

SALINE INFUSION TEST FOR HYPERALDOSTERONISM

INTRODUCTION

The normal response to an excessive salt and water load should be suppression of aldosterone levels to well below 140 pmol/L. In primary hyperaldosteronism this control of aldosterone secretion is lost and therefore aldosterone is not suppressed in response to salt and water loading.

This test is a second line test for the confirmation of Primary Aldosteronism. Patients should already have been screened with a random aldosterone:renin ratio (see screening protocol for Aldosterone Renin Studies) and found to have an elevated value (aldosterone:renin ratio > 1000 and an aldosterone >250 pmol/L).

CONTRAINDICATIONS AND SIDE EFFECTS

The risk of sodium loading prohibits the use of this test in elderly subjects and those with severe hypertension or heart failure.

PATIENT PREPARATION

- Patient needs to be hospitalised for at least 4 days to carry out the test.
- All hypertensive medication should be stopped as per aldosterone screening protocols.

PROTOCOL

Requirements

1. 2L 0.9% saline for IV administration
2. Infusion pump/giving set
3. 2 indwelling catheters
4. Two PLASTIC orange top (Li heparin) blood tubes

Procedure

Please alert Biochemistry staff (extension 3032) that this test is being undertaken.

- Start test between 08.00 and 09.30am.
- Patient should be in a recumbent position prior to commencing procedure and should remain recumbent throughout test.
- Site indwelling catheter in antecubital fossa with good access for administration of 0.9% saline infusion, and site indwelling catheter in opposite arm for blood sampling.
- Check and record BP.
- Take blood sample for potassium and aldosterone - send to laboratory immediately
- Commence infusion of 2L 0.9% saline over 4 hours ie infusion pump rate 500 mL/h.
- At completion of infusion immediately take sample for aldosterone (recumbent position) and take to the lab immediately.

Clinical Biochemistry Department
Endocrinology Department

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CLINB-CF-22**

INTERPRETATION

Serum aldosterone > 140 pmol/L at the end of the study confirms a diagnosis of Primary hyperaldosteronism.

SENSITIVITY AND SPECIFICITY OF TEST

Comparison of fludrocortisone suppression test with an iv saline loading test in a series of 100 subjects suggests that the latter is equally efficient as a diagnostic tool whilst being easier, cheaper and potentially safer (Mulatero et al 2006).

REFERENCES

1. Funder JW, et al. 2008. Case detection, diagnosis, and treatment of patients with primary aldosteronism: An Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab.* 93(9): 3266-3281.
2. Mulatero P et al. Confirmatory tests in the diagnosis of primary aldosteronism. *Horm Metab Res.* 2010 Jun;42(6):406-10.
3. Mulatero P et al. Comparison of confirmatory tests for the diagnosis of primary aldosteronism. *J Clin Endocrinol Metab.* 2006 Jul;91(7):2618-23.

CONTACTS

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