

Primary aldosteronism in hypertensive patients: clinical implications and target therapy

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ABSTRACT

Background The prevalence of primary aldosteronism (PA) in hypertensive patients varies according to diagnostic testing and ascertained normal cut-offs. The aim of this case-control study was to confirm the high prevalence of PA in a large hypertensive population and evaluate the antihypertensive effect of mineralocorticoid receptor antagonists (MRA) treatment.

Material and methods We investigated 327 hypertensive and 90 matched normotensive subjects with normal adrenal imaging. Serum aldosterone (ALD), active renin (REN) levels and aldosterone/active renin (ALD/REN) ratio were measured before and after a combined sodium chloride, fludrocortisone and dexamethasone suppression test (FDST). Post-FDST values were compared to cut-offs obtained from controls (post-FDST ALD 2.96 ng/dL and post-FDST ALD/REN 0.93 ng/dL/ μ U/mL). PA patients received MRA treatment.

Results By applying the combination of post-FDST ALD levels and ALD/REN ratio, 28.7% of the hypertensive patients had PA. There was a positive, albeit weak, correlation between systolic (SBP) and diastolic blood pressure (DBP) and ALD levels and/or ALD/REN ratio after the FDST ($P < 0.0001$). SBP was associated with a post-FDST ALD of 3.24 ng/dL and ALD/REN ratio of 0.90 ng/dL/ μ U/mL, whereas post-FDST ALD had an inverse association at serum K⁺ values of less than 3.9 mEq/L. MRA treatment in 69 PA patients, resulted in a significant reduction in the maximum SBP and DBP values (28 ± 15 and 14 ± 7 mmHg, respectively, $P < 0.0001$).

Conclusions Using the FDST, an increased prevalence of PA in hypertensives was observed. A significant blood pressure lowering effect was obtained with MRA treatment, implying that these agents may be beneficial in a significant number of hypertensive patients.

Keywords Aldosterone, hypertension, primary aldosteronism.