

ED OBSERVATION UNIT: HYPERGLYCEMIA PROTOCOL

NYC H+H KINGS COUNTY HOSPITAL CENTER

General Observation Guidelines apply for all ED observation patients.

INCLUSION CRITERIA	EXCLUSION CRITERIA
<ul style="list-style-type: none"> Blood glucose > 400 mg/dL with metabolic derangements (especially for new diagnosis of diabetes) Treatable cause (e.g. medication noncompliance, UTI, abscess) if present 	<ul style="list-style-type: none"> Ketoacidosis requiring continuous IV insulin therapy (e.g. pH < 7.3, CO₂ < 18, anion gap > 15 with evidence of ketones [beta-hydroxybutyrate or urine ketones]. No specific level of BHB is diagnostic or specific for DKA requiring IV insulin) Serious precipitating cause that would otherwise necessitate admission Hyperosmotic non-ketotic coma

INTERVENTIONS
<ul style="list-style-type: none"> Serial finger stick glucose Insulin administration IV fluid administration Electrolyte monitoring and administration as indicated Treatment of precipitating cause Diabetic counseling Care management

DISPOSITION
<div> <div> Home: <ul style="list-style-type: none"> Precipitating factor(s) addressed if present Adequate follow up including 72 hour follow up for new onset DM </div> <div> Admission: <ul style="list-style-type: none"> Deterioration of clinical status Widening anion gap or increasing ketones which may necessitate the use of IV insulin infusion </div> </div>

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Sources

1. Arora S, Henderson SO, Long T, Menchine M. Diagnostic accuracy of point-of-care testing for diabetic ketoacidosis at emergency-department triage: {beta}-hydroxybutyrate versus the urine dipstick. Diabetes care. 2011;34(4):852-854.
2. Brooke J, Stiell M, Ojo O. Evaluation of the Accuracy of Capillary Hydroxybutyrate Measurement Compared with Other Measurements in the Diagnosis of Diabetic Ketoacidosis: A Systematic Review. International journal of environmental research and public health. 2016;13(9).
3. Driver BE, Klein LR, Cole JB, Prekker ME, Fagerstrom ET, Miner JR. Comparison of two glycemic discharge goals in ED patients with hyperglycemia, a randomized trial. Am J Emerg Med. 2018.
4. Driver BE, Olives TD, Bischof JE, Salmen MR, Miner JR. Discharge Glucose Is Not Associated With Short-Term Adverse Outcomes in Emergency Department Patients With Moderate to Severe Hyperglycemia. Ann Emerg Med. 2016;68(6):697-705.e693.
5. Ferguson I, Mullins ME. Diagnostic accuracy of fingerstick beta-hydroxybutyrate for ketonuria in pregnant women with nausea and vomiting. Academic emergency medicine : official journal of the Society for Academic Emergency Medicine. 2013;20(9):954-956.
6. Mahler SA, Conrad SA, Wang H, Arnold TC. Resuscitation with balanced electrolyte solution prevents hyperchloremic metabolic acidosis in patients with diabetic ketoacidosis. Am J Emerg Med. 2011;29(6):670-674.
7. Naunheim R, Jang TJ, Banet G, Richmond A, McGill J. Point-of-care Test Identifies Diabetic Ketoacidosis at Triage. Acad Emergency Med. 2006;13(6):683-685.
8. Tran TTT, Pease A, Wood AJ, et al. Review of Evidence for Adult Diabetic Ketoacidosis Management Protocols. Frontiers in endocrinology. 2017;8:106.
9. Zehtabchi S, Sinert R, Wallace D, et al. Is routine electrolyte testing necessary for diabetic patients who present to the emergency department with moderate hyperglycemia? European journal of emergency medicine : official journal of the European Society for Emergency Medicine. 2007;14(2):82-86.

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