Secondary Hypertension; Proposed Standards

Investigation of Cushings

1. Reference ranges and cut offs for all tests requiring measurement of cortisol should take into account the analytical method.

2. Laboratories should give advice regarding the choice of investigations for patient groups where the results of investigations may be misleading.
   This may include pregnant people and patients taking exogenous oestrogens, patients taking anti-epileptic medications and patients with renal insufficiency[1]

3. Where salivary cortisol is offered, cortisone should also be reported[1].

4. Where the overnight dexamethasone suppression test is offered, it may be helpful to measure dexamethasone in patients where a false positive result is suspected due to the clinical scenario[1]

Investigation of Phaeochromocytoma and Paraganglioma

5. Urine and/or plasma metanephrines should be the recommended first line test in adult patients[2, 3]
   Urine and plasma catecholamines, HVA and VMA are of limited utility in adult patients with suspected PPGL.

6. 3-methoxytyramine should be included in plasma metanephrine profiles[4].

7. Laboratories should give advice on the potential effect of medications, either as written guidance available to clinicians before requesting, or as part of the report.

8. Samples for plasma metanephrines should ideally be drawn in the supine position (although we acknowledge that this is challenging in the outpatient setting)[2, 3]

9. Reference ranges for plasma metanephrines should be specific for seated and/or supine sampling, whichever is offered by the laboratory.

Investigation of Primary Hyperaldosteronism

10. Aldosterone, renin (either PRA or DRC) and aldosterone / renin ratio (ARR) should be reported for all patients being investigated for possible primary hyperaldosteronism (PHA)[5]

11. Ideally samples for renin & aldosterone should be taken in the morning after the patient has been out of bed for at least 2 hours, after being seated for 5-15 minutes[5]

12. Patients with a positive ARR should proceed for confirmatory testing by saline suppression test or captopril challenge test[5]
    (Except in the setting of hypokalaemia, undetectable plasma renin and plasma aldosterone >550 pmol/L where no further confirmatory testing may be required[5])

13. Laboratories should give advice on the potential effect of medications, preferably before requesting.

14. Where medications are not withdrawn before sampling, the clinician should be encouraged to inform the laboratory. The report should include interpretative comments that take into account the effect of any disclosed medications[5]

15. Patients with PHA may be normokalaemic; ARR testing may be helpful even in patients with normal serum potassium.

16. Patients should have a diagnosis of primary hyperaldosteronism confirmed before proceeding to adrenal vein sampling (AVS).

17. AVS should only be performed in a specialist centre by an experienced Radiologist.

Agreed by the attendees of the Thames Audit Group meeting held 12th November 2024

References

1. Consensus on Diagnosis and Management of Cushing's Disease: A Guideline Update
   M Fleseriu et al
   Lancet Diabetes Endocrinol 2021 9(12): 847 – 875
   doi: 10.1016/S2213-8587(21)00235-7

2. Phaeochromocytoma and Paraganglioma: An Endocrine Society Clinical Practice Guideline
   JWM Lenders et al
   J Clin Endocrinol Metab 2014 99: 1915 – 1942
   doi: 10.1210/jc.2014-1498

3. A UK National Audit of the Laboratory Investigation of Phaeochromocytoma and Paraganglioma
   C Boot et al
   Ann Clin Biochem 2022 59(1): 65 – 75
   doi: 10.1177/00045632211046759

4. Plasma Methoxytyramine: Clinical Utility with Metanephrines for Diagnosis of Phaeochomocytoma and Paraganglioma
   D Rao et al
   Eur J Endocrinol 2017 177(2): 103 – 113
   doi: 10.1530/EJE-17-0077

5. The Management of Primary Aldosteronism: Case Detection, Diagnosis and Treatment: An Endocrine Society Clinical Practice Guideline
   JW Funder et al
   J Clin Endocrinol Metab 2016 101:1889 – 1916
   doi: 10.1210/jc.2015-4061