# Hypopituitarism



## Epidemiology

- Incidence ~4 per 100 000 per year.

## Causes

- Pituitary tumours: 95% cases. e.g. adenomas
- Non-pituitary tumours: craniopharyngiomas, meningiomas, brain tumours, metastases
- Infiltrative processes: sarcoidosis, histiocytosis X, haemochromatosis
- Infections: cerebral abscess, meningitis, encephalitis, tuberculosis, syphilis
- Ischaemia and infarction: SAH, ischaemic CVA, Sheehan's syndrome, pituitary apoplexy
- Empty sella syndrome: radiological diagnosis
- Iatrogenic: irradiation, neurosurgery
- Shy Drager syndrome
- Head injury
- Congenital: Kallmann's syndrome
- Autoimmune: lymphocytic hypophysitis
- Pituitary hypoplasia or aplasia
- Genetic causes, e.g. PIT1, PROP1 gene mutations, septo-optic dysplasia
- Idiopathic causes

## Presentation

- Depends on the aetiology, rapidity of onset, and predominant hormones involved.
- May present with endocrine dysfunction:
    - ACTH deficiency: See secondary causes in Adrenal Insufficiency
    - TSH deficiency: See secondary causes in Hypothyroidism
    - Gonadotropin deficiency: oligomenorrhoea, loss of libido, infertility, osteoporosis
    - Growth hormone deficiency: ↓muscle mass and strength, visceral obesity, fatigue, decreased quality of life, ↓attention and memory, dyslipidaemia
    - Antidiuretic hormone deficiency: DI rare
- May also present with features attributable to the underlying cause:
    - SOL: headaches or visual field deficits
    - Large lesions involving the hypothalamus: polydipsia, SIADH

## Hypopituitary coma

- Usually slow onset in known hypopituitarism. May occur suddenly with pituitary apoplexy.
- Sudden onset (apoplexy) → haemorrhage and meningism and may be difficult to distinguish from a subarachnoid haemorrhage. Other features at presentation include ophthalmoplegia, reduced consciousness, hypotension, hypothermia and hypoglycaemia.

## Differential diagnosis

- Polyglandular autoimmune syndromes
- Pituitary adenoma

## Investigations

*Bloods:* UEC, BSL, TFTs, PRL, gonadotrophins, ACTH, cortisol.
*Imaging:* Cranial MRI.

## Management

*Hormone replacement*

- Glucocorticoids as per Adrenal Insufficiency if ACT-adrenal axis impaired.
- Thyroid hormone replacement for secondary hypothyroidism
- Testosterone replacement for men and oestrogens, with or without progesterone, for women (COCP for pre-menopausal women) if gonadotropin deficiency:
- Growth hormone replacement for children.

*Surgical*

- In pituitary apoplexy, prompt surgical decompression may be life saving.
- Extirpate macroadenomas that do not respond to medical therapy.
- Other precipitant tumours may be amenable to surgery

## Complications

- Morbidity is variable depending on degree of hormone deficiency and underlying cause.

## Prognosis

- Mortality is increased by a factor between 1.3 and 2.2
- If adequately replaced, prognosis in hypopituitarism is good. Prognosis is therefore usually dependent on the underlying cause.

## Prevention

- Good obstetric care has reduced the incidence of postpartum hypopituitarism.
- Radiation therapy that minimizes exposure to the pituitary reduces incidence and time of onset of hypopituitarism.
- Improved neurosurgery techniques reduce the likelihood of subsequent hypopituitarism.