Proximal HbA_{1C} Level and First Hypoglycemia Hospitalization in Adults With Incident Type 2 Diabetes

Victor W Zhong, Juhaeri Juhaeri, Stephen R Cole, Christina M Shay, Penny Gordon-Larsen, Evangelos Kontopantelis, Elizabeth J Mayer-Davis ,

The Journal of Clinical Endocrinology & Metabolism, Volume 104, Issue 6, June 2019, Pages 1989–1998, https://doi.org/10.1210/jc.2018-01402

Published: 03 January 2019 **Article history**

Cite Permissions Share

Abstract

Context

Hemoglobin A_{1C} (HbA_{1C}) is an important predictor of severe hypoglycemia.

Objective

To determine the association of proximal HbA_{1C} level with first hypoglycemia hospitalization (HH) in adults with incident type 2 diabetes (T2D).

Design, Setting, and Participants

A nested case-control study was designed using linked data from the Clinical Practice Research Datalink and Hospital Episode Statistics in England in 1997 to 2014. The first hypoglycemia event as primary diagnosis for hospitalization after T2D diagnosis was identified. Proximal HbA_{1C} was measured within 90 days before the first HH.

Main Outcome Measure

OR for developing HH.

Results

The association of proximal HbA_{1C} level with first HH was similar between HbA_{1C} levels of 6.0% (OR, 1.54; 95% CI, 1.12 to 2.11) and 9.0% [1.48 (1.01 to 2.17)] compared with the reference HbA_{1C} level of 7.0%. For proximal HbA_{1C} level of 4.0% to 6.5%, every additional 0.5% increase in HbA_{1C} was associated with lower first HH risk, with ORs (95% CI) ranging between 0.37 (0.20 to 0.67) and 0.86 (0.76 to 0.98). For proximal HbA_{1C} level of 8.0% to 11.5%, every additional 0.5% increase in HbA_{1C} was associated with higher first HH risk, with ORs (95% CI) ranging between 1.16 (1.04 to 1.29) and 1.34 (1.18 to 1.52). The U-shaped association between proximal HbA_{1C} level and first HH did not exist among current sulfonylurea users but persisted among current insulin users ($P_{interaction}$ = 0.002). Among current noninsulin nonsulfonylurea users who had a first HH, 78% took insulin or sulfonylureas before the HH.

Conclusions

Having either poor or near-normal HbA_{1C} was associated with a higher risk of first HH within 3 months in T2D.

Issue Section: Diabetes, Pancreatic and Gastrointestinal Hormones,

Password

Sign In

Forgot password?
Don't have an account?

Sign in via your Institution

Sign in

Purchase

Subscription prices and ordering

Short-term Access

To purchase short term access, please sign in to your Oxford Academic account above.

Don't already have an Oxford Academic account? Register

Proximal HbA1C Level and First Hypoglycemia Hospitalization in Adults With Incident Type 2 Diabetes - 24 Hours access

EUR €36.00 GBP £28.00 USD $45.00

View Metrics

Email alerts

New issue alert

In progress issue alert

Advance article alerts

Article activity alert

Receive exclusive offers and updates from Oxford Academic

Related articles in

Google Scholar

Citing articles via

Google Scholar

CrossRef

Latest | **Most Read** | **Most Cited**

Association between urinary triclosan with bone mass density and osteoporosis in the US adult women, 2005-2010

Genomic and transcriptomic characterization of papillary microcarcinomas with lateral neck lymph node metastases

Adrenal insufficiency after unilateral adrenalectomy in primary aldosteronism – long-term outcome and clinical impact

Recovery of the hypothalamo-pituitary-adrenal axis following trans-sphenoidal adenomectomy for non-ACTH secreting macroadenomas

Impaired 11β-Hydroxysteroid Dehydrogenase Type 2 in Glucocorticoid Resistant Patients

About The Journal of Clinical Endocrinology & Metabolism
About the Endocrine Society
Editorial Board
Author Guidelines
Contact Us

Facebook
Twitter
LinkedIn
Purchase
Recommend to your Library
Advertising and Corporate Services
Journals Career Network

Online ISSN 1945-7197
Print ISSN 0021-972X

About Us
Contact Us
Careers
Help
Access & Purchase
Rights & Permissions
Open Access

Resources
Authors
Librarians
Societies
Sponsors & Advertisers
Press & Media

Connect
Join Our Mailing List
OUPblog
Twitter
Facebook
YouTube
Tumblr

Explore
Shop OUP Academic
Oxford Dictionaries
Oxford Index
Epigeum
OUP Worldwide