

CAT – Block 8
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Question: Does discharge hyperglycemia have associated short-term adverse outcomes?

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.

Background: Hyperglycemia is frequently encountered in the emergency department (ED), and there is no consensus on optimal care before discharge. The importance of glucose reduction in the ED is unknown. We seek to determine whether an association exists between discharge glucose and 7-day adverse outcomes.

Methods: A cohort design with retrospective chart review was conducted at a high-volume urban ED. Patients were included if any glucose level was greater than or equal to 400 mg/dL and they were discharged from the ED. Generalized estimating equation models were created for the 7-day outcomes with a primary predictor of discharge glucose

Results: The cohort consisted of 422 patients with 566 ED encounters. Mean arrival and discharge glucose were 491 mg/dL (SD 82 mg/dL) and 334 mg/dL (SD 101 mg/dL), respectively. In the 7-day follow-up period, 62 (13%) and 36 (7%) patients had a repeat ED visit for hyperglycemia and were hospitalized, respectively. Two patients had diabetic ketoacidosis. After adjustment for arrival glucose, whether a chemistry panel was obtained, amount of intravenous fluids administered, and amount of subcutaneous insulin administered, discharge glucose was not associated with repeat ED visit for hyperglycemia (adjusted odds ratio 0.997; 95% confidence interval 0.993 to 1.001) or hospitalization for any reason (adjusted odds ratio 0.998; 95% confidence interval 0.995 to 1.002).

Discussion: Hyperglycemia at ED discharge was not associated with short-term adverse outcomes. This study supports discharge in hyperglycemia patients without evidence of DKA or HHNK. Secondary outcomes measured during this study included follow-up at 7-days and 30-days with over half of the patients not having 7-day follow and greater than 10% not having follow-up within one month. Although these patients are likely safe to discharge in regards to short-term adverse effects, a focused discussion on glycemic control and need for close follow-up to decrease long-term risk is still an important part of the ED visit.
