

Diabetes Care

THE JOURNAL OF CLINICAL AND APPLIED RESEARCH AND EDUCATION

February 2020 Volume 43, Number 2

In This Issue

263 In This Issue of *Diabetes Care*

Perspectives in Care

- ➔ 265 Red and Processed Meats and Health Risks: How Strong Is the Evidence?
F. Qian, M.C. Riddle, J. Wylie-Rosett, and F.B. Hu

Commentary

- 272 How Valid Are the New Hypoglycemia Definitions for Use in Clinical Trials?
P. Home

Nonalcoholic Fatty Liver Disease in Diabetes

- 275 Time to Include Nonalcoholic Steatohepatitis in the Management of Patients With Type 2 Diabetes
K. Cusi
- 280 Role of Exercise in Mitigating Pediatric Nonalcoholic Fatty Liver Disease
J.M. Vittorio and J.E. Lavine
- ➔ 283 Economic and Clinical Burden of Nonalcoholic Steatohepatitis in Patients With Type 2 Diabetes in the U.S.
Z.M. Younossi, R.P. Tampi, A. Racila, Y. Qiu, L. Burns, I. Younossi, and F. Nader
- 290 Performance of Plasma Biomarkers and Diagnostic Panels for Nonalcoholic Steatohepatitis and Advanced Fibrosis in Patients With Type 2 Diabetes
F. Bril, M.J. McPhaul, M.P. Caulfield, V.C. Clark, C. Soldevilla-Pico, R.J. Firpi-Morell, J. Lai, D. Shiffman, C.M. Rowland, and K. Cusi
- ➔ 298 Empagliflozin Effectively Lowers Liver Fat Content in Well-Controlled Type 2 Diabetes: A Randomized, Double-Blind, Phase 4, Placebo-Controlled Trial
S. Kahl, S. Gancheva, K. Straßburger, C. Herder, J. Machann, H. Katsuyama, S. Kabisch, E. Henkel, S. Kopf, M. Lagerpusch, K. Kantartzis, Y. Kupriyanova, D. Markgraf, T. van Gemert, B. Knebel, M.F. Walkersdorfer, O. Kuss, J.-H. Hwang, S.R. Bornstein, C. Casperk, N. Stefan, A. Pfeiffer, A.L. Birkenfeld, and M. Roden
- 306 Effects of Exercise in Addition to a Family-Based Lifestyle Intervention Program on Hepatic Fat in Children With Overweight
I. Labayen, M. Medrano, L. Arenaza, E. Maíz, M. Osés, V. Martínez-Vizcaino, J.R. Ruiz, and F.B. Ortega

Clinical Care/Education/Nutrition/Psychosocial Research

- 314 Sex Difference in Effects of Low-Dose Aspirin on Prevention of Dementia in Patients With Type 2 Diabetes: A Long-term Follow-up Study of a Randomized Clinical Trial
C. Matsumoto, H. Ogawa, Y. Saito, S. Okada, H. Soejima, M. Sakuma, I. Masuda, M. Nakayama, N. Doi, H. Jinnouchi, M. Waki, T. Morimoto, and the JPAD Trial Investigators
- 321 Superior Long-term Survival for Simultaneous Pancreas-Kidney Transplantation as Renal Replacement Therapy: 30-Year Follow-up of a Nationwide Cohort
K. Esmeijer, E.K. Hoogeveen, P.J.M. van den Boog, C. Konijn, M.J.K. Mallat, A.G. Baranski, O.M. Dekkers, and J.W. de Fijter, on behalf of the Dutch Transplant Centers

- 329 Diabetes INSIDE: Improving Population HbA_{1c} Testing and Targets in Primary Care With a Quality Initiative
R.E. Furman, T.S. Harlan, L. LeBlanc, E.C. Furman, G. Liptak, and V.A. Fonseca

- 337 Randomized Study to Evaluate the Impact of Telemedicine Care in Patients With Type 1 Diabetes With Multiple Doses of Insulin and Suboptimal HbA_{1c} in Andalusia (Spain): PLATEDIAN Study
M.S. Ruiz de Adana, M.R. Alhambra-Expósito, A. Muñoz-Garach, I. Gonzalez-Molero, N. Colomo, I. Torres-Barea, M. Aguilar-Diosdado, F. Carral, M. Serrano, M.A. Martínez-Brocca, A. Duran, and R. Palomares, on behalf of the Diabetes Group of SAEDYN (Andalusian Society of Endocrinology, Diabetes, and Nutrition)
- 343 Suicide Risk Assessment in Youth and Young Adults With Type 1 Diabetes
S. Majidi, H.K. O'Donnell, K. Stanek, E. Youngkin, T. Gomer, and K.A. Driscoll

Epidemiology/Health Services Research

- 349 Clinical Outcomes in Patients With Isolated or Combined Diabetic Ketoacidosis and Hyperosmolar Hyperglycemic State: A Retrospective, Hospital-Based Cohort Study
F.J. Pasquel, K. Tsegka, H. Wang, S. Cardona, R.J. Galindo, M. Fayfman, G. Davis, P. Vellanki, A. Migdal, U. Gujral, K.M.V. Narayan, and G.E. Umpierrez
- 358 Plasma and Dietary Linoleic Acid and 3-Year Risk of Type 2 Diabetes After Myocardial Infarction: A Prospective Analysis in the Alpha Omega Cohort
K. Pertiwi, A.J. Wanders, M.C. Harbers, L.K. Küpers, S.S. Soedamah-Muthu, J. de Goede, P.L. Zock, and J.M. Geleijnse
- 366 Plasma Lipidome and Prediction of Type 2 Diabetes in the Population-Based Malmö Diet and Cancer Cohort
C. Fernandez, M.A. Surma, C. Klose, M.J. Gerl, F. Ottosson, U. Ericson, N. Oskolkov, M. Ohro-Melander, K. Simons, and O. Melander
- 374 Within-Trial Evaluation of Medical Resources, Costs, and Quality of Life Among Patients With Type 2 Diabetes Participating in the Exenatide Study of Cardiovascular Event Lowering (EXSCEL)
S.D. Reed, Y. Li, H.A. Dakin, F. Becker, J. Leal, S.M. Gustavson, B. Kartman, E. Wittbrodt, R.J. Mentz, N.J. Pagidipati, M.A. Bethel, A.M. Gray, R.R. Holman, and A.F. Hernandez, for the EXSCEL Study Group
- 382 Mortality Implications of Prediabetes and Diabetes in Older Adults
O. Tang, K. Matsushita, J. Coresh, A.R. Sharrett, J.W. McEvoy, B.G. Windham, C.M. Ballantyne, and E. Selvin

Emerging Technologies: Data Systems and Devices

- ➔ 389 Quality of Life and Glucose Control After 1 Year of Nationwide Reimbursement of Intermittently Scanned Continuous Glucose Monitoring in Adults Living With Type 1 Diabetes (FUTURE): A Prospective Observational Real-World Cohort Study
S. Charleer, C. De Block, L. Van Huffel, B. Broos, S. Fieuws, F. Nobels, C. Mathieu, and P. Gillard

Pathophysiology/Complications

- 398 Redefining Hypoglycemia in Clinical Trials: Validation of Definitions Recently Adopted by the American Diabetes Association/European Association for the Study of Diabetes
S.R. Heller, J.B. Buse, R. Ratner, E. Seaquist, L. Bardtrum, C.T. Hansen, D. Tutkunkardas, and A.C. Moses

Keep up with the latest information for *Diabetes Care* and other ADA titles via Facebook (/ADAJournals) and Twitter (@ADA_Journals).

All articles in *Diabetes Care* are available online at diabetes.org/diabetescare. Cover articles (➡) and select content are available free of charge. Other articles are available free to print subscribers or can be purchased as e-prints or reprints.

ADA's *Diabetes Core Update* podcasts are available at diabetesjournals.org and through iTunes.

Icons shown below appear on the first page of an article if more information is available online.



Free Article



Video



Podcast



Supplementary Data



Companion Article

- 405** Steroid Metabolomic Signature of Insulin Resistance in Childhood Obesity
A.M. Gawlik, M. Shmoish, M.F. Hartmann, S.A. Wudy, and Z. Hochberg
- 411** Effects of Gender-Affirming Hormone Therapy on Insulin Sensitivity and Incretin Responses in Transgender People
S. Shadid, K. Abosi-Appadu, A.-S. De Maertelaere, J. Defreyne, L. Veldeman, J.J. Holst, B. Lapauw, T. Vilsbøll, and G. T'Sjoen
- 418** Genetic Discrimination Between LADA and Childhood-Onset Type 1 Diabetes Within the MHC
R. Mishra, M. Åkerlund, D.L. Cousminer, E. Ahlqvist, J.P. Bradfield, A. Chesi, K.M. Hodge, V.C. Guy, D.J. Brillon, R.E. Pratley, M.R. Rickels, A. Vella, F. Ovalle, R.I. Harris, O. Melander, S. Varvel, H. Hakonarson, P. Froguel, J.T. Lonsdale, D. Mauricio, N.C. Schloot, K. Khunti, C.J. Greenbaum, K.B. Yderstræde, T. Tuomi, B.F. Voight, S. Schwartz, B.O. Boehm, L. Groop, R.D. Leslie, and S.F.A. Grant

Cardiovascular and Metabolic Risk

- 426** Visit-to-Visit HbA_{1c} Variability Is Associated With Cardiovascular Disease and Microvascular Complications in Patients With Newly Diagnosed Type 2 Diabetes
S. Li, I. Nemeth, L. Donnelly, S. Hapca, K. Zhou, and E.R. Pearson
- 433** Novel Biomarkers for Change in Renal Function in People With Dysglycemia
H.C. Gerstein, G. Paré, M.J. McQueen, S.F. Lee, S.I. Bangdiwala, A. Kannt, and S. Hess, for the ORIGIN Trial Investigators
- 440** Glycated Hemoglobin, Prediabetes, and the Links to Cardiovascular Disease: Data From UK Biobank
C. Welsh, P. Welsh, C.A. Celis-Morales, P.B. Mark, D. Mackay, N. Ghouri, F.K. Ho, L.D. Ferguson, R. Brown, J. Lewsey, J.G. Cleland, S.R. Gray, D.M. Lyall, J.J. Anderson, P.S. Jhund, J.P. Pell, D.K. McGuire, J.M.R. Gill, and N. Sattar
- 446** Microvascular and Cardiovascular Outcomes According to Renal Function in Patients Treated With Once-Weekly Exenatide: Insights From the EXSCEL Trial
M.A. Bethel, R.J. Mentz, P. Merrill, J.B. Buse, J.C. Chan, S.G. Goodman, N. Iqbal, N. Jakuboniene, B. Katona, Y. Lohnygina, R.D. Lopes, A.P. Maggioni, P. Ohman, T. Tankova, G.L. Bakris, A.F. Hernandez, and R.R. Holman
- 453** Myocardial Ischemic Burden and Differences in Prognosis Among Patients With and Without Diabetes: Results From the Multicenter International REFINE SPECT Registry
D. Han, A. Rozanski, H. Gransar, T. Sharir, A.J. Einstein, M.B. Fish, T.D. Ruddy, P.A. Kaufmann, A.J. Sinusas, E.J. Miller, T.M. Bateman, S. Dorbala, M. Di Carli, J.X. Liang, L.-H. Hu, G. Germano, D. Dey, D.S. Berman, and P.J. Slomka
- 460** Performance of the ESC 0/1-h and 0/3-h Algorithm for the Rapid Identification of Myocardial Infarction Without ST-Elevation in Patients With Diabetes
P.M. Haller, J. Boeddinghaus, J.T. Neumann, N.A. Sørensen, T.S. Hartikainen, A. Goßling, T. Nestelberger, R. Twerenbold, J. Lehmacher, T. Keller, T. Zeller, S. Blankenberg, C. Mueller, and D. Westermann
- 468** Efficacy and Safety of Dapagliflozin in the Elderly: Analysis From the DECLARE-TIMI 58 Study
A. Cahn, O. Mosenzon, S.D. Wiviott, A. Rozenberg, I. Yanuv, E.L. Goodrich, S.A. Murphy, D.L. Bhatt, L.A. Leiter, D.K. McGuire, J.P.H. Wilding, I.A.M. Gause-Nilsson, M. Fredriksson, P.A. Johansson, A.M. Langkilde, M.S. Sabatine, and I. Raz

Novel Communications in Diabetes

- 476** Wholegrain Particle Size Influences Postprandial Glycemia in Type 2 Diabetes: A Randomized Crossover Study Comparing Four Wholegrain Breads
A.N. Reynolds, J. Mann, M. Elbalshy, E. Mete, C. Robinson, I. Oey, P. Silcock, N. Downes, T. Perry, and L. Te Morenga
- 480** Glucose and Counterregulatory Responses to Exercise in Adults With Type 1 Diabetes and Impaired Awareness of Hypoglycemia Using Closed-Loop Insulin Delivery: A Randomized Crossover Study
M.H. Lee, S. Vogrin, B. Paldus, D. Jayawardene, H.M. Jones, S.A. McAuley, V. Obeyesekere, J. Gooley, A. La Gerche, R.J. MacIsaac, V. Sundararajan, A.J. Jenkins, G.M. Ward, and D.N. O'Neal
- 484** Risk of Psychiatric Disorders and Suicide Attempts in Emerging Adults With Diabetes
M.-E. Robinson, M. Simard, I. Larocque, J. Shah, M. Nakhla, and E. Rahme

Consensus Report Update

- 487** 2019 Update to: Management of Hyperglycemia in Type 2 Diabetes, 2018. A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)
J.B. Buse, D.J. Wexler, A. Tsapas, P. Rossing, G. Mingrone, C. Mathieu, D.A. D'Alessio, and M.J. Davies

Clinical Images in Diabetes

- 494** Severe Lipoatrophy in a Patient With Type 2 Diabetes in Response to Human Insulin Analogs Glargine and Degludec: Possible Involvement of CD4 T Cell-Mediated Tissue Remodeling
T. Turk Wensveen, D. Fučkar Čupić, D. Jurišić Eržen, B. Polić, and F.M. Wensveen

Erratum

- 497** Erratum. Overall Quality of Care Predicts the Variability of Key Risk Factors for Complications in Type 2 Diabetes: An Observational, Longitudinal Retrospective Study. *Diabetes Care* 2019;42:514–519
A. Ceriello, M.C. Rossi, S. De Cosmo, G. Lucisano, R. Pontremoli, P. Fioretto, C. Giorda, A. Pacilli, F. Viazzi, G. Russo, and A. Nicolucci, on behalf of the AMD-Annals Study Group

Issues and Events

- 498** Issues and Events

e-Letters – Observations

- e15** Plasma Apelin and Risk of Type 2 Diabetes in a Cohort From the Community
I. Castan-Laurell, R. El Boustany, O. Pereira, L. Potier, M. Marre, F. Fumeron, P. Valet, P. Gourdy, G. Velho, and R. Roussel
- e17** Trends in HbA_{1c} and LDL Cholesterol in Patients With Type 2 Diabetes Receiving First-Time Treatment in Northern Denmark, 2000–2017: Population-Based Sequential Cross-Sectional Analysis
J.S. Knudsen, A. Hulman, P.F. Rønn, T. Lauritzen, H.T. Sørensen, D.R. Witte, and R.W. Thomsen

e20 Benefits of Participating With a Partner in the National Diabetes Prevention Program
N.D. Ritchie, K.J.W. Baucom, and K.A. Sauder

e22 The Role of Lipoprotein (a) as a Marker of Residual Risk in Patients With Diabetes and Established Cardiovascular Disease on Optimal Medical Therapy: Post Hoc Analysis of ACCELERATE
N.P. Shah, Q. Wang, K.E. Wolski, L. Cho, E. McErlean, G. Ruotolo, G. Weerakkody, J.S. Riesmeyer, S.J. Nicholls, A.M. Lincoff, S.E. Nissen, and V. Menon

e-Letters – Comments and Responses

e25 Comment on Segar et al. Machine Learning to Predict the Risk of Incident Heart Failure Hospitalization Among Patients With Diabetes: The WATCH-DM Risk Score. *Diabetes Care* 2019;42:2298–2306
H. Shao, L. Shi, and V. Fonseca

e26 Response to Comment on Segar et al. Machine Learning to Predict the Risk of Incident Heart Failure Hospitalization Among Patients With Diabetes: The WATCH-DM Risk Score. *Diabetes Care* 2019;42:2298–2306
M.W. Segar, M. Vaduganathan, D.K. McGuire, M. Basit, and A. Pandey

e28 Comment on Nauck et al. Effects of Liraglutide Compared With Placebo on Events of Acute Gallbladder or Biliary Disease in Patients With Type 2 Diabetes at High Risk for Cardiovascular Events in the LEADER Randomized Trial. *Diabetes Care* 2019;42:1912–1920
M. Skelin, D. Rahelić, P. Skelin, and M. Lucijanac

e30 Response to Comment on Nauck et al. Effects of Liraglutide Compared With Placebo on Events of Acute Gallbladder or Biliary Disease in Patients With Type 2 Diabetes at High Risk for Cardiovascular Events in the LEADER Randomized Trial. *Diabetes Care* 2019;42:1912–1920
M.A. Nauck, E. Kreiner, S. Rasmussen, H.A. Saeveid, and J.B. Buse, on behalf of the LEADER Trial Investigators

e32 Comment on Hubbard et al. Prediabetes and Risk for Cardiovascular Disease by Hypertension Status in Black Adults: The Jackson-DM Heart Study. *Diabetes Care* 2019;42:2322–2329
J. Wu, J.-s. Liu, and L.-q. Kong