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Addisons disease

What is Addison's disease?

Addison's disease is a hormonal disorder resulting from a severe or total deficiency of the hormones made in the adrenal cortex. The adrenal cortex is the outer portion of the adrenal gland, of which there are two, located above each kidney. Two important hormones made by the adrenal cortex are cortisol and aldosterone. They are both essential for the normal functioning of the body. In particular, aldosterone regulates salt and water levels which affect blood volume and blood pressure.

Near total or total destruction of the adrenal glands results in neither of these hormones being produced and a condition called primary adrenal insufficiency or Addison's disease (first described by Dr Thomas Addison in 1855).

What causes Addison's disease?

There are several causes of Addison's disease:

- [Tuberculosis](#) was the leading cause of Addison's disease up until the middle of the 20th century, when antibiotics were introduced that successfully treated TB.
- Nowadays, the major cause is an auto-immune disorder in which the body's immune system makes antibodies which attack the cells of the adrenal cortex and slowly destroys them. This can take months to years.
- Other less common causes include other chronic infections, cancer that has spread to the adrenals, CMV virus, and surgical removal of the adrenal glands.

What are the signs and symptoms of Addison's disease?

The signs and symptoms of Addison's disease are generally non-specific and include fatigue, weakness, weight loss, nausea, abdominal pain, diarrhoea, vomiting and mood disturbances. These symptoms steadily worsen over time due to the slowly progressive loss of cortisol and aldosterone production.

The following skin signs may be indicative of Addison's disease and should prompt further investigations and appropriate tests.

- Generalised darkening of the skin (hyperpigmentation) that may look like an inappropriate tan on a very ill person
- Hyperpigmentation is most evident on areas exposed to light, but also affects the body folds, sites of pressure and friction, and in the creases of palms and soles
- Hyperpigmentation may also appear prominent on the nipples, armpits, genitals and gums (buccal mucosa)
- Women may have loss of androgen-stimulated hair, such as pubic and underarm hair

How is diagnosis made?

Due to the slowly progressive chronic symptoms, the diagnosis is often not made until abnormal results from routine blood tests are found. If the diagnosis has not been suspected, the patient may have an Addisonian crisis, triggered from a sudden event like a 'flu virus, accident, or surgery. An Addisonian crisis is a medical emergency

and requires immediate treatment with intravenous hydrocortisone.

If Addison's disease is suspected, tests measuring cortisol and aldosterone blood and urine levels must be performed to make a definitive diagnosis.

What is the treatment for Addison's disease?

Treatment of Addison's disease is with replacement steroid hormones that are tapered to suit the physiological requirements of the individual patient.

- Cortisol is usually replaced orally by cortisone acetate or hydrocortisone tablets
- Aldosterone is replaced by an aldosterone-like synthetic steroid, fludrocortisone tablets

Treatment with replacement hormones is life-long and can never be stopped. Routine care should include regular doctor's visits, special attention and possibly extra medication during times of illness, and an awareness of circumstances that may trigger an adrenal crisis, e.g. dehydration/salt loss during vigorous exercise.

Patients with Addison's disease should wear an identification bracelet or necklace (e.g. Medic Alert) stating that they have the disease, to ensure proper emergency steroid treatment is given when necessary.

Related information

References

- Book: Textbook of Dermatology. Ed Rook A, Wilkinson DS, Ebling FJB, Champion RH, Burton JL. Fourth edition. Blackwell Scientific Publications.

On DermNet NZ:

- [Skin pigmentation](#)

Other websites:

- [Addison Disease](#) - emedicine dermatology, the online textbook

Books about skin diseases:

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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