'Sickest' Patients May Do Better After Gastric Bypass Surgery

August 18, 2016
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The "novel (and contradictory) finding..." say study authors, challenges conventional wisdom as well as current literature.

Preop insulin use, taking multiple meds tied to long-term weight loss

Some of the sickest patients seemed to have the best outcomes after Roux-en-Y gastric bypass (RYGB) surgery, according to a study that looked at clinical factors associated with post-RYGB long-term weight loss.

Preoperative insulin use was tied to better percentage weight loss among patients who underwent RYGB surgery, reported G. Craig Wood, of the Geisinger Obesity Institute in Danville, Penn., and colleagues.

In addition, a history of smoking and the use of a dozen or more medications prior to RYGB were also associated with the greater long-term weight loss post-surgery, they wrote in JAMA Surgery. The retrospective cohort study followed RYGB patients prior to surgery for an average of nearly a decade. While patients who undergo RYGB are expected to lose between 30% and 40% of their overall body weight, weight loss trajectories are not guaranteed.

"While patients are usually able to lose a significant amount of weight immediately after bariatric surgery, some patients experience notable weight regain over time. Why some patients are able to maintain their weight loss over time, while others are less successful, remains unclear," wrote co-author Michelle R. Lent, PhD, in an email to MedPage Today.

The result that "some of the sickest patients have the best outcomes after surgical procedures" was surprising, noted Amy Neville, MD, of the Ottawa Hospital in Canada, in an accompanying commentary.

"The statistical findings of this study challenge our current understanding and the current literature regarding risk factors for weight regain," she wrote. "As a novel (and contradictory) finding, this must be interpreted with caution until additional studies can further investigate."

Wood, Lent, and colleagues wanted to "determine which characteristics were associated with better weight outcomes versus poorer outcomes, 7 or more years after surgery." They looked at more than 200 characteristics such as gender, medical conditions, and age to see if any of these factors related to weight change postoperatively, she added.

The authors ranked the impact that specific preoperative variables had on the patients in terms of the best and worst outcomes for total percentage of weight loss. The 726 patients were recruited during their preoperative bariatric surgery appointments. They had an average body mass index (BMI) of 47.5 kg/m². The mean age of the patient population was 45.2 and the majority (83.1%) were women. Overall, 53.9% of the patients had type 2 diabetes, and the majority of those (33.9%) were treated without insulin.

Medications that the patients were taking included sulfonylureas for diabetes, angiotensin-converting enzyme inhibitors for hypertension, and statins for hyperlipidemia. They were followed-up with six times during the first postoperative year, and once yearly after. Using the participant's electronic health records, the researchers examined 206 clinical preoperative variables to determine their impacts on total weight loss post-surgery.

"If we know which patients may be at risk for less weight loss over time, we can better treat them clinically to help them lose as much weight as possible after surgery," Lent explained.

Using multivariable models, the authors found the following characteristics were associated with the greater long-term weight loss post-surgery:

- Preoperative insulin use: 6.8% (95% CI 3.8% to 9.8%, P<.001)
- History of smoking: 2.8% (0.7% to 4.9% CI, P=0.009)
- Use of 12 or more medications: 3.1% (0.9% to 5.3%, P=0.005)

Wood's group noted that "it is unclear why preoperative insulin users seem to manifest a weight loss
trajectory that deviates from the weight loss typically reported after bariatric surgery. It is possible that insulin use necessitates greater interaction with the health care system, leading to better adherence and ultimately better weight loss."

The top preoperative clinical factors associated with the poorer long-term weight loss were:

- Preoperative hyperlipidemia: -2.8% (95% CI -0.7% to -4.9%, *P* = 0.01)
- Older age: -8.8% per 10-year increase (-3.1% to -14.4%, *P* = 0.002)
- Higher BMI: -4.1% per 5-point increase (-1.5% to -6.6%, *P* = 0.002)

The authors acknowledged that the predominantly white study population was a limitation, so they were unable to evaluate differences by race. Nonetheless, the results do have clinical application. "Clinicians may want to manage patients differently who have high cholesterol, are older or are in the highest body weight category before surgery," Lent wrote. "For example, clinicians may want to see these patients more frequently after surgery than is typically done."

Neville pointed out that "this study and the preoperative factors it analyzed are of academic interest and may guide patient counseling and expectations, but future work must focus on behavioral predictors and other potentially modifiable risk factors if we are to best serve our patients."

**Action Points**

- Some of the sickest patients seemed to have the best outcomes after Roux-en-Y gastric bypass surgery.
- Note that preoperative insulin use, a history of smoking, and the use of a dozen or more medications prior to RYGB were each associated with the greater long-term weight loss after the surgery.

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**Disclosures:**

The study was funded by the Geisinger Clinic, The Sigfried and Janet Weis Center for Research, the Geisinger Obesity Institute, the Nutrition Obesity Research Center, the Institute for Clinical and Translational Research, and the NIH's National Center for Advancing Translational Sciences.

Wood and co-authors disclosed no relevant relationships with industry.

Neville disclosed no relevant relationships with industry.

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last updated 08.17.2016

**References:**

**Primary Source: JAMA Surgery**


**Secondary Source: JAMA Surgery**


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'Sickest' Patients May Do Better After Gastric Bypass Surgery

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