



About one-third of patients had refractory or recurrent hypoglycemia and infection was associated with this occurrence. Lack of dextrose containing intravenous fluid was associated with the incidence of recurrent hypoglycemia” Bilhimer et al (2016).

Abstract:

Purpose: To characterize hypoglycemia management and identify characteristics associated with refractory (need for additional treatment following initial management) and recurrent (adequate initial treatment followed by blood glucose [BG] ≤ 50 mg/dL) hypoglycemia.

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Methods: Retrospective review of adult emergency department (ED) patients who presented to a large academic medical center with hypoglycemia (BG ≤ 50 mg/dL) between January 2011 and July 2015. Data collection focused on BG measurements and treatment practices. Data are reported using descriptive statistics, Wilcoxon rank sum, and χ^2 analysis as appropriate.

Results: Two hundred forty-four patients were included (mean age, 59 ± 18.7 years; weight, 85 ± 24.3 kg). Patients arriving via prehospital care (n = 124) were assessed faster in the ED

(median, 25 minutes; interquartile range , 10-40 minutes) compared with ambulatory arrival (median, 43 minutes; IQR, 17-95 minutes; $P = .0018$). There were 174 patients with a BG ≤ 50 mg/dL in the ED. Of those, 108 (62.1%) were treated with intravascular bolus dextrose/intramuscular glucagon and 21 patients (12%) did not receive any treatment or food. The overall median time to treatment after identification of hypoglycemia was 12 minutes (IQR, 6-27.8 minutes); treatment was administered faster after bedside point-of-care testing assessment compared with when serum samples resulted (11 minutes vs 25 minutes, respectively; $P = .015$). The overall time to repeat BG was obtained 22 (IQR, 8-44) minutes after bolus treatment, but this interval increased with subsequent measurements. Refractory or recurrent hypoglycemia occurred in 30.3% of patients. Mean initial BG was lower in the subset of patients who developed refractory hypoglycemia compared with those who did not (35.1 ± 9.8 vs 37.6 ± 10.2 mg/dL, $P = .079$), although not statistically significant. Patients with recurrent hypoglycemia were also less likely to receive dextrose containing intravenous fluids compared with those without recurrent hypoglycemia ($P = .028$). Infection was the only associated characteristic with refractory or recurrent hypoglycemia ($P = .021$).

Conclusions: Overall, 12% of patients did not receive treatment for hypoglycemia in the ED with a BG ≤ 50 mg/dL. Time to treatment after identification was faster when identified by care testing vs serum sample result. Time to repeat BG in the ED was relatively quick, but did increase over time. About one-third of patients had refractory or recurrent hypoglycemia and infection was associated with this occurrence. Lack of dextrose containing intravenous fluid was associated with the incidence of recurrent hypoglycemia.

Reference:

Bilhimer, M.H., Treu, C.N. and Acquisto, N.M. (2016) Current practice of hypoglycemia management in the ED. The American Journal of Emergency Medicine. October 7th. .

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