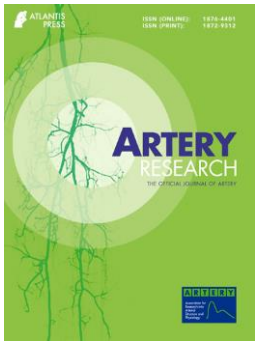

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P6.02: INCREASED ARTERIAL STIFFNESS IS ASSOCIATED WITH SYSTOLIC BLOOD PRESSURE VARIABILITY IN OLDER INDIVIDUALS

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79.1±11 mmHg and a history of a cerebrovascular event have been enrolled. Wall-to-lumen ratio of retinal arterioles was assessed *in vivo* using scanning laser Doppler flowmetry (Heidelberg Retina Flowmetry, Heidelberg, Germany). Pulse wave analysis to determine aortic augmentation index and aortic augmentation pressure were performed *in vivo* using applanation tonometry (SphygmoCor, AtCor Medical PtyLtd, NSW 2114, Australia).
Results: Pulse pressure ($r=0.593$, $p=0.025$), but not systolic, diastolic or mean arterial pressure was related to wall-to-lumen ratio of retinal arterioles. Age, body mass index, waist circumference as well as parameters of glucose and lipid profile did not reveal a relation to wall-to-lumen ratio of retinal arterioles. Aortic augmentation index ($r=0.546$, $p=0.043$) and aortic augmentation pressure ($r=0.559$, $p=0.038$) were both related to wall-to-lumen ratio of retinal arterioles even when aortic augmentation index and aortic augmentation pressure were corrected for a mean heart rate of 75 bpm ($r=0.572$, $p=0.032$ and $r=0.616$, $p=0.019$; respectively).
Conclusion: In our cohort of patients with a history of a cerebrovascular event wall-to-lumen ratio of retinal arterioles was related to alterations of aortic pulse wave thereby indicating parallel vascular changes in the micro- and macrovasculature.

P6.02
INCREASED ARTERIAL STIFFNESS IS ASSOCIATED WITH SYSTOLIC BLOOD PRESSURE VARIABILITY IN OLDER INDIVIDUALS

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Background: The prognostic significance of the variability in systolic blood pressure (sBP) for cardiovascular events has been highlighted recently. Although increased arterial stiffness has been proposed as a potential mechanism, the relationship between sBP variability and arterial stiffness has not been examined directly. Therefore, the aim of the current study was to determine whether increased arterial stiffness is associated with increased blood pressure variability based on 24hour ambulatory blood pressure monitoring (ABPM) in a subset of older individuals from the Anglo-Cardiff Collaborative Trial.
Methods: Aortic stiffness was assessed by measuring the carotid-femoral pulse wave velocity (aPWV) in individuals aged over 50 years. Subjects also underwent 24 hour ABPM.
Results: Data concerning 24 hour ABPM and arterial stiffness were available in 204 individuals with an average age of 67±6years. When individuals were grouped according to tertiles of aPWV there was a significant increase in the variability of day sBP from the lowest to highest tertile (12.52±3.72 v 14.23±3.99, $P<0.001$). However, this relationship was not apparent for night sBP (11.86±4.49 v 12.16±4.61, $P=0.4$). In stepwise linear regression analyses, aPWV was independently associated with day sBP variability after adjustment for age, gender, mean day sBP and medication. However, only mean night sBP was associated with night time sBP variability.
Conclusion: These data support the hypothesis that individuals with increased sBP variability have elevated arterial stiffness. These data require confirmation in a large population, with outcome data.

P6.03
EVOLUTION OF ARTERIAL STIFFNESS AFTER KIDNEY TRANSPLANTATION IN PATIENTS WITH END-STAGE RENAL DISEASE

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Background: Increased arterial stiffness (AS) is a major determinant of cardiovascular complications in end-stage renal disease (ESRD) patients. Little is known about AS evolution after renal transplantation. The aim of the study was to characterize the evolution of AS after renal transplantation in a population of ESRD patients, in comparison to those patients remaining in dialysis.
Material and methods: One hundred patients were recruited from the waiting list of the Transplant Unit of the University Hospital of Nancy. Two vascular evaluations were performed at one-year interval. AS was assessed by carotid/femoral pulse wave velocity (PWV). During this interval, thirty-nine patients were transplanted and forty-nine remained on dialysis.
Results: At baseline PWV value was 10.6 ± 3.7 m/s. No difference was found between the two groups at the first and second visit. Mean arterial pressure (MAP) decreased in the transplant group (101 ± 14 vs. 95 ± 10 mmHg, $p<0.01$ respectively) at one-year follow up. Multivariate analysis showed that PWV changes depended on changes in MAP and baseline PWV.
Conclusion: Although no difference in the one-year PWV evolution was found, the lower MAP value in the transplanted group could result in a better long term evolution of arterial stiffness in this group, leading to a better cardiovascular prognosis after renal transplantation.

P6.04
EFFECT OF CAROTID BARORECEPTOR ACTIVATION ON AORTIC STIFFNESS

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Background: Previous research in acute animal models demonstrated strong effects of electrical carotid baroreceptor activation (CBA) on central hemodynamics. Data indicated arterial tone relaxation, which we could indirectly demonstrate at the level of the renal artery with a reduced impedance with CBA. The aim of this study was to assess effects of CBA on the elastic properties of the aorta.
Methods: The following data were invasively recorded in 7 anaesthetized dogs at baseline (BL) and during CBA intended to produce a moderate reduction in mean arterial pressure: (i) upper thoracic pressure (Pao; hi-fi pressure sensor) and flow (transonic flow probe) providing reflection magnitude Pb/Pf; (ii) Pao and diameter (ultrasonic crystals) providing local aortic distensibility (DC); PWV from simultaneous pressure recordings distance 21 cm (PWV-thoracic) and 51 cm (PWV-aorta) apart.
Results: see Table (mean (stdev)); P: paired t-test.

	CTRL	CBA	P
MAP(mmHg)	85.5 (9.0)	61.4 (6.7)	0.0007
Pb/Pf	0.44 (0.02)	0.36 (0.06)	0.005
DC (%/10 mmHg)	4.29 (1.08)	4.12 (0.91)	0.765
PWV-thoracic (m/s)	4.85 (0.40)	4.42 (0.52)	0.007
PWV-aorta (m/s)	6.78 (0.47)	5.75 (0.39)	0.0001

Discussion and conclusion: CBA lowered Pb/Pf and PWV, the latter effect mainly confined to the abdominal (muscular) aorta, given (i) the more substantial decrease in aortic (−1 m/s) versus thoracic (-0.4 m/s) PWV, and (ii) the absence of any change in DC measured directly at the upper thoracic aorta despite the reduction. Based on these and previous findings, we conclude that CBA modulates arterial tone in muscular arteries including the muscular parts of the aorta.

P6.05
ARTERIAL STIFFNESS AND CARDIAC DAMAGE PROGRESSION ARE ASSOCIATED IN ESSENTIAL HYPERTENSION PATIENTS

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Background: Arterial stiffness and cardiac hypertrophy are independent cardiovascular risk factors. Aim of this study was to describe the relationship between these organ damages in a large cohort of essential hypertensive (EH) treated patients.
Methods: We performed standard trans-thoracic echocardiography to measure anatomical (left ventricular mass indexed by body surface area [LVMI] and relative wall thickness [RWT]) and functional (ejection fraction, diastolic function [E/A] and deceleration time) cardiac parameters on 827 treated EH patients. Carotid-femoral pulse wave velocity (PWV) was used to estimate arterial stiffness. Data were analyzed by linear regressions or ANOVA and post-hoc Bonferroni test.
Results: Patients were 53±14 years old (Mean ± SD) and 50% were male. Their mean blood pressure values were 142.3±18.6/86.7±10.6 mmHg; cardiac structural and functional parameters were in the normal range, PWV was 10.7 m/sec. Geometry of left ventricle, as defined by LVMI and RWT (ESC guidelines), was normal in 336 (43%) patients, while in 163 (21%) we found concentric remodelling, concentric hypertrophy in 173 (22%) and eccentric hypertrophy in 109 (14%) patients. PWV was significantly different between the 4 subgroups ($p = 0.001$), with concentric and eccentric hypertrophy patients having