Adrenocortical Insufficiency Guideline

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Adrenocortical Insufficiency Guideline
(ADDISON’S DISEASE)

Common Causes

- Autoimmune adrenalitis
- Tuberculous adrenalitis

Rare Causes

- Adrenal haemorrhage and infarction
- AIDS
- Bacterial and fungal infections
- Metastatic malignancy
- Amyloid/Sarcoid
- Haemochromatosis
- Pituitary disease

Clinical Features

Cortisol Deficiency
- Weakness
- Anorexia
- Fatigue
- Postural hypotension
- Nausea
- Vomiting
- Hypoglycaemia
- Weight loss
- Mineralocorticoid Deficiency
- Renal sodium wasting
- Potassium retention
- Severe dehydration

Hyperpigmentation due to ACTH excess is the classical finding in chronic primary adrenocortical insufficiency.

**Investigations**

Some steroids (i.e. hydrocortisone and prednisolone) will cross react with the cortisol assay. Dexamethasone does not cross react and therefore can be used if a patient needs to be maintained on steroid therapy.

**Initial Tests**

Plasma (lithium heparin)

- Sodium
- Potassium
- Urea
- Creatinine

Plasma (fluoride oxalate)

- Glucose

N.B. A random cortisol is of little use *unless* the patient is stressed e.g. acutely ill, shocked, hypotensive or hypoglycaemic. In the stressed situation an inappropriately low level of cortisol (<100nmol/L) will usually indicate adrenal insufficiency.
Short Synacthen test

Can be performed at any time in acute situations

Patient preparation: None required unless the patient is on glucocorticoid steroids. If so change to the equivalent dose of dexamethasone 24 h before commencing test.

Protocol

Time 0 Collect Basal blood sample (10ml plain clotted) for cortisol
Give 250ug of Synacthen (Tetracosactrin, available from pharmacy) either im or iv.

Time 30 Collect sample for cortisol (as above) at exactly 30min.
Send both samples to the laboratory (in the same bag)
Ensure tubes are clearly labelled 0 min and 30 min and put “Short Synacthen Test” on the form (only 1 form is required)

N.B. In some situations (i.e. outpatient or strong suspicion of Addison's disease) a specimen for ACTH should be taken at the same time as the time 0 cortisol. Specimens for ACTH must not be taken after administering Synacthen. The ACTH will only be assayed if the cortisol response is inadequate.

ACTH assay: 5ml EDTA plasma
Pink top plastic tube
Collect specimen on ice and send to Clinical Chemistry immediately

Further Investigations
Further tests are available to help confirm the presence and cause of adrenal hypofunction
Contact either the duty Biochemist or Consultant Endocrinologist at this stage.
References

Disorders of the Adrenal Cortex. Bailliere’s Clinical Endocrinology and Metabolism
1992; 6(1): 41-55

Disclaimer: These guidelines have been registered with the Trust. However, clinical guidelines are guidelines only. The interpretation and application of the clinical guidelines will remain the responsibility of the individual clinician. If in doubt contact a senior colleague or expert. Caution is advised when using guidelines after the review date.