
Hormonal Mechanisms

6.10 Primary Hyperaldosteronism Treatment Reduces Left Ventricular Mass According to the Entity of Hormonal Production

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Introduction. Cross-sectional echocardiographic evaluations have reported excess left ventricular (LV) hypertrophy in patients with primary aldosteronism (PA). We have recently reported that, in the long-term, both adrenalectomy and spironolactone (SL) are effective in reducing LV mass in patients with PA. In a post-hoc analysis we further explored the respective roles of blood pressure (BP) reduction obtained with treatment and severity of aldosteronism in the reduction of LV mass.

Methods. Fifty-four patients with PA were enrolled in a prospective study and followed for a mean of 6.4 yr. after treatment with adrenalectomy (n=24) or SL (n=30).

Results. At baseline, patients with PA had greater LV mass index (LVMI; $P<0.001$) and more prevalent LV hypertrophy ($P<0.05$) than 274 matched patients with essential hypertension. During follow-up, BP decreased by 31/21 mmHg (systolic/diastolic) in patients with PA, with a change that did not differ in patients treated surgically or medically, whereas the average LV mass regression was 44 g in adrenalectomized patients and 32 g in patients treated with SL (N.S.). In 5 patients with evidence of tumoural PA who were treated with SL, BP decreased by 30/20 mmHg and LVMI decreased by 37 g (N.S. vs. adrenalectomy). At baseline, LVMI had a significant relationship with plasma aldosterone (PALDO) concentration measured both in standard conditions ($r=0.29$, $P<0.05$) and after the i.v. saline load that was used as the confirmatory diagnostic test ($r=0.39$, $P<0.01$). In both adrenalectomized and SL-treated patients, changes of LVMI observed during the long-term follow-up were significantly related with pre-treatment PALDO measured both at baseline (respectively $r=0.41$, $P<0.05$ and $r=0.39$, $P<0.05$) and after the saline load (respectively $r=0.40$, $P<0.05$ and $r=0.42$, $P<0.05$). Multivariate analysis demonstrated that changes in systolic BP ($P<0.05$) and pre-treatment PALDO measured after saline load ($P<0.05$) were independent predictors of LVMI changes after treatment, with respective contributions of 49% and 27%.

Conclusions. The reduction of LV mass induced by treatment of PA does not depend only from BP lowering, but it is significantly related to the severity of disease.