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Clinical utility of Adrenal Vein Sampling (AVS) in the subtype evaluation of Primary Aldosteronism (PA)

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Lateralization of the source of excessive aldosterone production is critical to guide the management of PA. Unilateral disease is treated surgically and bilateral disease is managed medically. The Endocrine Society recommends that, "when surgical treatment is practicable and desired by the patient, the distinction between unilateral and bilateral disease be made by AVS." The aim of this study was to examine features that may or may not determine whether an AVS should be performed. In this prospective observational study CT imaging characteristics, AVS results, and post-operative outcomes were analyzed in consecutive patients seen in the Department of Nephrology in the last 10 years. This is a single center study conducted in a tertiary referral center (Cleveland Clinic).

Sixty (60) patients with excessive aldosterone production had dedicated adrenal CT scans as the initial study in subtype testing. Nineteen (19) patients showed either normal, thickened, or microdular adrenal glands (group I). Forty one (41) patients demonstrated unilateral, single, discrete adrenal adenomas. In group I, six (6) elected to undergo AVS which showed no lateralization. Of group II patients 21 had AVS which showed lateralization to the tumor site and confirmed at surgery. Of the remaining 20 patients who preferred not to have AVS, 11 had surgery which confirmed the tumor site showed on CT scan. The primary outcomes were decreases in plasma aldosterone to ≤ 10 ng/dL and serum K ≥ 3.8 mEq/L without use of oral KCl or aldosterone antagonist. The secondary outcomes were a BP of <140/90 mmHg without treatment or improvement of BP with less medication. The clinical and biochemical outcomes were no different between those with or without AVS prior to surgery. The study shows that PA patients with unilateral, solitary, well-delineated tumor masses may not require AVS prior to surgery. Similarly, patients showing normal, thickened, or microdular adrenal glands may not have to undergo AVS and can be treated medically.

Biography

Emmanuel L. Bravo is staff in the Department of Nephrology and Hypertension in the Glickman Urological and Kidney Institute of the Cleveland Clinic. He completed his M.D. from the University of the East, School of Medicine in the Philippines and Post-Doctoral training at Case Western Reserve University School of Medicine and the National Institutes of Health (NIH). He has published more than 260 papers in peer-reviewed journals; mostly in the area of Endocrine-related hypertension. He has served in the Study Sections of the NIH, AHA, and Kidney Foundation and as an Editorial Board Member of Hypertension and JCEM.

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