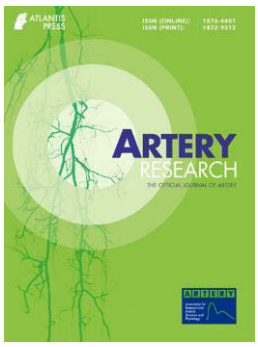

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P.007: EVALUATION OF AORTIC STIFFNESS AND WAVE REFLECTIONS IN PATIENTS AFTER SUCCESSFUL COARCTATION REPAIR

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Methods: We examined 178 healthy subjects (mean age 40.8 years) with no cardiovascular risk factors or disease, except for smoking. Chocolate intake was quantified with a dietary questionnaire, and subjects were assigned in groups of non-consumers, low consumers (<12 g/day – median value) or high consumers (⩾12 g/day). Carotid-femoral pulse wave velocity (PWV) was measured as an index of aortic stiffness. Aortic augmentation index (AIx) and aortic BP were assessed using applanation tonometry of the radial artery.
Results: Increasing chocolate consumption was associated with decreased central systolic BP ($P < 0.05$) and central PP, but not central diastolic or peripheral (brachial) BPs. There was an inverse relation of chocolate consumption with AIx and PWV. AIx was significantly lower in subjects with high chocolate consumption (Bonferroni $P < 0.01$), whereas both low and high consumers had decreased PWV values ($P < 0.05$ and $P < 0.01$) compared with non-consumers. In multivariate analysis, increasing chocolate intake was an independent determinant of low PWV values (ANCOVA $P < 0.01$) and low AIx ($P < 0.01$), after controlling for potential confounders.
Conclusions: Habitual chocolate consumption of more than 12 gr per day is associated with improved arterial elastic properties and aortic hemodynamics in healthy individuals.

P.005
THE ASSOCIATION OF COFFEE CONSUMPTION WITH WAVE REFLECTIONS IN HYPERTENSIVE PATIENTS

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Introduction: Wave reflections are important markers and prognosticators of cardiovascular risk, and have been implicated in the pathogenesis of systolic hypertension. Caffeine increases acutely wave reflections. Furthermore, chronic coffee consumption is associated with increased wave reflections in normotensive subjects. In the present study we aimed to assess the association between chronic coffee consumption and wave reflections in hypertensive patients.
Methods: We examined 228 never treated hypertensives (age 50.7±11.9 years, 143 males) under any medication. Frequency of coffee consumption was assessed using a validated food frequency questionnaire. According to the distribution of coffee consumption, we categorized daily coffee consumption as: (1) none, (2) low (<200 ml/day), (3) moderate (200–450 ml/day) and (4) high (>450 ml/day). Augmentation Index (AIx) was measured non-invasively as an index of wave reflections, using SphygmoCor®. Analysis of covariance (ANCOVA) was applied to evaluate the association between AIx and coffee intake after adjusting for several potential confounders.
Results: AIx was found to be increased with increasing degree of daily coffee consumption when adjusted for gender, age, height, smoking status, heart rate, mean pressure, HDL cholesterol and hsCRP ($p < 0.02$). Systolic, diastolic, pulse and mean pressures were not different among the 4 groups of daily coffee consumption.
Conclusions: Increased daily coffee consumption is associated with enhanced wave reflections in hypertensive patients. This finding may have important implications for the management of these patients.

P.006
THE ACUTE EFFECT OF GREEN TEA ON ENDOTHELIAL FUNCTION IN HEALTHY INDIVIDUALS

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Introduction: The effect of tea consumption on cardiovascular risk has not been defined yet, although there is evidence of a beneficial effect attributed to its flavonoid content. Endothelial dysfunction is a key event in the pathogenesis of atherosclerosis. The aim of the study was to evaluate the effect of green tea on endothelial function.
Methods: Thirteen apparently healthy subjects (age 32±3 years) with no risk factors for cardiovascular disease (except from 6 smokers) were studied at 3 sessions: (i) one with 6 gram of green tea, (ii) one with 125 mg of caffeine (the content of caffeine in green tea preparation) and (iii) one after placebo (hot water). Flow-mediated dilatation of the brachial artery was examined, using ultrasonography at baseline, at 30 min (peak plasma concentration of caffeine) and at 90 and 120 min (peak plasma concentration of flavonoids) after each intervention.
Results: The effect of green tea (or caffeine) on each variable is better described as changes in the response of each variable, where response is defined as net green tea (or caffeine) minus placebo values at each time point. Resting and hyperemic diameter of the brachial artery did not change significantly either with green tea or caffeine. Flow-mediated dilatation was significantly increased with green tea (by 2.46%, $p < 0.02$) but not with caffeine.
Conclusions: Green tea has an acute beneficial effect on endothelial function in healthy individuals. This may, at least partly, contribute to the beneficial effect of tea on cardiovascular risk.

P.007
EVALUATION OF AORTIC STIFFNESS AND WAVE REFLECTIONS IN PATIENTS AFTER SUCCESSFUL COARCTATION REPAIR

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Introduction: We have previously shown that normotensive patients with successful coarctation repair (SCR) have decreased distensibility of the upper body and increased distensibility of the lower body arteries. Aortic stiffness and wave reflections are implicated in the pathogenesis of hypertension. In this study we aimed at assessing whether aortic stiffness and wave reflections are influenced in this category of patients.
Methods: 19 normotensive, asymptomatic patients 26±7 years old, and age at surgery 15±9 years with SCR and gradient <25 mmHg, and 19 age, gender, height, weight, smoking status, lipid profile adjusted controls were studied. Carotid-femoral pulse wave velocity (PWV) was measured as an index of the stiffness of the whole aorta using a validated non-invasive device (Complior®). Wave reflections resulting from the whole body were studied using a validated system (SphygmoCor®) that employs high-fidelity arterial tonometry for the non-invasive registration of radial pulse waveform and appropriate computer software for pulse wave analysis. Aortic pressure waveform was synthesized from the radial waveform using a generalized transfer function. Augmentation index (AIx) was measured as an index of wave reflections.
Results: SCR patients had higher systolic, pulse and mean pressure than controls, while diastolic pressures did not differ. PWV and AIx were not different among the two groups (table).

	Postcoarctectomy pts	Controls	P value
Age, years	26.5±7.3	27.5±5.8	NS
SP, mmHg	130.6±14.9	116.9±14.6	<0.01
DP, mmHg	71.7±8.7	68.6±8.3	NS
PP, mmHg	58.9±13.2	48.3±10.4	<0.01
Mean P, mmHg	90.7±10.0	83.4±10.2	<0.05
Heart rate, bpm	70.5±11.1	70.7±11.2	NS
PWV, m/s	5.2±0.9	5.5±0.9	NS
AIx, %	11.1±13.7	9.3±9.2	NS

Conclusions: Despite the fact that SCR patients had higher systolic and pulse pressures, PWV and AIx were not different than controls, possibly because these indices are influenced by the elastic properties of both the pre- and post-coarctation part of the arterial tree.

P.008
THE EFFECT OF RAMIPRIL AND VALSARTAN ON AORTIC STIFFNESS AND WAVE REFLECTIONS IN PATIENTS WITH SUCCESSFUL COARCTATION REPAIR

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Introduction: Patients after successful coarctation repair (SCR) have increased incidence of cardiovascular complications due to relapse of hypertension, which is mainly attributed to impaired elastic properties of the upper body arteries. Angiotensin converting enzyme inhibitors and angiotensin receptor antagonists reduce aortic stiffness and wave reflections; however their effect on arterial stiffness in postcoarctectomy patients has not been studied yet.
Methods: 12 patients, 25±6 years with SCR at 14±7 years, normotensive at rest, were studied at 4 different occasions with a randomised, cross-over design: (i) at baseline and 4 weeks after ramipril 5 mg/day; (ii) at baseline and 4 weeks after valsartan 160 mg/day. Carotid-femoral pulse wave velocity (PWV) was measured as an index of aortic stiffness with Complior®. Augmentation index (AIx) was measured as an index of wave reflections using SphygmoCor®.
Results: Both ramipril and valsartan decreased peripheral blood pressure (systolic by 7.6±9 and 5.9±7 mmHg respectively, $P < 0.05$ for both, diastolic by 6.5±5 and 9.1±6 mmHg respectively, $P < 0.01$ for both). PWV and AIx