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Growth Hormone Control and Cardiovascular Function in Patients with Acromegaly

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Objective: Acromegaly is associated with cardiovascular alterations. Up to 50% acromegalic patients suffered from treatment failure after multiple modalities. We investigated correlation between cardiovascular function and control of growth hormone (GH) in acromegalic patients following transsphenoidal adenomectomy (TSA).
Materials and Methods: This cross-sectional study was conducted at a tertiary referral hospital. We recruited acromegalic patients who had undergone TSA between 2006 and 2014. Patients were assigned to group 1 comprising patients with controlled acromegaly (GH <2.0 ng/mL and normalized insulin-like growth factor-1 [IGF-1]), group 2 comprising patients with partially controlled acromegaly (either GH >2.0 ng/mL or non-normalized IGF-1), or group 3 comprising patients with uncontrolled acromegaly (GH >2.0 ng/mL and non-normalized IGF-1). Echocardiography evaluated the left ventricular mass index, left ventricular ejection fraction, and the early transmitral filling velocity (E)-to-late transmitral filling velocity (A) and the E-to-the early diastolic mitral annular velocity (E') ratios. Carotid tonometry evaluated the intima-media thickness of the carotid artery, carotid femoral pulse wave velocity, augmentation index, aortic characteristic impedance, and pulse pressure amplification.
Results: The mean fasting GH and IGF-1 levels were significantly higher in group 3 than those in group 1 or group 2. The fasting GH level in group 2 was higher than that in group 1. The groups did not differ with respect to cardiovascular structure and function.
Conclusion: In the patients with acromegaly who had undergone TSA, cardiac structure and vascular stiffness did not differ among the groups with different levels of GH control.