

Protocol 9-5

SECTION: Pediatric General Medical Emergencies

PROTOCOL TITLE: Medical – Diabetic – Hyperglycemia

REVISED: 06/2017

OVERVIEW:

Diabetes mellitus is the most common endocrine disorder of childhood, affecting approximately 2/1,000 school-age children in the United States. Symptomatic hyperglycemia is defined as a blood glucose level > 300 mg/dl with signs of severe dehydration, altered mental status, and/ or shock. Hyperglycemia is usually the result of an inadequate supply of insulin to meet the body's needs. Most pre-hospital care should be focused around the treatment of severe dehydration and support of vital functions.

HPI	Signs and Symptoms	Considerations
<ul style="list-style-type: none"> History of diabetes Onset of symptoms Medications 	<ul style="list-style-type: none"> Anxiety, agitation, and / or confusion Dry, red, and / or warm skin Fruity / acetone smell on breath Kussmaul respirations Dry mouth, intensive thirst Abnormal/ hostile behavior Tachycardia Dizziness / headache 	<ul style="list-style-type: none"> Hypoxia Brain trauma Alcohol intoxication Toxin / substance abuse Medication effect / overdose

	EMR	EMT	A	I	P
1. Perform general patient management.	•	•	•	•	•
2. Support life-threatening problems associated with airway, breathing, and circulation.	•	•	•	•	•
3. Assess for signs of trauma. Provide spinal immobilization as necessary.	•	•	•	•	•
4. Administer oxygen to maintain <u>SPO₂</u> 94 - 99%	•	•	•	•	•
5. For altered mental status, perform rapid glucose determination.		•	•	•	•
6. If glucose > 300 mg / dL, start an IV of normal saline.			•	•	•
7. For signs and symptoms of hypovolemic shock or dehydration, follow the <u>Pediatric Shock protocol</u> .	•	•	•	•	•

HYPERTGLYCEMIA

Protocol

9-5

Continued

HYPERGLYCEMIA

	EMR	EMT	A	I	P
8. If glucose level is > 300 mg / dL, and no signs of shock are noted, administer maintenance Normal Saline infusion: <ul style="list-style-type: none">• 4.0 ml / kg for first 1 - 10 kg of weight.• Add 2.0 ml / kg for next 11 - 20 kg of weight.• Add 1.0 ml / kg, for every kg of weight, > 20 kg.• Multiply total amount x 2= total hourly hyperglycemic maintenance amount.			•	•	•
9. Place on cardiac monitor and obtain / interpret <u>12 lead ECG</u> per assessment.				•	•
10. Transport and perform ongoing assessment as indicated.		•	•	•	•

PEARLS:

1. Know your specific agency's glucometer parameters for a "HI" and "LO" reading.
2. It is estimated that 2 - 8% of all hospital admissions are for the treatment of DKA, while mortality for DKA is between 2 - 10%. Published mortality rates for HHS vary, but the trend is that the older the patient and higher the osmolarity, the greater the risk of death.