

Post coronary artery bypass infections may be linked to severe obesity

June 1 2016

Coronary artery bypass patients who have severe obesity are more likely to experience infection shortly after surgery and stay in the hospital longer, according to new research in *Journal of the American Heart Association*, the Open Access Journal of the American Heart Association/American Stroke Association.

Compared to [coronary artery](#) bypass patients with normal weight, patients with [severe obesity](#) were three times more likely to develop an infection after [bypass surgery](#), researchers said.

Coronary artery bypass surgery redirects blood flow to the heart around clogged heart arteries.

"Based on the results of this study it appears that addressing infection risk might be an effective strategy to decrease the length-of-stay for patients with obesity who undergo coronary artery bypass surgery," said Mary Forhan, Ph.D., the study's senior author and assistant professor in the Department of Occupational Therapy, Faculty of Rehabilitation Medicine, at the University of Alberta in Edmonton, Canada.

Using a Canadian database of heart patients, the new study examined how a racially and ethnically diverse group of 7,560 patients fared after having bypass surgery in Edmonton between April 2003 and March 2014.

Patients were divided according to their body mass index, a measure of

body size based on weight and height, into five groups: normal weight (BMI 18.5-24.9); overweight (25-29.9); and obesity class I (30-34.9), class II (35-39.9), and class III (40 or higher). For example, a 5-foot-4 woman would be at normal weight if she weighed 110 to about 145 pounds; she would be considered overweight from 145 to about 174 pounds, and to have obesity at 174 pounds or more. At 232 pounds she would have a BMI of 40, the threshold for severe obesity.

In the Edmonton study, 20 percent of the bypass patients were at normal weight, 40.7 percent were considered overweight, and 25.7 percent, 9.2 percent, and 4.4 percent fell into obesity classes I, II, and III, respectively.

Compared with patients at normal weight, those with severe obesity tended to be younger; were more likely to have diabetes, elevated cholesterol/triglycerides, high blood pressure, or lung disease; and were more likely to have undergone coronary angioplasty, a surgical procedure to open clogged arteries in the heart, the researchers reported.

The study also found that:

Patients with severe obesity were 56 percent more likely to have complications within a month of surgery, and those with a BMI classified as having moderate (class II) obesity had a 35 percent higher risk.

The median hospital stay—the point where half the patients stayed fewer days and half stayed more—was a day longer for patients with severe obesity than for patients of [normal weight](#). In patients with severe obesity, patients with diabetes who experienced an infection had hospital stays 3.2 times longer than patients without either condition.

Those findings emphasize a need for attentive care in bypass patients

with diabetes, Forhan said. "We know that wound healing in general is affected by poorly controlled glucose levels, and that adipose (fat) tissue may take longer to recover from trauma" such as the kind that occurs during surgery, she said. "Therefore, as is recommended for all patients, efforts to ensure good glycemic control for patients with diabetes pre- and post-bypass are important."

Why these patients are more likely to develop infections isn't clear, Forhan said.

"We need further study that includes ways of preventing infection using evidence-based methods, and determining if such methods meet the needs of coronary artery bypass patients with moderate to severe obesity."

The study did not determine types or locations of patients' infections, a topic the researchers plan to explore. They also intend to investigate whether chest binders used to promote healing after surgery are providing proper support in bypass patients with obesity.

Each year almost 400,000 [patients](#) in the United States undergo [coronary artery bypass](#). About 7 in 10 U.S. adults age 20 or older are classified as overweight or obese, according to the Centers for Disease Control and Prevention.

Provided by American Heart Association

Citation: Post coronary artery bypass infections may be linked to severe obesity (2016, June 1) retrieved 9 May 2024 from

<https://medicalxpress.com/news/2016-06-coronary-artery-bypass-infections-linked.html>

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