Ascending aorta dilatation in primary aldosteronism: a new deleterious consequence of aldosterone excess.

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Introduction

Primary hyperaldosteronism (PHA) features a higher prevalence of cardiovascular events and renal complications as compared with essential hypertension. This is mostly due to aldosterone excess. In a limited number of animal models, the potential impact of aldosterone excess on aorta has already been investigated and results suggest a detrimental effect. However, such hypothesis has not yet been confirmed in human subjects. A very little number of case reports on aortic dissection in primary hyperaldosteronism may support it.

Objective

To highlight a potential role of aldosterone excess in ascending aorta dilatation, by presenting prevalence of ascending aorta dilatation in primary hyperaldosteronism subjects as compared with hypertensive controls.

Subjects and hormonal assessment

Cases: Consecutive PHA patients (by adenoma/hyperplasia) in whom adrenal surgery had not yet been performed were selected. Hypercortisolism had been excluded according to Endocrine Society Guidelines. Phaeochromocytoma had been ruled out by assaying catecholamines and metanephrines. PHA had been diagnosed through Aldosterone-to-Renin-Ratio after two hours of upright position and confirmatory Captopril Challenge test. The cut-off ratio used to detect PHA in both 2hARR and CCT was 30 and discontinuation of interfering drugs was applied according to published Guidelines on primary aldosteronism.

Controls: Consecutive hypertensive patients were selected. The inclusion criteria were: treatment with at least one anti-hypertensive drug. The exclusion criteria were PHA, hypercortisolism and phaeochromocytoma, which had already been ruled out at the first access to the Endocrinology Unit by means of the same protocol used for PHA, as described before. This group is therefore identified with ‘NS’, non secreting. Patients with known aortic bicuspid valve or connective tissue disorder such as Marfan syndrome were not present.

Adrenal CT protocol

unenhanced scan, * arterial phase (45 secs after the i.v. injection of iodinate contrast medium); * venous phase (60 secs after the injection); * delayed examination after 15 mins

Echocardiographic parameters

* All echocardiograms were performed at S. Orsola-Malpighi Hospital with the same ultrasound equipment. Echocardiograms evaluated both myocardium and ascending thoracic aorta morphology and dimensions. Ascending aorta dilatation was defined as an aortic root diameter ≥ 38 mm and/or a tubular ascending aorta diameter ≥ 37 mm.

References