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Hormonal Mechanisms

5.7 Cardiac Remodelling in Patients with Pheochromocytoma

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Introduction: *In vitro* and *in vivo* studies show that catecholamines, independently of the haemodynamic discharge, exert an influence on extracellular matrix with collagen deposition and subsequent fibrosis in the cardiovascular system, mainly in the myocardium wall.

Methods: Fourteen patients with pheochromocytoma (PHEO), 15 matched high-normal blood pressure subjects (HN-S), 15 mild essential hypertensives (EH), and 15 controls (C) underwent conventional echocardiography associated with ultrasonic tissue characterisation of myocardial wall, by integrated backscatter analysis (IBS). The latter was expressed both as calibrated value for the IBS (C-IBS) obtained within the pericardium (marker of myocardial fibrosis) and as the systo-diastolic variation of IBS (CV-IBS), an index of myocardial contractile performance.

Results: In patients with PHEO, left ventricular mass was lower than that of EH (*P P* n.s.) and posterior wall level (−26.4±7.2 dB vs. −28.4±8.2 dB, n.s.), and significantly higher than those of HN-S (septal: −33.7±5.2 dB; posterior wall −41.4±8.2 dB, *P P P P* r = −0.49, *P* r = −0.51,

Conclusions: Our results show that patients with PHEO have, independently of the blood pressure values, an increase in myocardial fibrosis associated to an impairment of left ventricular function. These data suggest that catecholamines in humans per se exert a role in myocardial remodelling with fibrosis and consequent contractile dysfunction.