



EMS Protocol- Acute Adrenal Crisis

The [National EMS Information System \(NEMSIS\)](#) has included a medical adrenal insufficiency code (9914195i) to alert emergency medical personnel of this life-threatening situation. It is also classified at the [NEMSIS](#) database alongside 9914197 (Apparent Life-Threatening Event-ALTE) Patients presenting with an acute adrenal crisis are experiencing a critical low cortisol level, which is fatal if left untreated. Cortisol deficient patients may be identified by medical-alert jewelry, a medical-alert card, a medical letter and/or the presence of an emergency cortisol injection vial. Presentation of a vial of patient-held injectable hydrocortisone incites verification of adrenal insufficiency status and suggests protocol adherence by emergency medical personnel.

Symptomatic criteria may include, but is not limited to:

- Abdominal pain
- Altered mental status
- Confusion
- Dehydration
- Dizziness
- Fatigue
- Flank pain
- Headache
- Lethargy
- Lightheadedness
- Loss of consciousness
- Nausea
- Shaking/tremors
- Slow or slurred speech
- Vomiting

All symptoms may not always be present in suspected or impending/imminent/anticipated adrenal crisis. If adrenal crisis is suspected, medical personnel should administer injectable hydrocortisone in the field. In the event a hydrocortisone injection is not available, an injection of solumedrol vial can be used as an alternative. Patient outcome is fatal if cortisol levels do not recover in a timely manner and the risk of physical damage increases the longer the patient suffers a critically low cortisol level. Prompt administration of cortisol in the pre-hospital setting is recommended to avert disability or mortality. There is no way to check cortisol levels outside of a laboratory setting, therefore, EMS personnel should always administer an emergency injection if low cortisol is suspected. There is no clinical rationale to restrict the prompt injection of hydrocortisone to treat adrenal crisis to patients presenting

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with a critical low cortisol level. The body can excrete unused, excess cortisol, making the risk of overdose in an adrenal insufficient patient virtually impossible. Preservatives such as benzyl alcohol which may be found in some formulations of injectable hydrocortisone should not deter the administration of a hydrocortisone injection to adrenal deficient infants. However, the emergency department should be alerted regarding the risks associated with benzyl alcohol in newborns.

Proper administration of an emergency cortisol injection:

- Open box containing two-chamber vial of Solu-Cortef (Or Solu-Medrol if preferred hydrocortisone injection is unavailable.)
- Press the colored cap down, so that the liquid can mix with the powder.
- Carefully shake the contents until the powder dissolves. (When the powder is completely dissolved, the solution will appear clear.)
- Ensure the cap covering of the vial has been removed then sanitize top of vial with an alcohol prep pad.
- Insert an intramuscular syringe that can hold at least 1ml of fluid into the vial.
- Draw full contents into the syringe.
- Quickly choose an intramuscular site to administer the injection such as the thigh, buttocks or the upper part of the arm.
- Clean the chosen site area with alcohol prep before administering the full injection to treat an acute adrenal crisis.

After the administration of an emergency cortisol injection, the patient should be immediately transported to the closest emergency department and adrenal insufficiency/adrenal crisis status must be communicated. Additional protocols should be considered as appropriate to treat issues adrenal crisis may cause such as: hypotension, hypoglycemia, hypovolemia, hyponatremia, shock, and seizures, etc. The administration of saline IV's may be indicated in patients with salt wasting forms of adrenal insufficiency.

This protocol clearly defines the immediate needs of a person in a low cortisol state. EMS personnel now have the knowledge to recognize and properly treat an adrenal crisis by administering an emergency cortisol injection in a timely manner to prevent mortality and physical damage/comorbidities associated with an acute adrenal crisis. If budget permits, we also request the stocking of injectable hydrocortisone on ambulances.

Thank you for your assistance in sharing this information with your emergency medical staff. Please do not hesitate to contact Adrenal Alternatives Foundation with feedback or questions. Additional information and guidelines can be found at adrenalalternatives.com.

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