

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

Ajay K. Parsaik, M.B.B.S.,¹ Rickey E. Carter, Ph.D.,² Lucas A. Myers,^{3,4}
Ming Dong, M.D.,¹ Ananda Basu, M.D.,¹ and Yogish C. Kudva, M.D.¹

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; 2.5 %). 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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Author Affiliations: ¹Division of Endocrinology, Diabetes, Nutrition, and Metabolism, Department of Internal Medicine, Mayo Clinic, Rochester, Minnesota; ²Department of Health Sciences Research, Division of Biomedical Statistics and Informatics, Mayo Clinic, Rochester, Minnesota; ³Mayo Clinic Medical Transport, Mayo Clinic, Rochester, Minnesota; and ⁴Department of Emergency Medicine, Mayo Clinic, Rochester, Minnesota

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

Keywords: emergency medical services, emergency room, hypoglycemia, non-diabetes

Corresponding Author: Yogish C. Kudva, M.B.B.S., 200 First St. SW, Rochester, MN 55902; email address kudva.yogish@mayo.edu