

nodular hyperplasia in 7 (50%) patients. Of the 7 cases analyzed for aldosterone-driver mutations so far, 4 harbored CACNA1D mutations, 2 ATP1A1 mutations, and 1 a KCNJ5 mutation.

**Conclusions:** Patients with severe PA and frank AVS aldosterone lateralization might have multifocal, bilateral disease. Long-term follow up and targeted medical therapy should be pursued after unilateral adrenalectomy for presumed unilateral PA.

*Presentation:* Monday, June 13, 2022 11:15 a.m. - 11:30 a.m.

Abstract citation ID: bvac150.514

## Cardiovascular Endocrinology

OR20-2

### ***Bilateral Primary Aldosteronism Is Not Excluded by High Adrenal Vein Sampling Lateralization Indices***

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**Background:** Primary aldosteronism (PA) is broadly divided into unilateral and bilateral forms, and the most reliable subtyping tool available is adrenal vein sampling (AVS). Unilateral PA is generally diagnosed based on AVS lateralization indices (LI=[aldosterone/cortisol] ratio between the dominant and contralateral adrenal vein)  $\geq 4$ , or even  $\geq 2$  when AVS is performed without cosyntopin stimulation. Long-term follow-up data from patients with PA treated with unilateral adrenalectomy have been minimal.

**Objective:** To assess the rates of residual and recurrent PA after AVS-guided unilateral adrenalectomy.

**Methods:** We enrolled patients with PA who underwent unilateral adrenalectomy between 09/2017 and 08/2021 in a single tertiary referral center and followed them longitudinally. Demographics, laboratory, imaging, and pathology data were collected. Aldosterone synthase (CYP11B2) immunohistochemistry and next generation sequencing were performed on available formalin-fixed paraffin-embedded adrenal tissue blocks.

**Results:** During the study period, 80 patients (52 men) with median age 53 (range, 19-76) years underwent unilateral adnectomy, and were followed for a median 80 days (range, 6-653 days). In total 14 (17.5%) patients had evidence of residual PA following surgery, including 3 who had complete biochemical failure, and 1 who had apparent cure of PA immediately post-operatively. All 14 patients had severe PA, with baseline plasma aldosterone concentrations between 23.4 and 496 ng/dL and suppressed renin. Baseline and post-cosyntropin stimulation LIs ranged from 2.7- 187.5 and 1.3-53.7. The LI was  $>4$  only at baseline in 3 cases, and only after cosyntropin stimulation in 2 cases. Histology showed single adenomas, ranging from 0.7-5.3 cm in 7 (50%) patients, and multiple adenomas and/or