

Statins may protect against kidney complications following elective surgery

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Taking a statin before having major elective surgery reduces potentially serious kidney complications, according to a study appearing in an upcoming issue of the *Journal of the American Society Nephrology (JASN)*.

Each year, more than 230 million major elective surgeries are performed around the world. Unfortunately, many patients who undergo major operations develop kidney injury soon after surgery, often due to decreased blood flow to the kidneys and/or the effects of inflammation.

Animal studies suggest that the cholesterol-lowering drugs called statins protect the kidneys from such damage, but whether a similar benefit occurs in humans is uncertain. To investigate, Amber Molnar, MD (University of Western Ontario and Lawson Health Research Institute, in London, Canada), Amit Garg, MD, PhD (University of Western Ontario and Lawson Health Research Institute, in London; and the Institute for Clinical Evaluative Sciences, in Toronto, Canada) and their colleagues conducted a population-based retrospective study of all older patients who underwent major [elective surgery](#) in the province of Ontario, Canada from 1995 to 2008. Surgeries included cardiac, thoracic, vascular, intra-abdominal, and retroperitoneal procedures.

A total of 213,347 patients from 211 hospitals underwent major elective surgery, and 4,020 patients (1.9%) developed postoperative kidney injury within two weeks of surgery. A total of 1,173 patients (0.5%) required dialysis within two weeks of surgery, and 5,974 patients (2.8%)

died within a month of surgery.

Prior to surgery, 67,941 patients (32%) were taking a [statin](#). Patients taking a statin were 20% less likely to develop kidney injury, need dialysis, and die compared to patients who were not taking a statin. Also, there was evidence of a dose-effect, with patients on higher potency statins having less kidney injury. In addition, statins were beneficial whether they were started greater than 90 days or less than 30 days prior to surgery.

"Our study suggests that statin use in older persons results in less [kidney injury](#) following major elective surgery and reduces the risk of premature death after surgery," said Dr. Molnar. She added that the results warrant further investigation with more rigorous studies, but such trials will be difficult to carry out. "Conducting randomized controlled trials to examine whether statins are protective against definitive renal outcomes, such as acute dialysis, will be logistically challenging given that the need for acute dialysis is a relatively rare event," she said.

More information: The article, "Statin Use Associates with Lower Incidence of Acute Injury after Major Elective Surgery" ([doi:10.1681/ASN.2010050442](https://doi.org/10.1681/ASN.2010050442)) and editorial, "Statin Use Associates with Less Acute Kidney Injury after Major Elective Surgery" ([doi:10.1681/ASN.2011020186](https://doi.org/10.1681/ASN.2011020186)) will appear online on April 14, 2011.

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