

New Online

Views **22,140** | Citations **0** | Altmetric **392** | Comments **1**

PDF

 Full Text Share Comment

Original Investigation

ONLINE FIRST

October 4, 2021

Association of Statin Therapy Initiation With Diabetes Progression

A Retrospective Matched-Cohort Study

Ishak A. Mansi, MD^{1,2,3}; Matthieu Chansard⁴; Ildiko Lingvaj, MD, MPH, MSCS^{2,3}; [et al](#)[» Author Affiliations](#)*JAMA Intern Med.* Published online October 4, 2021. doi:10.1001/jamainternmed.2021.5714

Key Points

Question What is the association of statin treatment initiation and diabetes progression in patients with diabetes?

Findings This large retrospective cohort study included 83 022 propensity-scored matched pairs of statin users and nonusers and found that the diabetes-progression composite outcome was significantly higher among patients with diabetes who used statins than among patients with diabetes who did not use statins. The study examined 12 years of data on patients covered by the Veterans Affairs health system and new-user and active-comparator designs to assess associations between statin initiation and diabetes progression from 2003 to 2015.

Meaning Statin use was associated with diabetes progression in patients with diabetes—statin users had a higher likelihood of insulin treatment initiation, developing significant hyperglycemia, experiencing acute glycemic complications, and being prescribed an increased number of glucose-lowering medication classes.

Abstract

Importance Statin therapy has been associated with increased insulin resistance; however, its clinical implications for diabetes control among patients with diabetes is unknown.

Our website uses cookies to enhance your experience. By continuing to use our site, or clicking "Continue," you are agreeing to our [Cookie Policy](#) | [Continue](#)

Design, Setting, and Participants This was a retrospective matched-cohort study using new-user and active-comparator designs to assess associations between statin initiation and diabetes progression in a national cohort of patients covered by the US Department of Veterans Affairs from fiscal years 2003-2015. Patients included were 30 years or older; had been diagnosed with diabetes during the study period; and were regular users of the Veterans Affairs health system, with records of demographic information, clinical encounters, vital signs, laboratory data, and medication usage.

Interventions Treatment initiation with statins (statin users) or with H2-blockers or proton pump inhibitors (active comparators).

Main Outcomes and Measures Diabetes progression composite outcome comprised the following: new insulin initiation, increase in the number of glucose-lowering medication classes, incidence of 5 or more measurements of blood glucose of 200 mg/dL or greater, or a new diagnosis of ketoacidosis or uncontrolled diabetes.

Results From the 705 774 eligible patients, we matched 83 022 pairs of statin users and active comparators; the matched cohort had a mean (SD) age of 60.1 (11.6) years; 78 712 (94.9%) were men; 1715 (2.1%) were American Indian/Pacific Islander/Alaska Native, 570 (0.8%) were Asian, 17 890 (21.5%) were Black, and 56 633 (68.2 %) were White individuals. Diabetes progression outcome occurred in 55.9% of statin users vs 48.0% of active comparators (odds ratio, 1.37; 95% CI, 1.35-1.40; $P < .001$). Each individual component of the composite outcome was significantly higher among statin users. Secondary analysis demonstrated a dose-response relationship with a higher intensity of low-density lipoprotein-cholesterol lowering associated with greater diabetes progression.

Conclusions and Relevance This retrospective matched-cohort study found that statin use was associated with diabetes progression, including greater likelihood of insulin treatment initiation, significant hyperglycemia, acute glycemic complications, and an increased number of prescriptions for glucose-lowering medication classes. The risk-benefit ratio of statin use in patients with diabetes should take into consideration its metabolic affects.



Full Text

Comment

1 Comment for this article

EXPAND ALL

October 13, 2021

[Looking at the Whole Picture](#)

Our website uses cookies to enhance your experience. By continuing to use our site, or clicking "Continue," you are agreeing to our [Cookie Policy](#) | [Continue](#)

Marc Rendell, M.D. | The Rose Salter Medical Research Foundation and the Association of Diabetes Investigators

The use of statins has been associated with decreased cardiovascular mortality. Studies of overall mortality have been somewhat less conclusive (1), but a retrospective cohort study in the Veterans Administration population also using propensity scoring showed a hazard ratio favoring statin use of 0.75 (95% CI, 0.74-0.76) for all-cause mortality, and 0.80 (95% CI, 0.78-0.81) for cardiovascular mortality (2). The study by Mansi et al (3) suggests that statin use was associated with worsening events associated with diabetes. Certainly diabetes is a strong driver of increased mortality. It would be interesting for the authors to broaden their ...

[READ MORE](#)

Advertisement

Read More About

Diabetes

Diabetes and Endocrinology

Pharmacoepidemiology

Cardiology

Cardiovascular Risk Factors

Dyslipidemia

Clinical Pharmacy and Pharmacology



[Coronavirus Resource Center](#)

Trending

Research

mRNA Vaccines and COVID-19 Infection and Hospitalization Among Patients With Cirrhosis

October 1, 2021

Research

Financial Incentives for COVID-19 Vaccination

October 25, 2021

Research

Association Between Risk of COVID-19 in Nonimmune Individuals and Immunity in Family Members

October 11, 2021

Our website uses cookies to enhance your experience. By continuing to use our site, or clicking "Continue," you are agreeing to our [Cookie Policy](#) | [Continue](#)

JOB LISTINGS ON JAMA CAREER CENTER®**Primary Care Physician, Internal Medicine or Family Medicine**

Stamford, Connecticut

Physician

San Francisco, California

Chief Medical Officer

White Cloud, Michigan

Physician-Primary Care Regional Clinical Program Medical**Director (Market: Madison Metro)-SSM Dean M**

Madison, WI

Physician (S)

Madison, WI

See more at JAMA Career Center

Others Also Liked

Second-Line Agents for the Treatment of Type 2 Diabetes and Prevention of CKD

Margaret K. Yu et al., Clin J Am Soc Nephrol, 2016

Type 2 Diabetes Is More Than Hyperglycemia

Jennifer B. Marks, Clin Diabetes, 2003

Early and Aggressive Initiation of Insulin Therapy for Type 2 Diabetes: What Is the Evidence?

Kevin Niswender, Clin Diabetes, 2009

Our website uses cookies to enhance your experience. By continuing to use our site, or clicking "Continue," you are agreeing to our [Cookie Policy](#) | [Continue](#)

Trending

Association of Allergy History With Allergy Symptoms After COVID-19 Vaccination

JAMA Network Open | *Research* | *October 26, 2021*

Allergic and Anaphylactic Reactions to mRNA COVID-19 Vaccines

JAMA Network Open | *Research* | *September 17, 2021*

Allergic Reactions After COVID-19 Vaccination Among Adults With High Allergy Risk

JAMA Network Open | *Research* | *August 31, 2021*

Our website uses cookies to enhance your experience. By continuing to use our site, or clicking "Continue," you are agreeing to our [Cookie Policy](#) | [Continue](#)