Outcomes of Community-Dwelling Adults without Diabetes Mellitus Who Require Ambulance Services for Hypoglycemia

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Abstract

Objective:
We evaluate the prevalence, etiology, and outcomes of hypoglycemia requiring emergency medical services (EMS) in patients without diabetes mellitus (non-DM).

Methods:
We reviewed medical records of all ambulance calls for non-DM with blood glucose <70 mg/dl in Olmsted County, Minnesota, between January 1, 2003, and December 31, 2009.

Results:
A total of 131 patients (age 51 ± 19 years; 54% females) made 142 EMS calls, while 10 patients made repeated calls. Causes of hypoglycemia were critical illness (42; 32%), alcohol and polysubstance use (36; 27.5%), insulinoma/bariatric surgery (10; 8%), restricted oral intake (7; 5%), and multiple factors (3; 27.5%). Patients with alcohol and polysubstance abuse were younger (p = .002). A total of 54 patients had additional hypoglycemia predisposing comorbidities/factors [adrenal insufficiency (2), end-stage renal disease (11) and chronic liver disease (7), beta blockers use (34), and pentamidine use (1)]. Repeated calls and emergency room transportation were similar, but hospitalization varied across the etiologies, with the lowest proportion in the multiple-factor-related hypoglycemia group (p = .01). Duration of follow-up was 1.28 (interquartile range 0.13–2.70) years. A total of 38 patients died, and age-adjusted mortality varied across different etiologies (p < .001), with highest among critically ill. Cancer caused the highest number of deaths (7/38; 18%), while 1 death was due to hypoglycemia.

Conclusions:
There were multiple etiologies for hypoglycemic episodes in community-dwelling non-DM that required EMS. Critical illness, multifactorial causes, and alcohol/polysubstance abuse were common causes. Hospitalization and mortality were higher with critical illnesses.


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Abbreviations: (AI) adrenal insufficiency, (CLD) chronic liver disease, (DM) diabetes mellitus, (EMS) emergency medical services, (ERT) emergency room transportation, (ESRD) end-stage renal disease, (IQR) interquartile range, (non-DM) patients without diabetes mellitus

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