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AORTIC STIFFNESS IS INCREASED IN PATIENTS WITH HEPATITIS C VIRUS SEROPOSITIVITY

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Background: Recent data suggest that chronic systemic inflammation impairs vascular function and plays a critical role in cardiovascular disease. Aortic stiffness and wave reflections are independent markers and prognosticators of cardiovascular risk. The present study was undertaken to assess whether chronic infection with hepatitis B virus (HBV) or hepatitis C virus (HCV) affects aortic stiffness and wave reflections.

Methods: We determined aortic stiffness and wave reflections in 26 consecutive patients (mean age: 49.1±16 yrs, 9M/17F) positive for HCV infection and 14 patients (mean age: 52.1±11 yrs, 9M/5F) positive for HBV infection, who had never been treated with interferon. 40 healthy individuals were recruited to compare each of the two subgroups and they were matched for age, gender, body-mass index and risk factors. Aortic stiffness was evaluated with carotid-femoral pulse wave velocity (PWV) and wave reflections with augmentation index (Aix) of the aortic pressure waveform.

Results: Patients with HCV infection had higher carotid-femoral PWV than controls, indicating increased aortic stiffness (7.3±1.3 vs. 6.7±1.3 m/s, p < 0.05), while Aix did not differ (25.1±15 vs. 27.2±15, P=NS). Carotid-femoral PWV and Aix in the subjects with HBV infection were similar to those in the control subjects. There were no differences as regard systolic, diastolic pressures and heart rate between patients with hepatitis and controls.

Conclusions: Patients with HCV have impaired aortic elastic properties, whereas HBV does not influence aortic stiffness. These findings are important to further characterize the increase of cardiovascular risk in patients with hepatitis C virus seropositivity.

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LONG-TERM SILDENAFIL ADMINISTRATION IMPROVES AORTIC ELASTIC PROPERTIES AND WAVE REFLECTIONS IN PATIENTS WITH ERECTILE DYSFUNCTION OF VASCULAR ORIGIN

Background: Aortic stiffness and wave reflections are independent prognosticators of cardiovascular risk and may be impaired in men with erectile dysfunction (ED) considered as the first clinical manifestation of a generalized vascular disease. We investigated the chronic effect of a long-term daily sildenafil administration on aortic elastic properties and wave reflections.

Methods: The chronic effect of a 2-week long treatment with sildenafil on aortic stiffness and wave reflections were studied in 11 men (age 58.1±15 years) with non-hormonal and non-psychogenic ED. The study was carried out on two separate arms, one with sildenafil (100 mg) and one with placebo according to a randomized, placebo-controlled, double-blind, cross over design. All measurements were performed 24 hours after the last sildenafil intactor placebo intake. Aortic stiffness was evaluated with carotid-femoral pulse wave velocity (PWV) and wave reflections with augmentation index (Aix) of the aortic pressure waveform using high-fidelity pulse wave analysis.

Results: Daily sildenafil intake led to a significant sustained decrease in PWV and Aix, indicating a decrease in aortic stiffness and wave reflections (p < 0.05, figure). There were no significant changes in systolic and pulse pressure.

COFFEE HAS A MORE POTENT UNFAVORABLE ACUTE EFFECT ON WAVE REFLECTIONS THAN CAFFEINE IN NONHABITUAL COMPARED WITH HABITUAL DRINKERS.

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Background: Arterial wave reflections (WR) are determinants of cardiovascular performance and predictors of the corresponding risk. The aim of this study was to assess whether there is a differential effect of coffee and caffeine on WR and whether this effect is related to habitual coffee consumption.

Methods: We studied 24 healthy volunteers (11 habitual-13 nonhabitual coffee consumers) on 4 separate occasions receiving: (a) triple espresso, (b) decaffeinated triple espresso, (c) 240 mg of caffeine alone (amount contained in a triple espresso) and (d) placebo. Augmentation index (Aix) was measured as an index of WR using a validated system (Sphygmocor®). Higher Aix values indicate increased WR and vice versa.

Results: The effect of coffee and caffeine on WR is described as response of each variable, where response is defined as net coffee or caffeine minus placebo values at each time point. In the whole population, coffee and caffeine increased Aix, however the effect of coffee was more pronounced.