Hydrocortisone Emergency Factsheet for Ambulance Personnel

Hydrocortisone emergency in pituitary patients: adrenal/addisonian crisis. This is potentially life threatening and may be fatal if untreated.

One difficulty for ambulance staff is that the instance of call-out to patients with addisonian crisis will be a rare event but rapid response to save lives is vital and therefore it must be recognised immediately. Any patient with a known pituitary condition or steroid dependence should be considered at high risk, as would those suffering trauma.

Secondary adrenal insufficiency

Hydrocortisone is a steroid hormone produced by the adrenal gland. It plays a complex role in regulating body functions and is essential for survival.

Hydrocortisone is taken as a replacement for the natural hormone where this is deficient, either because of:
a) pituitary gland deficiency of ACTH (the hormone that stimulates the production of hydrocortisone by the adrenal gland); this is referred to as **secondary adrenal insufficiency** OR
b) failure of hydrocortisone production by the adrenal gland itself (Addison's Disease) which is referred to as **primary adrenal insufficiency**.

A good majority of people with pituitary gland conditions have to take replacement hydrocortisone daily (so they are *steroid dependent patients*) as they don't produce this naturally i.e. they have secondary adrenal insufficiency. If any person became ill, or were to suffer severe shock, the body would naturally increase the output of cortisol from the adrenals. However, people who need to take replacement hydrocortisone have to increase their 'chemical' dose to help mimic the cortisol surge they don't naturally have.

If the patient has a mild illness such as a basic cold or flu, they would increase their hydrocortisone tablet dose and recover normally. But if the patient is vomiting, has a serious illness, is involved in an accident and suffers severe shock they would, and quite quickly, experience what pituitary patients and their families may term a 'cortisol crisis, or, as more commonly known in medical circles as an **'adrenal' or 'Addisonian crisis'.**

JRCALC Guidelines

All ambulance services are issued with the national guidelines from JRCALC and 'Hydrocortisone for adrenal crises' is included within these guidelines.

The JRCALC drug protocol for hydrocortisone allows Paramedics to administer hydrocortisone to patients when needed. When an Addisonian Crisis is suspected, adult patients should be given a *100 mg injection of hydrocortisone*, either through IM or IV injection in line with JRCALC guidelines. **(Please remember that pituitary patients may say that they are a 'pituitary patient' and they are having a 'cortisol or hydrocortisone crisis', and not use the terminology 'addisonian crisis'.)**

In the stressful situations as described above, an emergency hydrocortisone injection is vital as it is needed to save the patients' life. If the injection is delayed the patient's condition can deteriorate very quickly as blood pressure drops. In such circumstances there is even chance of inducing coma.

Useful Information

The Pituitary Foundation charity provides patients taking hydrocortisone with a patient care card, giving details of their condition and medication, which they may present to you. Patients may also wear a medical alert bracelet or necklace displaying the following: 'Hypopituitarism—on steroid medication' or 'Steroid Dependant—Hydrocortisone'.

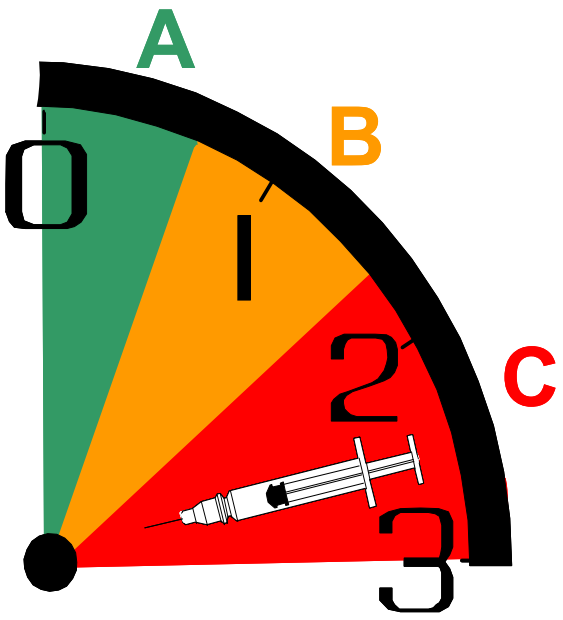
There may be a patient-specific protocol (PSP) in place in your Ambulance Trust. If a patient has registered with your Trust with a PSP this should alert you that they take hydrocortisone and need urgent assistance and treatment

Any patient with a known pituitary condition and who is steroid (hydrocortisone) dependant should be considered at high risk.

The clinical presentation of an Addisonian Crisis can include:

- Sudden penetrating pain in the legs, lower back or abdomen
- Severe vomiting and diarrhoea resulting in dehydration
- Hypotension when sitting or even lying
- Syncope
- Hypoglycaemia
- Confusion and slurred speech
- Fatigue
- Convulsions

Peak Timings for Clinical Use



A = period of first feeling unwell (within, or up to, one hour)

B = period of increasing illness (failure to retain oral cortisol) (during 2nd hour)

C = DANGER ZONE
emergency cortisol injection needed (by the 3rd hour)

Further information and free resources

Visit www.pituitary.org.uk or telephone 0117 370 1333