Adrenal Crisis: Assisting Patients with their Emergency Medications for EMS

I. Assisted medication administration

A. EMTs and Paramedics may be requested to assist with the administration of a specific, physician-prescribed, emergency medication.

B. 22 CCR § 100063 (a)(8)(N) allows EMTs, under basic scope, and by extension AEMTs and Paramedics under 22 CCR § 100106 (a), and § 100146 (a), respectively, to assist patients with the administration of physician-prescribed devices including, but not limited to, patient-operated medication pumps, sublingual nitroglycerin, and self-administered emergency medications, including albuterol or epinephrine via auto injector.

C. Paramedics may perform any activity in the scope of practice of an EMT.

D. State law authorizes Paramedics to assist a patient or parents/guardian who request help administering a physician-prescribed emergency medication as part of basic scope, and therefore can assist patients in delivering normally self-administered medications by administration routes within their scope of practice, such as intramuscular (IM) hydrocortisone (Solu-Cortef®).

E. Most EMS clinicians will not be familiar with self-administered medications such as SoluCortef®, therefore patients and parents/guardian who anticipate a potential need for EMS assistance should engage with their local EMS public provider agency to notify of the potential need so that responding providers can be aware and trained.

F. Patients and families should have physician instructions readily available for EMS clinicians to use when assisting as a best-practice with information to include:

1. Medication indications (e.g. vital signs, symptoms, physical exam findings)
2. Medication dosing (mg, concentrations, frequency)
3. Hospital destination recommendation

G. If time/situations allows, paramedics can contact the Base Hospital for physician medical direction regarding these clinical scenarios.

II. Specific Conditions:

A. Adrenal crisis is a life-threatening condition that occurs in patients with adrenal insufficiency disorders.

1. Patients with adrenal insufficiency disorders have dysfunction in cortisol production, adrenal gland function or pituitary gland function.
2. Adrenal insufficiency disorder examples include: Congenital Adrenal Hyperplasia (CAH), Addison's Disease, pituitary disease, and chronic steroid use.
3. In adrenal crisis, the body cannot produce adequate amounts of cortisol (a steroid hormone), resulting in adrenal crisis where the body cannot maintain homeostasis due to the lack of cortisol.

B. Patients with adrenal insufficiency may have adrenal crisis with physical stressors.

1. Stresses (e.g. fever, infection, physical stress, trauma, dehydration, surgery, sudden discontinuation of medication, or injury to the pituitary or adrenal gland) to the normal physiology of a patient with adrenal insufficiency disorders can result in life threatening consequences.

Resources: Miller et al. Emergency management of adrenal insufficiency in children: advocating for treatment options inoutpatient and field settings. *J Investig Med.* 2020 Jan;68(1):16-25
Training Video Available at https://vimeo.com/977115534/12e10910c8?tq=#t=18

2. The signs and symptoms of an adrenal crisis are non-specific, therefore a high level of suspicion should be maintained in patients with adrenal insufficiency disorders. IF LEFT UNTREATED ADRENAL CRISIS CAN RESULT IN DEATH.
3. Signs and Symptoms of adrenal crisis include:

Nausea/Vomiting	Fever	Pallor	Confusion
Weakness	Tachycardia	Tachypnea	Hypoglycemia
Hypotension	Shock		

Patients or families who have a child with adrenal insufficiency will be aware of their condition. When these patients experience or are at risk for an adrenal crisis, the proper treatment is intramuscular (IM) hydrocortisone (Solu-Cortef®). During this emergency, the patient or caregiver may not be able to properly deliver the IM medication and might request assistance from the EMS system. In this type of an emergency Paramedics can assist the patient or caregiver with drawing up and administering the Solu-Cortef®. The caregiver, if available, should be familiar with the proper dosage and should have the necessary equipment. In some cases, such as when a child is at school, the school personnel may have medication and instructions available.

III. Procedure

A. If a patient has symptoms of adrenal crisis, the paramedic can assist the patient, or patient's caregivers in administering IM hydrocortisone (Solu-Cortef®).
B. If faced with this situation, Base Contact can be made for medical direction.
C. All patients in adrenal crisis or at risk for adrenal crisis shall be transported to the emergency department, even if the symptoms appear to improve.

IV. General Information about IM hydrocortisone (Solu-Cortef®, 100mg/2mL)

A. Dosing:
   1. Age 0-2 years: Dose is 25 mg (0.5mL) IM
   2. Age 3-9 years: Dose is 50 mg (1 mL) IM
   3. Age 10 years and older: Dose is 100 mg (2mL) IM

   *Note, the above represents general dosing parameters. If there is a discrepancy, EMS should following instructions on the patient's prescription when assisting.
B. Hydrocortisone (Solu-Cortef®) should be given as soon as possible when any signs or symptoms of adrenal crisis present in patients with adrenal insufficiency disorders and can be life-saving.

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