

American Diabetes Association (ADA)

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Influence of Diabetes on Trends in Perioperative Cardiovascular Events

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Abstract

Objectives:

Patients undergoing noncardiac surgery frequently have diabetes mellitus (DM) and an elevated risk of cardiovascular disease. It is unknown whether temporal declines in the frequency of perioperative major adverse cardiovascular and cerebrovascular events (MACCEs) apply to patients with DM.

Research Design and Methods:

Patients' ≥ 45 years of age who underwent noncardiac surgery from January 2004 to December 2013 were identified using the U.S. National Inpatient Sample. DM was identified using ICD-9 diagnosis codes. Perioperative MACCEs (in-hospital all-cause mortality, acute myocardial infarction, or acute ischemic stroke) by DM status were evaluated over time.

Results:

The final study sample consisted of 10,581,621 hospitalizations for major noncardiac surgery; DM was present in ~23% of surgeries and increased over time (P for trend <0.001). Patients with DM experienced MACCEs in 3.3% of surgeries vs. 2.8% of surgeries for patients without DM (P < 0.001). From 2004 to 2013, the odds of perioperative MACCEs after multivariable adjustment increased by 6% (95% CI 2–9) for DM patients, compared with an 8% decrease (95% CI –10 to –6) for patients without DM (P for interaction <0.001). Trends for individual end points were all less favorable for patients with DM versus those without DM.

Conclusions:

In an analysis of >10.5 million noncardiac surgeries from a large U.S. hospital admission database, perioperative MACCEs were more common among patients with DM versus those without DM. Perioperative MACCEs increased over time and individual end points were all less favorable for patients with DM. Our findings suggest that a substantial unmet need exists for strategies to reduce the risk of perioperative cardiovascular events among patients with DM.

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