Review of Clinical Presentation of Primary Hyperaldosteronism (PHA) at a Tertiary Centre

Tan Tock Seng HOSPITAL

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OBJECTIVES

Review of clinical features, investigation and management of Primary Hyperaldosteronism (PHA) in our center to identify any disparity in the presentation and management as compared to reported case studies.

METHODS

Retrospective review of the clinical characteristics of patients with primary hyperaldosteronism (PHA) who underwent arterial venous sampling (AVS) at our centre between April 2004 and October 2014. The diagnosis of primary hyperaldosteronism (PHA) was defined by biochemical criteria: aldosterone renin ratio (ARR) greater than 15 and/or positive saline suppression test.

Figure 1. CT Adrenal Findings

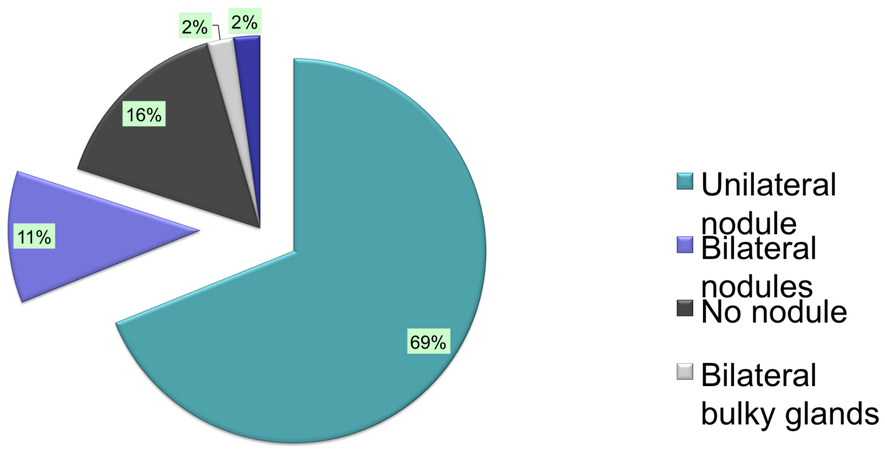


Figure 2. Final Diagnosis of PHA after CT and AVS

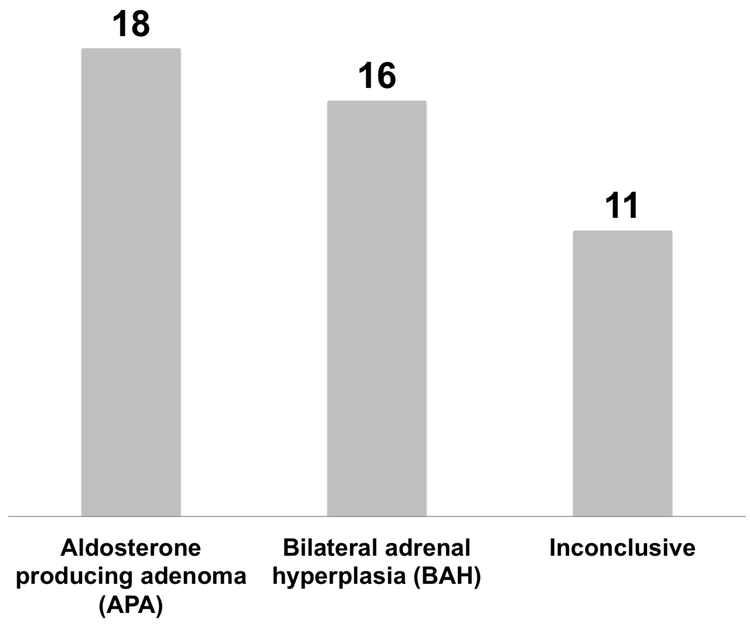
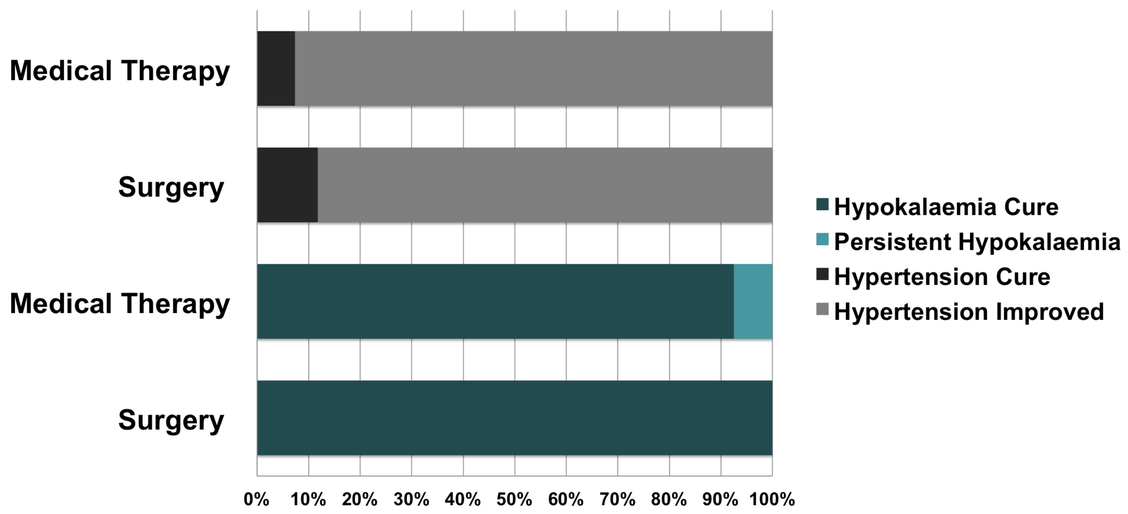


Figure 3. Cure Rates of Hypertension and Hypokalaemia post treatment



RESULTS

- 45 patients were identified over a 10–year period; 32 male, 13 female (mean age of cohort was 50.3 years). 33/45 were older than 45 years of age. All had hypertension at presentation and 41/45 had hypokalaemia.
- 31/45 patients had unilateral adrenal nodule on computed tomography (CT) of the adrenal glands, 5/45 had bilateral nodules, 7/45 had no nodules, 1/45 had bilateral bulky appearing adrenals and 1/45 had left adrenal limb thickening (See Figure 1). For those with unilateral nodules, mean tumor size on CT was 1.41 cm (0.7-2.3 cm), median tumor size was 1.3 cm. All patients underwent AVS and 4 had this investigation repeated due to inconclusive results on the initial procedure.
- Based on biochemical criteria, 30/49 AVS cases were successfully cannulated bilaterally.
- The final etiology of PHA was established after evaluation of both CT and AVS findings by the primary clinician (ratio of higher over lower aldosterone/cortisol of >4 for aldosterone producing adenoma (APA) and <3 for bilateral adrenal hyperplasia (BAH): 18 patients had aldosterone producing adenoma (APA),16 had bilateral adrenal hyperplasia (BAH), 11 were inconclusive (see Figure 2).
- 17/45 patients underwent surgery (all confirmed as APA on histology). After surgery, hypokalemia normalised in all, and 15/17 patients had improvement in blood pressure while 2/17 were cured of hypertension. Among 27 patients treated medically with either spironolactone or eplerenone, 25/27 had normalisation of potassium. 25/27 had blood pressure improvement and 2/27 were cured of hypertension (normal blood pressure without requiring any anti-hypertensive medications (see Figure 3)). 1 patient declined treatment. Compared to reported literature, our cure rates for hypertension and hypokalaemia post surgery were lower[1-3].

CONCLUSIONS

The prevalence of BAH (35.6%) is higher in our cohort compared to reported series[4] but this could be due to selection of cases through AVS procedure. Some cases of APA may have been missed because they did not undergo AVS and a few may have had surgery without undergoing AVS. Higher prevalence of inconclusive diagnosis (24.4%) for PHA was found in our cohort, which could be related to the expertise in our centre. Cure rates for both hypokalaemia and hypertension were better in the surgical group.

References

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