

Effectiveness of Adrenal Venous Sampling in the Management of Primary Aldosteronism: Single Centered Cohort Study at a Tertiary Care Hospital in Sri Lanka

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Abstract : Introduction and objectives: Adrenal venous sampling (AVS) is the gold standard to discriminate unilateral primary aldosteronism (UPA) from bilateral disease (BPA). AVS is technically demanding and only performed in a limited number of centers worldwide. To the best of our knowledge, Except for one study conducted in India, no other research studies on this area have been conducted in South Asia. This study aimed to evaluate the effectiveness of AVS in the management of primary aldosteronism. Methods: A total of 32 patients who underwent AVS at the National Hospital of Sri Lanka from April 2021 to April 2023 were enrolled. Demographic, clinical and laboratory data were obtained retrospectively. A procedure was considered successful when adequate cannulation of both adrenal veins was demonstrated. Cortisol gradient across the adrenal vein (AV) and the peripheral vein was used to establish the success of venous cannulation. Lateralization was determined by the aldosterone gradient between the two sides. Continuous and categorical variables were summarized with mean, SD, and proportions, respectively. The mean and standard deviation of the contralateral suppression index (CSI) were estimated with an intercept-only Bayesian inference model. Results: Of the 32 patients, the average age was 52.47 \pm 26.14 and 19 (59.4%) were males. Both AVs were successfully cannulated in 12 (37.5%). Among them, lateralization was demonstrated in 11(91.7%), and one was diagnosed as a bilateral disease. There were no total failures. Right AV cannulation was unsuccessful in 18 (56.25%), of which lateralization was demonstrated in 9 (50%), and others were inconclusive. Left AV cannulation was unsuccessful only in 2 (6.25%); one was lateralized, and the other remained inconclusive. The estimated mean of the CSI was 0.33 (89% credible interval 0.11-0.86). Seven patients underwent unilateral adrenalectomy and demonstrated significant improvement in blood pressure during follow-up. Two patients await surgery. Others were treated medically. Conclusions: Despite failure due to procedural difficulties, AVS remained useful in the management of patients with PA. Moreover, the success of the procedure needs experienced hands and advanced equipment to achieve optimal outcomes in PA.

Keywords : adrenal venous sampling, lateralization, contralateral suppression index, primary aldosteronism

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