Abstract citation ID: bvac150.523

Cardiovascular Endocrinology

PSUN52

Patients with Left Ventricular Hypertrophy on Echocardiography are Frequently Evaluated with Renin and Aldosterone

Leedor Lieberman, MD, Richard Auchus, MD, PhD, Christiana Hench, BS, Jonathan Troost, PhD, Theodore Kolias, MD, James Brian Byrd, MD, MS, and Troy LaBounty, MD

Background: Increased left ventricular (LV) mass is an independent predictor of cardiovascular morbidity and mortality. Primary aldosteronism (PA) is associated with increased LV mass regardless of concomitant essential hypertension. Therefore, we hypothesize that the findings of increased LV mass approximated by left-ventricular hypertrophy (LVH) on echocardiogram relate to renin-independent hyperaldosteronism.

Methods: We performed a retrospective review of patients who underwent echocardiography at our institution between April of 2013 and September of 2017 (n=98,007 individuals). Of this population, we identified patients who underwent transthoracic echocardiography who met criteria for LVH based on current American Society of Echocardiography guidelines using the interventricular septal thickness in diastole (IVSd) and left ventricular posterior wall thickness in diastole (LVPWd). We excluded patients who underwent isolated transesophageal imaging as well as those who had significant structural cardiac abnormalities other than LVH. This cohort was analyzed with an internal self-service data tool to determine if patients had undergone biochemical evaluation with serum aldosterone and renin, which defined the final analytical cohort.

Results: We identified 19,664 patients with LVH of whom 5.8% (n = 1132) underwent biochemical evaluation with serum aldosterone and corresponding plasma renin activity (PRA) or direct renin concentration (DRC). In all patients with LVH, the mean IVSd was 11.7 ± 1.2mm in those who underwent biochemical testing and 11.5 ± 1.2 mm in those who did not ($p < 0.001$); the mean LVPWd was 11.4 ± 1.1 mm mm in those who underwent biochemical testing and 11.3 ± 1.1 mm in those who did not ($p < 0.001$). Of African American patients with LVH, 9.8% underwent biochemical testing; 5.0% of Caucasian patients with LVH underwent testing. The median PRA was 0.9 ng/mL/h

with a median aldosterone to renin activty ratio (ARR) of 8.9 ng/dL-ng/mL/h. . The majority (54.4%) of individuals who underwent testing with plasma renin activity had a PRA ≤ 1.0 ng/mL/h.

Conclusion: Patients with LVH are being evaluated with renin and aldosterone at a higher frequency than patients with resistant hypertension and other guideline based indications for PA screening. Individuals evaluated with renin and aldosterone had increased IVSD and LVPWd, suggestive of more extensive LVH, compared with other individuals with LVH. LVH may be a sensitive screening criterion for PA. Additional prospective studies are necessary.

Presentation: Sunday, June 12, 2022 12:30 p.m. - 2:30 p.m.