ISSN 2208-150X (Print)
ISSN 2208-1518 (Online)

Practice UPDATE CONFERENCE SERIES

ADA 2023

AMERICAN DIABETES ASSOCIATION ANNUAL MEETING

JUNE 23–26, 2023 • SAN DIEGO, CALIFORNIA, USA

THE BEST OF ADA 2023

AI May Improve Prediction of Diabetic Retinopathy Progression

Bempedoic Acid Cuts Risk for Major Adverse Cardiovascular Events in Statin-Intolerant Patients

Dapagliflozin Not Tied to Improved Glycemia Outcomes Versus Basal-Bolus Insulin

Lower HbA1c With MI Admission Tied to Lower Likelihood of Preventive Medications

Metformin Combined With Usual Care a Safe Alternative for Gestational Diabetes

ELSEVIER

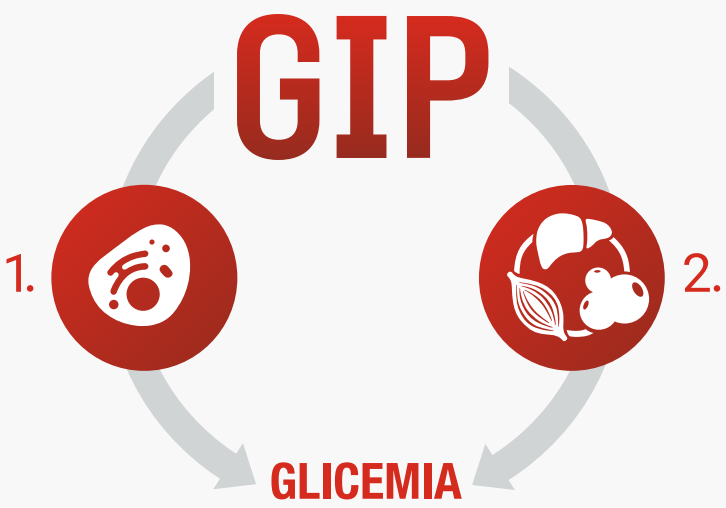
COME FUNZIONA IL GIP NEL CORPO UMANO?

GIP: uno dei due ormoni coinvolti nell'effetto incretinico[1]

Il GIP e il GLP-1 sono ormoni secreti dall'intestino in risposta al carico di nutrienti, e sono responsabili **dell'effetto incretinico, che aumenta la secrezione di insulina dopo il pasto.**[1]

Lilly

Nel diabete tipo 2, tre dei difetti fisiopatologici responsabili della sua natura progressiva sono l'**insulino-resistenza, la compromissione della secrezione di insulina e la compromissione dell'effetto incretinico**[2]



Il GIP potrebbe contribuire a mantenere stabili i livelli glicemici attraverso due azioni importanti

Studi preclinici hanno dimostrato che il GIP potrebbe contribuire alla regolazione della glicemia attraverso i suoi effetti sulla sensibilità insulinica.[1,3]

1. **Aumenta la secrezione di insulina glucosio-dipendente** da parte delle cellule beta[1]
2. **Aumenta la sensibilità insulinica**, secondo dati preclinici[4-6]

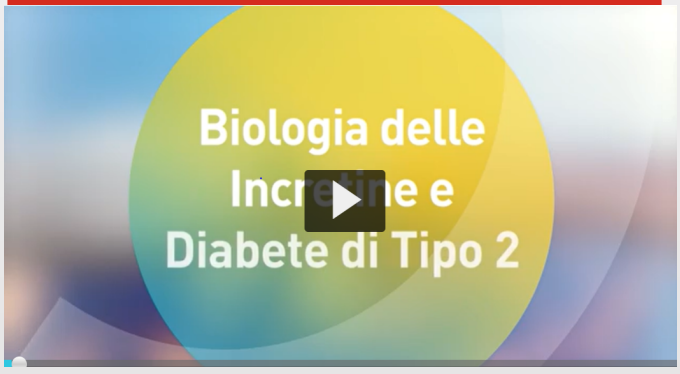
Sebbene il ruolo del GIP nell'effetto incretinico sia ben documentato,[1] sono allo studio ulteriori potenziali azioni di tale ormone, con la maggior parte delle informazioni proveniente in questo momento da studi preclinici.[4] **Le ricerche più recenti hanno dimostrato che il GIP può influire sui meccanismi legati al peso, come l'assunzione di cibo e l'appetito.**[3,5-11] Inoltre, numerosi studi di associazione genetica collegano il GIP alla regolazione dell'insulina, del glucosio, dei lipidi e del peso corporeo.[12-14]

Scopri di più sul GIP sul nostro sito web **powerofGIP**

Fai clic qui

Guarda ora:

Come funziona il GIP nel corpo umano



GIP = polipeptide insulinotropico glucosio-dipendente (Glucose-dependent Insulinotropic Polypeptide); **GLP-1 =** peptide glucagone-simile 1 (Glucagon-Like Peptide-1).

Bibliografia:
1. Nauck MA, Meier JJ. *Lancet Diabetes Endocrinol*. 2016;4(6):525-536. **2.** DeFronzo RA. *Am J Med*. 2010;123(3 Suppl):S38-S48. **3.** Adriaenssens AE, et al. *Cell Metab*. 2019;30(5):987-996. **4.** Mohammad S, et al. *J Biol Chem*. 2011;286(50):43062-43070. **5.** Kim SJ, et al. *PLoS One*. 2012;7(7):e40156. **6.** Finan B, et al. *Trends Mol Med*. 2016;22(5):359-376. **7.** Nauck MA, Meier JJ. *Diabetes*. 2019;68:897-900. **8.** Gasbjerg LS, et al. *Peptides*. 2020;125:170183. **9.** Mroz PA, et al. *Mol Metab*. 2019;20:51-62. **10.** Zhang Q, et al. *Cell Metab*. 2021;33(4):833-844.e5. **11.** NamKoong C, et al. *Biochem Biophys Res Commun*. 2017;490(2):247-252. **12.** Saxena R, et al. *Nat Genet*. 2010;42(2):142-148. **13.** Speliotes EK, et al. *Nat Genet*. 2010;42(11):937-948. **14.** Bowker N, et al. *Diabetes*. 2021;70(11):2706-2719.

Contents

American Diabetes Association Annual Meeting • June 23–26, 2023 •San Diego, California, USA

By the PracticeUpdate Editorial Team

PracticeUpdate
CONFERENCE SERIES

ABOUT

For a complete listing of disclosures for each board member and editorial contributor, please refer to their profile on PracticeUpdate.com

PracticeUpdate's mission is to help medical professionals navigate the vast array of available literature and focus on the most critical information for their patients and practice.

PracticeUpdate Conference Series is a collection of key research from leading international conferences, reviewed by the PracticeUpdate editorial and advisory board, made available in print format. These news highlights and more are also available online at PracticeUpdate.com Unless otherwise noted, all Conference Coverage is provided by the PracticeUpdate Editorial Team.

PracticeUpdate and the PracticeUpdate Conference Series are commercially supported by advertising, sponsorship, and educational grants. Individual access to PracticeUpdate.com is free. Premium content is available to any user who registers with the site.

While PracticeUpdate is a commercially sponsored product, it maintains the highest level of academic rigour, objectivity, and fair balance associated with all Elsevier products. No editorial content is influenced in any way by commercial sponsors or content contributors.

DISCLAIMER

The PracticeUpdate Conference Series provides highlights of key international conferences for specialist medical professionals. The ideas and opinions expressed in this publication do not necessarily reflect those of the Publisher. Elsevier will not assume responsibility for damages, loss, or claims of any kind arising from or related to the information contained in this publication, including any claims related to the products, drugs, or services mentioned herein. Because of rapid advances in the medical sciences, in particular, independent verification of diagnoses and drug dosages should be made. Please consult the full current Product Information before prescribing any medication mentioned in this publication.

Although all advertising material is expected to conform to ethical (medical) standards, inclusion in this publication does not constitute a guarantee or endorsement of the quality or value of such product or of the claims made of it by its manufacturer.

The production and distribution of this publication is sponsored by Eli Lilly. It contains content published in accordance with the editorial policies of Elsevier's PracticeUpdate.com. Content was produced by Elsevier with no involvement by the sponsor. All content printed in this publication can be found on PracticeUpdate.com

SALES

Stephanie Marquez s.marquez@elsevier.com

PRODUCTION

Content was originally published on PracticeUpdate.com

Content & Production Manager: Carolyn Ng

Production Managers:
Mickie Hall ma.hall@elsevier.com, Shweta Joshi

Designer: Jana Sokolovskaja

ISSN 2208-150X (Print) • ISSN 2208-1518 (Online)

ELSEVIER

ELSEVIER INC.

230 Park Avenue South
7th Floor, New York
NY 10010 United States

PracticeUpdate Editorial Board

PracticeUpdate is guided by a world-renowned Editorial and Advisory Board that represents community practitioners and academic specialists with cross-disciplinary expertise. Our centers of excellence leverage technology to create a collaborative and comprehensive way to improve patient care. These unique centers have the key advantages of a real-world academic center as well as the features and enhancements that only PracticeUpdate and Elsevier can provide to foster an expert-led team approach that helps you stay ahead. For a complete listing of disclosures for each board member and editorial contributor, please refer to their profile on PracticeUpdate.com.

Diabetes

Editor-in-Chief

Silvio E. Inzucchi MD
Professor of Medicine (Endocrinology); Clinical Director, Section of Endocrinology; Director, Yale Diabetes Center; Director, Endocrinology and Metabolism Fellowship, Yale School of Medicine, New Haven, Connecticut, USA

Associate Editors

Richard E. Pratley MD
Senior Investigator and Diabetes Program Lead, AdventHealth Orlando Translational Research Institute for Metabolism and Diabetes; Medical Director, AdventHealth Diabetes Institute, Orlando, Florida; Adjunct Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

Deborah J. Wexler MD, MSc
Associate Professor of Medicine, Harvard Medical School; Associate Clinical Chief, Diabetes Unit, and Clinical Director, Massachusetts General Hospital Diabetes Center, Boston, Massachusetts, USA

Advisory Board

Kathleen M. Dungan MD, MPH
Professor of Medicine and Associate Director of Clinical Services, Division of Endocrinology, Diabetes & Metabolism, The Ohio State University, Columbus, Ohio, USA

Editorial Contributors

Priyadarshini Balasubramanian MD
Assistant Professor in Endocrinology, Yale School of Medicine, New Haven, Connecticut, USA

Carolina Gonzalez-Lopez MD
Endocrine Fellow, Yale New Haven Hospital, New Haven, Connecticut, USA

Jacqueline A. Seiglie MD, MSc
Instructor in Medicine, Harvard Medical School; Endocrinologist, Massachusetts General Hospital, Boston, Massachusetts, USA

Jason Sloane MD
Endocrinologist, Slocum Dickson Medical Group, Utica, New York, USA

Obesity, Metabolic Syndrome and Prediabetes Center of Excellence

Editor-in-Chief

Silvio E. Inzucchi MD

Associate Editors

Richard E. Pratley MD

Deborah J. Wexler MD, MSc

Advisory Board

Kathleen M. Dungan MD, MPH

Peter Libby MD
Cardiovascular Specialist, Brigham and Women's Hospital, Boston, Massachusetts, USA

Benjamin Morgan Scirica MD
Cardiologist and Director, Innovation, Cardiovascular Division, Brigham and Women's Hospital, Boston, Massachusetts, USA

Editorial Contributors

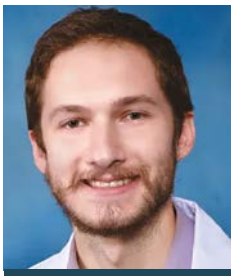
Priyadarshini Balasubramanian MD

Carolina Gonzalez-Lopez MD

Jacqueline A. Seiglie MD, MSc

Subcutaneous Insulin Safe and Effective for Treatment of Mild-to-Moderate DKA

Implementation of DKA PowerPlan with subcutaneous insulin lispro could alleviate existing ICU burdens.



Dr. Jacob Quaytman

A subcutaneous insulin analog can be safely and effectively used to treat mild-to-moderate diabetic ketoacidosis (DKA) in non-intensive care unit (ICU) settings, according to a study presented at the ADA meeting.

The traditional method of treatment for DKA has been a continuous intravenous insulin infusion requiring treatment either in the ICU or in a step-down unit, the researchers explain. But for mild-to-moderate cases (pH >7.0, bicarbonate ≥10) in which the patient is alert and able to tolerate oral fluid intake, subcutaneous rapid-acting insulin analogs have increasingly been used to decrease ICU utilization.

"ICU beds are a precious resource in busy hospital systems so efforts to reduce admissions or transfers for mild-to-moderate cases of DKA can lead to cost savings for hospitals and ensure that the sickest patients have access to care in an ICU. We hope that our study drives more institutions to implement evidence-based subcutaneous insulin protocols for mild-to-moderate DKA," Jacob Quaytman MD, of the University of Pittsburgh Medical Center (UPMC), told Elsevier's PracticeUpdate.

Quaytman and colleagues performed a retrospective chart review of patients for whom the adult DKA PowerPlan subcutaneous insulin lispro subphase was ordered between February and October 2022 across 15 UPMC network hospitals.

The researchers found that of the 111 cases analyzed, 47 properly utilized the assigned DKA PowerPlan with subcutaneous insulin lispro. DKA resolution was ultimately reached in 45 of the 47 cases. Hypoglycemia (blood glucose <70 mg/dL) occurred in nine encounters (19.1%), with only one encounter (2.1%) considered a direct result of the lispro PowerPlan.

"We would love to see similar studies looking at the safety and efficacy of using subcutaneous insulin to treat DKA across multiple institutions," Quaytman commented. "Studies specifically measuring the cost savings that come from preventing ICU admissions or transfers to a higher acuity hospital could also help increase the adoption of this strategy to treat DKA."

> "We would love to see similar studies looking at the safety and efficacy of using subcutaneous insulin to treat DKA across multiple institutions."

www.practiceupdate.com/c/154120

AI May Improve Prediction of Diabetic Retinopathy Progression

Machine learning application shows accuracy using ultrawide field retinal images.

Dr. Paolo S. Silva

A machine learning-based model is both feasible and accurate for identifying diabetic retinopathy progression developed using ultrawide field retinal images, according to a recent study.

Amber Nigam, from the Harvard T.H. Chan School of Public Health in Boston, and colleagues developed and validated machine learning models for diabetic retinopathy progression from ultrawide field retinal images. The images were labeled for baseline severity and progression based on clinician review of the images and 3-year longitudinal follow-up using the Early Treatment Diabetic Retinopathy Study severity scale.

The researchers found the dataset consisted of eight severity classes: no disease progression (14.62%), mild nonproliferative progression (10.16%) or nonprogression (10.73%), moderate nonproliferative progression (10.1%) or nonprogression (15.85%), severe nonproliferative progression (11.27%) or nonprogression (10.68%), and proliferative disease (16.55%). Nearly 10,000 unique images were divided between the training and validation sets, each with 60-20-20 proportions.

The ResNet model had a classification test accuracy of 81% and an area under the receiver operating characteristic curve of 0.967 using images. The authors say the objective of the model is to reduce false negatives (predicting a class that is less progressive than the true label). For 91% of the images, the predicted labels were either correct labels or labels with greater progression than the originals.

> "...the use of machine learning algorithms may further refine the risk of disease progression and personalize screening intervals for patients..."

"Currently, estimating the risk of diabetic retinopathy progression is one of the most important, yet difficult tasks for physicians when caring for patients with diabetic eye disease," senior author Paolo S. Silva MD, of Harvard Medical School in Boston, said in a press release. "Our findings show that potentially, the use of machine learning algorithms may further refine the risk of disease progression and personalize screening intervals for patients, possibly reducing costs and improving vision-related outcomes."

www.practiceupdate.com/c/154116

Semaglutide and Cagrilintide Combination Safe and Effective for Type 2 Diabetes

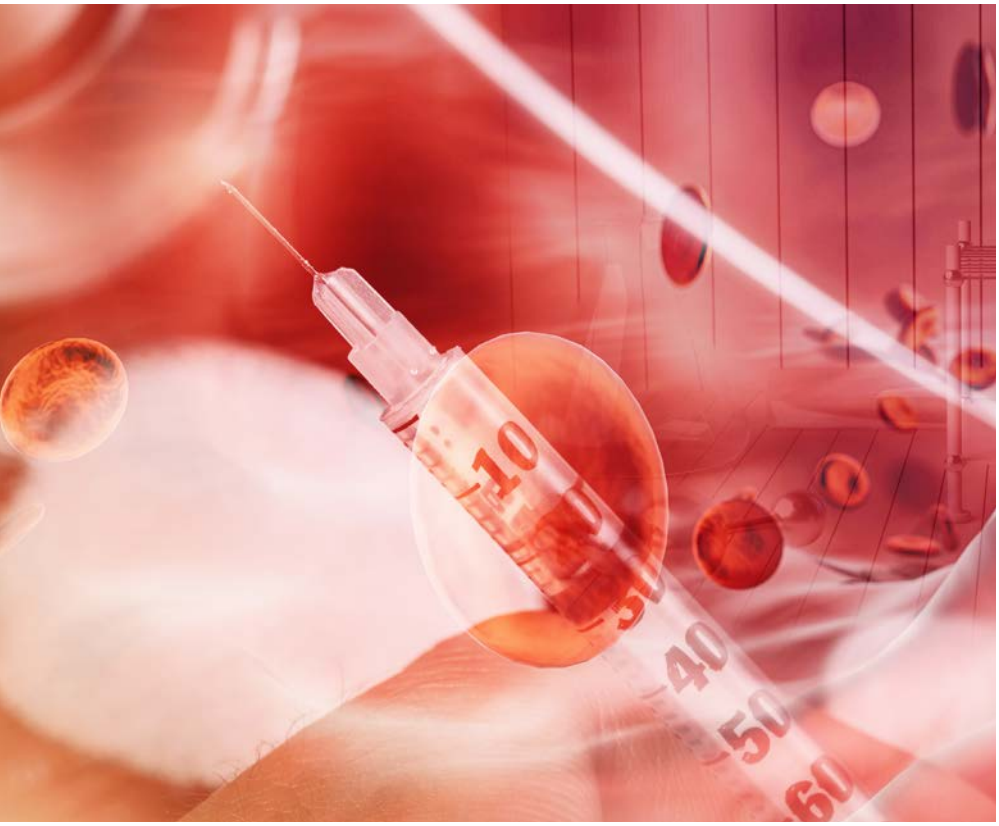
Participants saw significant reduction in HbA1c and weight following weekly doses of CagriSema versus monotherapy.

Dr. Juan Pablo Frías

CagriSema (coadministered semaglutide and cagrilintide) is a safe and effective treatment for type 2 diabetes and achieves clinically relevant glycemic control improvements, according to study results published online June 23 in *The Lancet* to coincide with the ADA meeting.

Juan Pablo Frías MD, of Velocity Clinical Research in Los Angeles, and colleagues assessed the effectiveness of the compound CagriSema compared to cagrilintide and semaglutide alone during a 32-week treatment period. Adults with type 2 diabetes and body mass index of 27 kg/m^2 or higher who were taking metformin with or without a sodium-glucose cotransporter 2 inhibitor, were randomly assigned to receive a weekly dose of subcutaneous CagriSema (31 patients), semaglutide (31 patients), or cagrilintide (30 patients), each escalated to 2.4 mg.

> "... if similar findings are confirmed in these larger and longer trials, [CagriSema] could be used to treat overweight or obese patients with type 2 diabetes to improve both glycemic and body weight control."



The researchers found that patients in the CagriSema group had the greatest success in reducing HbA1c. The average change in HbA1c from baseline to week 32 was –2.2 percentage points for the CagriSema group (standard error [SE], 0.15), –1.8 percentage points for the semaglutide group (SE, 0.16), and –0.9 for the cagrilintide group (SE, 0.15). There was a significant average change in HbA1c with CagriSema versus cagrilintide (estimated treatment difference, –1.3 percentage points), but not versus semaglutide (–0.4 percentage points).

From baseline to week 32, the mean change in body weight was –15.6% (SE, 1.26) with CagriSema, –5.1% (SE, 1.26) with semaglutide, and –8.1% (SE, 1.23) with cagrilintide). Adverse events were reported by 68% of patients in the CagriSema group, 71% in the semaglutide group, and 80 percent in the cagrilintide group, with mild-to-moderate gastrointestinal events being the most common.

"CagriSema was very effective in improving glucose control as well as reducing body weight in obese patients with poorly controlled type 2 diabetes," Frías explained. "Safety and tolerability with use of CagriSema was consistent with the GLP-1 [glucagon-like peptide-1] analog and amylin analog medication classes, and no patients withdrew from therapy due to an adverse event in the CagriSema arm."

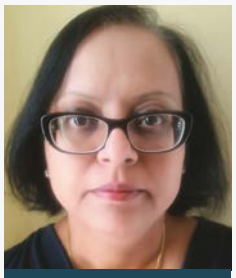
He added: "Depending on the results of phase III trials, if similar findings are confirmed in these larger and longer trials, [CagriSema] could be used to treat overweight or obese patients with type 2 diabetes to improve both glycemic and body weight control."

The study received funding from Novo Nordisk.

www.practiceupdate.com/c/154122

Childhood Glycemic Screening Predicts Future Diabetes-Related Complications

42-year study ties childhood HbA1c, 2-hour postload plasma glucose to long-term complications in at-risk, vulnerable population.



Dr. Madhumita Sinha

Childhood blood glucose levels are predictors of future microvascular complications such as nephropathy and retinopathy, according to a recent study.

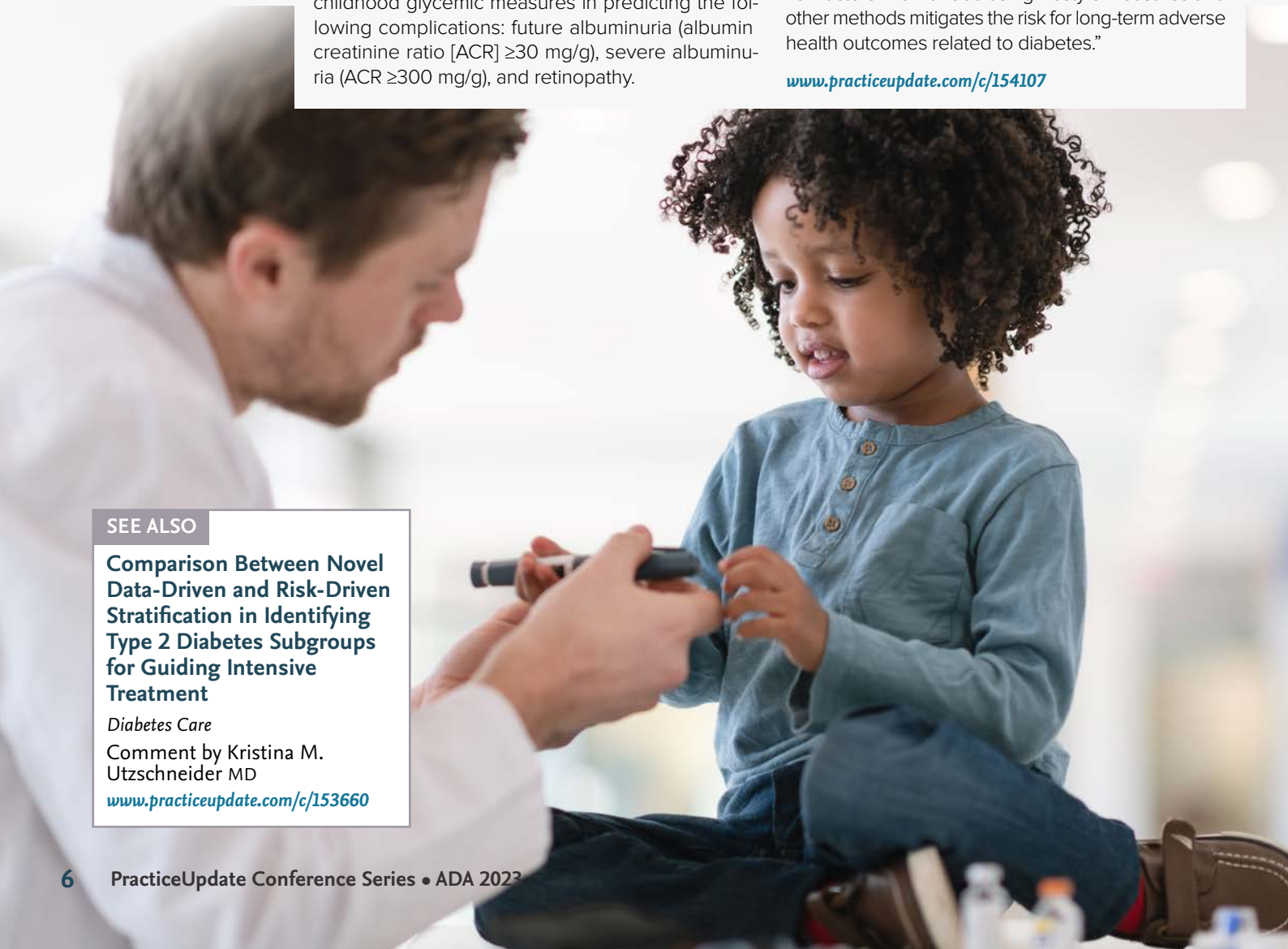
"With the rise in childhood obesity and severe obesity, and a parallel rise of obesity-related comorbidities such as youth-onset diabetes, particularly in minority high-risk populations, our study shows that screening for dysglycemia in childhood is a valid option since it is a predictor of future diabetes-related adverse health outcomes," Madhumita Sinha MD, of the National Institute of Diabetes and Digestive and Kidney Diseases at the National Institutes of Health in Phoenix, told Elsevier's PracticeUpdate.

Sinha and colleagues assessed associations of hemoglobin A1c (HbA1c) and 2-hour postload plasma glucose (2-hr PG) obtained during childhood (ages 5 to 18 years) in an American Indian community from 1965 to 2007. They compared the performance of childhood glycemic measures in predicting the following complications: future albuminuria (albumin creatinine ratio [ACR] ≥30 mg/g), severe albuminuria (ACR ≥300 mg/g), and retinopathy.

The researchers found that among children without type 2 diabetes at baseline, the risk for later retinopathy was significantly increased with higher HbA1c (hazard ratio [HR], 3.09 per 1%; 95% confidence interval [CI], 1.17 to 8.22) and higher 2-hr PG (HR, 1.48 per 1 mmol/L; 95% CI, 1.31 to 1.67). Children with type 2 diabetes based on their baseline HbA1c levels had higher incidence rates of albuminuria, severe albuminuria, and retinopathy than children with prediabetes and normal HbA1c. There were no significant differences in the area under the curve for HbA1c, 2-hr PG, or fasting plasma glucose.

"We encourage the clinical and scientific community to review our study findings while making clinical and health policy decisions since childhood obesity and metabolic dysfunction is one of the most challenging health problems we face today both in the United States and globally," Sinha explained. "Future studies could replicate our findings in other population groups [and] should focus on determining if improving these risk factors in childhood using lifestyle measures and other methods mitigates the risk for long-term adverse health outcomes related to diabetes."

www.practiceupdate.com/c/154107



SEE ALSO

Comparison Between Novel Data-Driven and Risk-Driven Stratification in Identifying Type 2 Diabetes Subgroups for Guiding Intensive Treatment

Diabetes Care

Comment by Kristina M. Utzschneider MD

www.practiceupdate.com/c/153660

Insulin Pumps Improve Quality of Life in Type 2 Diabetes

Patients using pumps reported less diabetes distress versus those who did not initiate pump therapy.

Dr. William Polonsky

Adults with type 2 diabetes (T2D) who require multiple daily insulin injections had improved quality of life after starting insulin pump therapy, according to findings presented at the ADA meeting.

"While pump use in adults with type 1 diabetes offers psychosocial and clinical benefits, little is known about its impact on such outcomes in the T2D population," William Polonsky PhD, of the Behavioral Diabetes Institute in San Diego, told Elsevier's PracticeUpdate. "We found that pump users reported significantly greater gains on all major psychosocial metrics, including overall well-being, diabetes distress, and hypoglycemic worries. They also reported significantly greater behavioral glycemic gains."

Polonsky and colleagues reported survey results from adults with T2D receiving multiple daily insulin injections who contacted Insulet about starting insulin pump therapy with a tubeless insulin pump (Omnipod DASH Insulin Management System). Participants completed surveys at baseline and six months later. The surveys included self-reported hemoglobin A1c (HbA1c) and quality-of-life measures.

The researchers found that among the 220 participants who completed the 6-month survey, 80 percent adopted pump therapy and 20 percent continued with multiple daily injections. Pump users demonstrated a greater improvement in overall well-being (+8.3 vs –3.1) and greater decreases in diabetes distress (–0.97 vs –0.30), diabetes impact (–0.29 vs +0.20), and perceived restrictions compared with those who never started pump therapy (in all cases, $P < .005$). Both groups reported a significant improvement in HbA1c from baseline, with no difference in HbA1c improvement between the pump users and those who continued with multiple daily injections (–1.1% vs –0.9%; $P = .10$).

"Encouraging pump use in the T2D population can contribute to significant psychosocial, glycemic, and behavioral benefits, indicating that broader use of insulin pumps in this population may be of value," Polonsky explained.

Several authors disclosed ties to the pharmaceutical and medical device industries, including Insulet Corporation, which funded the study.

www.practiceupdate.com/c/154123

Bempedoic Acid Cuts Risk for Major Adverse Cardiovascular Events in Statin-Intolerant Patients

The nonstatin cholesterol-lowering drug cuts risk by one-third when used for primary prevention.

Dr. Steven E. Nissen

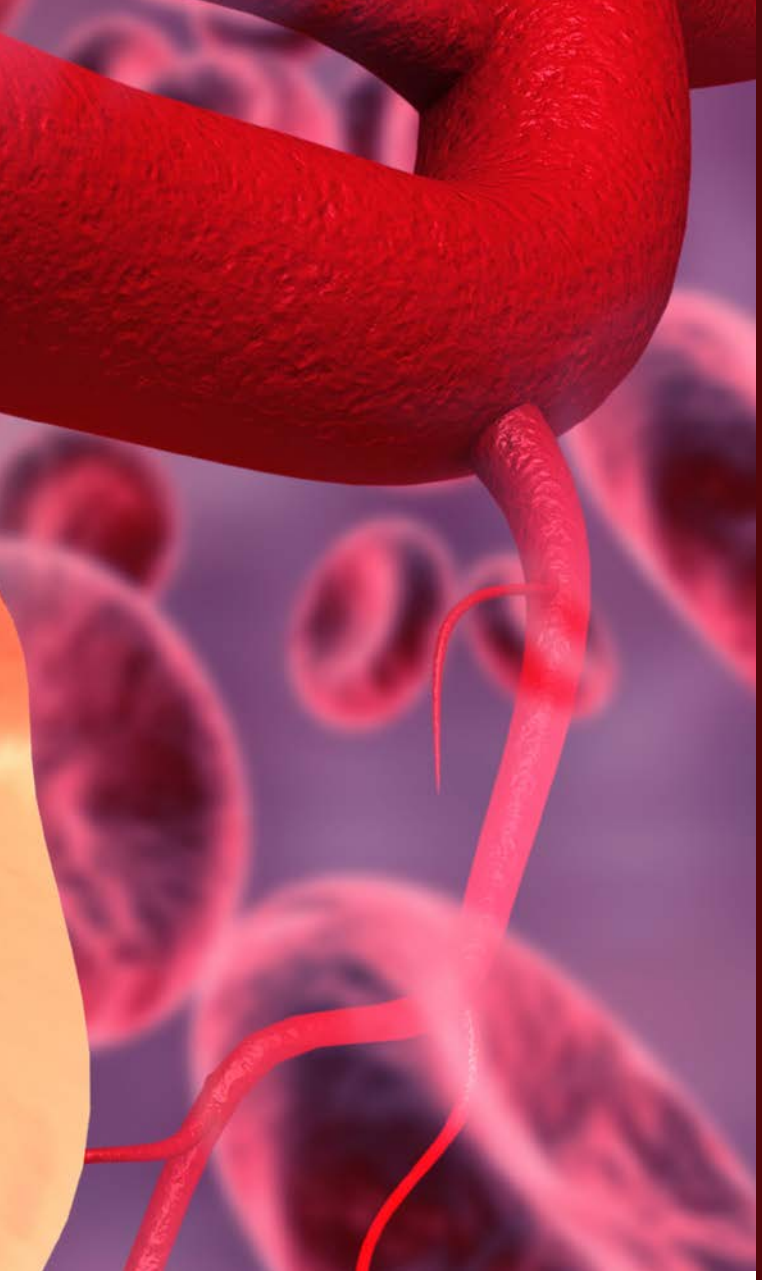
Treatment with bempedoic acid for primary prevention in statin-intolerant patients can reduce the incidence of major adverse cardiovascular events, according to a study published online June 24 in the *Journal of the American Medical Association* to coincide with the ADA meeting.

"The results are a wake-up call for the clinical community that patients with risk factors for coronary disease and high cholesterol, particularly those with diabetes, should be treated with a cholesterol-lowering drug," Steven E. Nissen MD, from the Cleveland Clinic in Ohio, said in a press release.

Using data from the CLEAR Outcomes trial, Nissen and colleagues examined the effects of bempedoic acid (180 mg daily) on cardiovascular outcomes among statin-intolerant patients with risk factors for heart disease but without a prior heart-related event (enrollment December 2016 to August 2019 at 1,250 centers in 32 countries). Patients were randomly assigned to bempedoic acid 180 mg daily (2,100 patients) or a matching placebo (2,106 patients).

From a mean baseline of 142.5 mg/dL, bempedoic acid reduced low-density lipoprotein cholesterol levels by 21.3 percent (30.2 mg/dL) and high-sensitivity C-reactive protein levels by 21.5% (from a median baseline of 2.4 mg/L). During a median follow-up of 39.9 months, there was a significant reduction in risk for first occurrence of a composite outcome of cardiovascular death,

"The results are a wake-up call for the clinical community that patients with risk factors for coronary disease and high cholesterol, particularly those with diabetes, should be treated with a cholesterol-lowering drug."



nonfatal myocardial infarction (MI), nonfatal stroke, or coronary revascularization (111 events [5.3%] vs 161 events [7.6%] with placebo; adjusted hazard ratio [HR], 0.70; P = .002).

Similar benefits were seen with bempedoic acid versus placebo for key secondary end points, including the composite of cardiovascular death, MI, or stroke (4.0% vs 6.4%; HR, 0.64; P < .001); MI (1.4% vs 2.2%; HR, 0.61); cardiovascular death (1.8% vs 3.1%; HR, 0.61); and all-cause mortality (3.6% vs 5.2%; HR, 0.73). No significant effect was seen for stroke or coronary revascularization.

Bempedoic acid was associated with some adverse events, including a higher incidence of gout (2.6% vs 2.0%), cholelithiasis (2.5% vs 1.1%), and increases in serum creatinine, uric acid, and hepatic enzyme levels compared with placebo.

"We know early prevention measures are critical to slowing the progression of heart disease, especially for people with comorbidities like diabetes," Nissen said. "Unfortunately, less than half of patients in the United States similar to the study patient population are being treated with cholesterol-lowering drugs – leaving them at risk."

Several authors report financial ties to the pharmaceutical industry, including Esperion Therapeutics, which funded the study.

www.practiceupdate.com/c/154105

Dapagliflozin Not Tied to Improved Glycemia Outcomes Versus Basal-Bolus Insulin

No treatment benefit seen for cardiac surgery patients with diabetes, but findings show dapagliflozin is safe.

The addition of dapagliflozin to basal-bolus insulin does not improve glycemia beyond basal-bolus insulin alone in hospitalized cardiac surgery patients with type 2 diabetes, according to a recent study.

Dr. Mohammad Shafi Kuchay

"The addition of dapagliflozin complementary to insulin therapy didn't improve glycemic control over and above the insulin therapy alone," Mohammad Shafi Kuchay, from Medanta in Gurugram, India, told Elsevier's PracticeUpdate. "This is surprising, as there is no obvious reason why it should not work."

Kuchay and colleagues randomly assigned 250 cardiac surgery patients with type 2 diabetes (1:1) to receive dapagliflozin 10 mg daily plus basal-bolus insulin (DAPA group) or basal-bolus insulin alone (INSULIN group) in the early postoperative period. Daily blood glucose concentrations were compared between the groups.

> "We have to be cautious when these agents are used in hospitalized patients, as many patients developed severe ketonemia."

The researchers found no differences in mean daily blood glucose concentrations (149 vs 150 mg/dL), mean percentage of readings within the target blood glucose of 70 to 180 mg/dL (82.7% vs 82.5%), mean daily total insulin dose (39 vs 40 units/day), median number of daily insulin injections (3.9 vs 4), median length of stay (10 days for both), or hospital complications (21.6% vs 24.8%).

In the DAPA group, mean plasma ketone levels were significantly higher than in the INSULIN group on day 3 (0.71 vs 0.30 mmol/L) and day 5 (0.42 vs 0.19 mmol/L). In the DAPA group, six patients developed severe ketonemia, but none developed diabetic ketoacidosis. There were no differences for the proportion of patients in either group with blood glucose <70 mg/dL (9.6% vs 7.2%). Fewer patients in the DAPA group developed acute kidney injury compared with the insulin group (7.2% vs 12.8%).

"We have to be cautious when these agents are used in hospitalized patients, as many patients developed severe ketonemia," Kuchay explained. "As more and more clinicians will use these antidiabetic medications for the cardiac benefits in hospitalized patients, they need to be careful."

www.practiceupdate.com/c/154103

Education Coupled With Psychological Interventions Reduces Diabetes Distress in Patients With Type 1 Diabetes

EMBARK study reveals integrated educator- and psychologist-led program achieved most significant reduction in diabetes distress.

Dr. Danielle Hessler Jones

Reductions in diabetes distress are greatest when using interventions that combine emotional and education approaches, according to a study presented at the ADA meeting.

Hessler Jones and colleagues randomly assigned 300 adults with type 1 diabetes to three different group-based, virtual interventions over three to four months to assess changes in diabetes distress (anxieties and burdens associated with disease management and glycemic control): Streamline, an educator-led education and management program; TunedIn, a psychologist-led program focused on addressing the emotional impacts of diabetes distress; and FixIt, an integration of Streamline and TunedIn. Each group-based intervention was virtual, included eight to 12 participants, and involved individual phone calls and follow-up meetings over four months.

The researchers found that each of the three groups saw large, clinically meaningful reductions in diabetes distress ($P < .001$), with significant reductions occurring in the FixIt group (Δ 0.88 ± 0.80), followed by the TunedIn (Δ 0.59 ± 0.70) and Streamline groups (Δ 0.48 ± 0.71). Reductions in diabetes distress were significantly greater in the FixIt group compared with the Streamline group ($P = .005$). The same pattern of results was seen when comparing diabetes distress sources: powerlessness ($P < .001$), management ($P = .06$), hypoglycemia ($P = .009$), and physician distress ($P = .01$). Overall, 35% of the participants no longer reported elevated levels of distress and 74% reported a clinically important reduction in distress at follow-up.

"How individuals feel about their diabetes matters," Danielle Hessler Jones PhD, of the University of California in San Francisco, commented. "These findings emphasize the significance and impact of providing comprehensive support that addresses both the educational and emotional needs of individuals living with diabetes."

www.practiceupdate.com/c/154104

Lower HbA1c With MI Admission Tied to Lower Likelihood of Preventive Medications

Findings seen for prescription of SGLT2 inhibitors and GLP-1 receptor agonists at 1 year.

Dr. Sandeep Das

Patients with higher hemoglobin A1c (HbA1c) at the time of hospitalization for myocardial infarction (MI) are more likely to be prescribed sodium-glucose cotransporter 2 (SGLT2) inhibitors and glucagon-like peptide-1 (GLP-1) receptor agonists one year after MI, according to data presented at the ADA meeting.

"The really important point for the practicing diabetes care provider is to think of these medications – SGLT2 inhibitors and GLP-1 receptor agonists – as heart medications rather than glucose-lowering therapies alone," Sandeep Das MD, from UT Southwestern Medical Center in Dallas, told Elsevier's PracticeUpdate. "This is a potential barrier to increase uptake of these important medications."

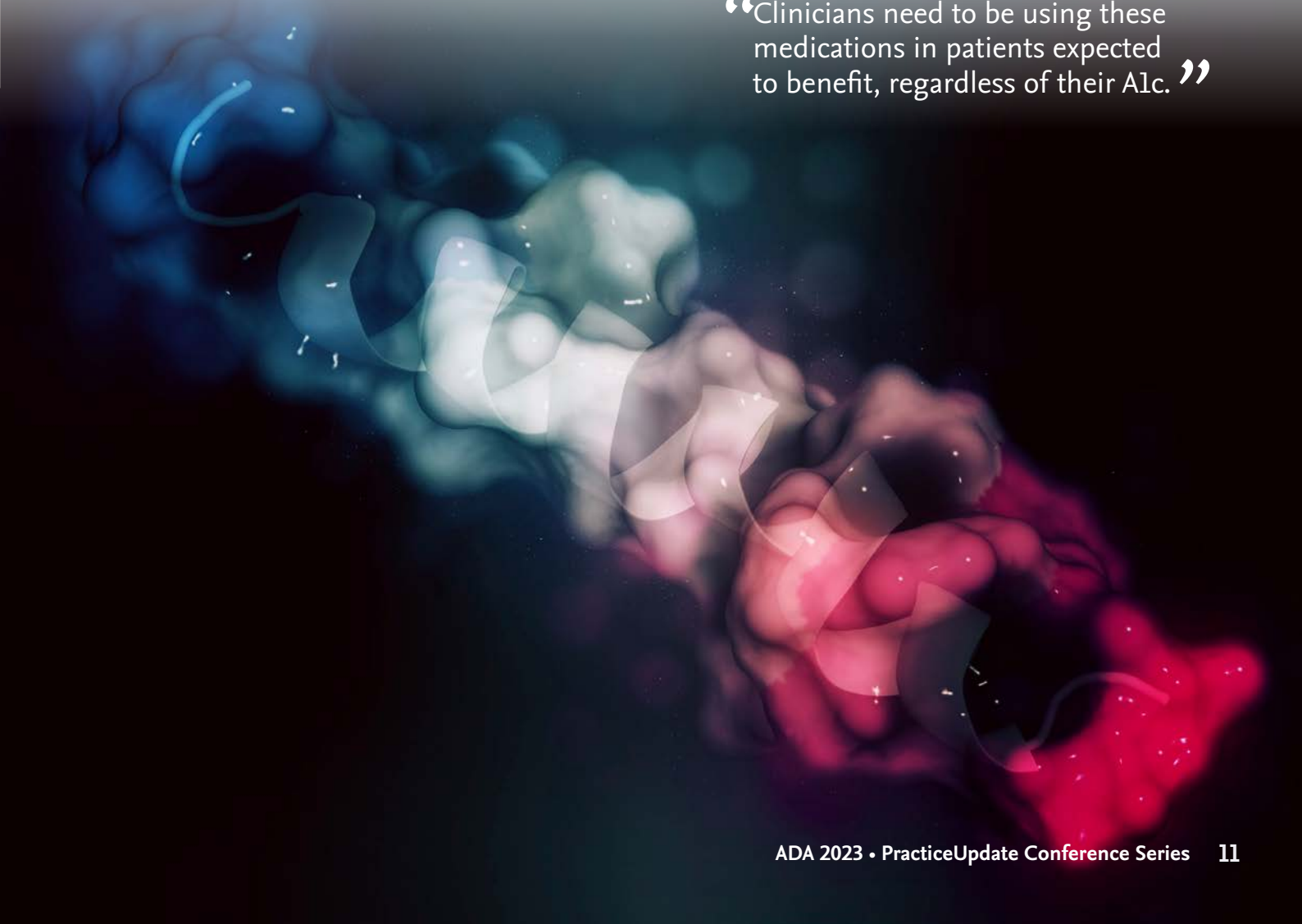
Das and colleagues examined prescription rates of these medications based on HbA1c at time of index MI admission in a large, urban safety-net hospital that provided these medications to low-income patients at nominal cost. The analysis included medication lists (1 year after discharge) pulled from hospital electronic health record data for 178 patients with diabetes who were hospitalized with type 1 MI (2018 to 2019).

The researchers found the proportions of patients prescribed SGLT2 inhibitors and GLP-1 receptor agonists at 1 year increased with higher HbA1c levels at admission (P = .009 and P = .07, respectively). For those prescribed SGLT2 inhibitors at 1 year, the median HbA1c at time of index MI was higher compared with those not prescribed SGLT2 inhibitors (9.3 vs 8.0; P = .03). A similar trend was seen for median HbA1c and GLP-1 receptor agonist prescriptions at 1 year (10.1 vs 8.1; P = .07).

"Clinicians need to be using these medications in patients expected to benefit, regardless of their A1c," Das explained. "It's important enough that other glucose-lowering therapies should be managed and adjusted to minimize any hypoglycemic risk while still prescribing these medications to many patients. Note that, absent insulin or sulfonylurea, these medication classes (SGLT2 inhibitors and GLP-1 receptor agonists) carry low risk of hypoglycemia and are in fact being used safely in patients without diabetes."

www.practiceupdate.com/c/154106

> "Clinicians need to be using these medications in patients expected to benefit, regardless of their A1c."



Metformin Combined With Usual Care a Safe Alternative for Gestational Diabetes

Early introduction of a daily dose of metformin resulted in maternal and neonatal health benefits.

Dr. Fidelma Dunne

The early introduction of metformin as an alternative treatment for gestational diabetes mellitus (GDM) is associated with maternal and neonatal benefits, according to a study presented at the annual meeting of the American Diabetes Association, held from June 23 to 26 in San Diego.

Fidelma Dunne MD, PhD, of the University of Galway in Ireland, and colleagues randomly assigned 535 women with GDM to metformin plus lifestyle modification (268 women) or placebo plus lifestyle modification (267 women) between June 2017 and September 2022. They compared the effectiveness of 500 mg per day of metformin, titrated to 2,500 mg, to placebo. Treatment was initiated before 28 weeks plus 6 days gestational age. The primary outcome was the composite of insulin initiation or fasting glucose ≥5.1 mmol/L at week 32 or 38.

The researchers found that early introduction of metformin did not achieve significantly different primary outcomes between the two treatment groups. In the metformin group, 56.8% of women achieved the primary outcome versus 63.7% in the placebo group (relative risk [RR], 0.89; 95% confidence interval [CI], 0.78 to 1.02). However, insulin initiation was significantly lower in the metformin group (38.4%) compared with the placebo group (51.1%; RR, 0.75; 95% CI, 0.62 to 0.91). The metformin group performed better than the placebo group for glycemic control (P = .004) and weight gain (P = .03), with a hemoglobin A1c (HbA1c) at 38 weeks of 33.9 mmol/mol and 0.8 kg weight gain for the metformin group versus 35 mmol/mol HbA1c and 2 kg weight gain for the placebo group.

Infants were less likely to weigh more than 4,000 g in the metformin group (7.6% vs 14.8%; P = .013). There was no significant difference in infants weighing less than 2,500 g, in infants needing neonatal intensive care unit admission, or in infants born preterm (<37 weeks) in the metformin versus placebo groups.

"The trial showed important benefits to maternal glycemic control, maternal weight gain, and infant size in terms of macrosomia and large for gestational age without any increase in small for gestational age or low birth weight," Dunne explained. "There was no increase in preterm birth, spontaneous or iatrogenic, and no excess of any other maternal or neonatal morbidities... This may have implications for GDM treatment in countries where insulin is difficult to get or is not affordable."

www.practiceupdate.com/c/154108

SEE ALSO

Adiposity Variables and Adipocytokines in Prepubertal Offspring of Mothers Treated With Metformin vs Insulin for Gestational Diabetes

Diabetes Research and Clinical Practice

Comment by Janet A. Rowan FRACP

www.practiceupdate.com/c/153601

Discontinuing Metformin Tied to Worse Cardio-Renal, Survival Outcomes

Outcomes poor when discontinuing metformin with eGFR less than 30 mL/min/1.73m^2 regardless of cardiovascular disease.

Dr. Aimin Yang

> "We plan to examine the risk of MALA between users who discontinued and those who continued with metformin in a complementary register-based cohort in Hong Kong."

Continuation of metformin below an estimated glomerular filtration rate (eGFR) of 30 mL/min/1.73m^2 may be associated with cardio-renal and mortality benefits, regardless of cardiovascular disease status, according to a study presented at the ADA meeting.

"Our data suggest that in a clinic setting, metformin can be continued with dose adjustment in patients with advanced chronic kidney disease to sustain glycemic control and for organ protection," Aimin Yang PhD, from the Chinese University of Hong Kong, told Elsevier's PracticeUpdate.

Yang and colleagues estimated the risk for death, major adverse cardiovascular events (MACE), and end-stage kidney disease (ESKD) among 36,940 propensity-matched patients with diabetes who continued or discontinued (22.7%) metformin within 6 months after reaching eGFR <30 mL/min/1.73m^2.

During a median follow-up of 3.5 years, 15.3% of the cohort had incident MACE, 16.6% had heart failure, and 28.1% had ESKD, while 41.5% died. Discontinuation of metformin was associated with a higher risk for MACE (weighted and adjusted hazard ratio [HR], 1.42), heart failure (HR, 1.70), ESKD (HR, 1.73), and death (HR, 1.24) versus continued metformin use. Similar results were seen in patients with and without established cardiovascular disease.

"The concern, of course, is an increased risk of metformin-associated lactic acidosis (MALA) at low eGFR," Yang commeted. "We plan to examine the risk of MALA between users who discontinued and those who continued with metformin in a complementary register-based cohort in Hong Kong. We aim to establish the safety of low-dose metformin (e.g., 500 mg/day) in patients with chronic kidney disease stage 4 (eGFR 15 to 30 mL/min/1.73m^2) supported by regular monitoring and patient education regarding the need to transiently discontinue metformin during acute illness."

www.practiceupdate.com/c/154118

SEE ALSO

Effects of Dapagliflozin on Renal Function in Patients With Type 1 Diabetes in the Real World

Diabetes Research and Clinical Practice

Comment by Christian W. Mende MD

www.practiceupdate.com/c/153600

Practice UPDATE

ELSEVIER

PracticeUpdate is a free online resource developed by Elsevier delivering healthcare providers current, practice-relevant medical information curated by experts who understand what matters most to patient care.

Daily updates on topics including:

- Cardiology
- Clinical Dentistry
- Dermatology
- Diabetes
- Eye Care
- Gastroenterology
- Neurology
- Oncology
- Primary Care
- Respiratory Medicine

Join for free today at **PracticeUpdate.com**