP/age	Classic	0.45±0.06	14±4	0.55	<0.001	0.42
(mmHg/yr)	XCEL	0.39±0.05	17±3			
Alx75/age	Classic	0.22±0.04	6±3	0.13	<0.001	0.38
(%/yr)	XCEL	0.16±0.06	14±4			

P2.15 Withdrawn by author

P2.16
PULSE WAVE VELOCITY ASSESSED BY NON-INVASIVE TONOMETRY, IN ANESTHETIZED GÖTTINGEN MINIPIGS

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Introduction: Assessment of pulse wave velocity (PWV) is recognized as a marker of arterial stiffness within human medicine. Non-invasive evaluation of arterial structural changes in relation to atherosclerosis in porcine models of cardiovascular disease, would be valuable in longitudinal assessment of pathophysiological changes, e.g. in relation to drug effect.
Objective: To evaluate the feasibility and reproducibility of PWV in anesthetized male Göttingen minipigs.
Method: Animals were anesthetized every second day (three days in total) using constant intravenous infusion of ketamine and midazolam. Mean arterial blood pressure (MAP) assessed by oscillometry and heart rate (HR) were registered. PWV was calculated as the distance between the carotid and femoral artery divided by the time delay of pressure pulses, assessed by aplanation tonometry and simultaneously recorded electrocardiography (ECG).
Results: MAP was 87.6 mmHg ± 11.9 (mean ± SD), 80.5 mmHg ± 12.7 and 84.3 mmHg ± 19.4 at the three examinations respectively, and HR was 77 beats per minute (BPM) ± 12, 71 BPM ± 8 and 74 BPM ± 9. PWV was 6.3 m/s ± 2.19, 5.7 m/s ± 0.6 and 5.9 m/s ± 1.4, respectively. There was no significant effect of examination day, MAP, or HR on PWV, evaluated by analysis of variance. Mean inter-examination coefficient of variation was 16%.
Conclusion: Assessment of PWV is feasible in anesthetized Göttingen minipigs, and therefore could have perspectives in a porcine model of atherosclerosis. Furthermore, reference values from this study corresponded to PWV values obtained from infants or young human individuals.

P2.17
ECHOGENICITY OF THE COMMON CAROTID ARTERY INTIMA-MEDIA COMPLEX IN STROKE

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Introduction: Grey scale median of the carotid artery intima-media complex (IM-GSM) is a recently introduced measurement thought to reflect the composition of the arterial wall. Carotid artery intima-media thickness (IMT) has been shown to be a predictor of a future stroke incidence, but the relationship between IM-GSM and stroke is unclear. This study therefore examined IM-GSM in individuals with stroke.
Methods: Fifty-seven healthy individuals (CONTROL: 64.1±7.8yrs, 26F) and 96 individuals with cerebrovascular disease (either stroke or transient ischemic attack) diagnosed within 3 months before the study visit (CRVD: 68.6±9.8yrs, 30F) were included in this study. Common carotid artery diameter and far-wall IMT images were obtained using a Doppler ultrasound machine. IMT and IM-GSM were analyzed using semi-automated edge-detection software.
Results: Carotid diameter and IMT were greater in CRVD than CONTROL (all $p<0.005$). IM-GSM was significantly higher in CONTROL than CRVD (119.5±27.3au vs 105.8±30.3au, $p<0.01$). IMT and IM-GSM were similar between the carotid arteries of the affected and unaffected sides in CRVD. In a pooled data set, there was a significant reduction in IMT ($r=-0.53$) and wall-to-lumen ratio (WLR; $r=-0.50$) with the increase in the quartiles of IM-GSM (both $p<0.001$).
Conclusion: These results demonstrate that IM-GSM was lower in CRVD than CONTROL, and the level of IM-GSM appeared to be systemic in CRVD. The inverse association observed between IMT, WLR and IM-GSM may suggest an alteration in carotid artery wall composition with the degree of arterial remodelling.

P2.18
TOWARDS COMPUTATIONAL DIAGNOSIS OF CORONARY ARTERY DISEASE

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