



COMMENT ON AMINIAN ET AL.

## Cardiovascular Outcomes in Patients With Type 2 Diabetes and Obesity: Comparison of Gastric Bypass, Sleeve Gastrectomy, and Usual Care. Diabetes Care 2021;44:2552–2563

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We read with great interest the article published by Aminian et al. (1), where the authors found greater weight loss, better diabetes control, and lower risk of major adverse cardiovascular events 6 (MACE-6) (composite outcome including all-cause mortality, coronary artery events, cerebrovascular events, heart failure, atrial fibrillation, and nephropathy) for Roux-en-Y gastric bypass (RYGB) than for sleeve gastrectomy (SG) in patients with obesity and type 2 diabetes; however, we found some aspects of the study worth further discussion.

First, the authors detailed a lower accumulated incidence of MACE-6 in the RYGB group compared with the SG group; however, in the sensitivity analysis performed for MACE-3 results (all-cause mortality, myocardial infarction, and ischemic stroke), the difference in the accumulated incidence was not consistent with the MACE-6 results. A possible explanation for this is that nephropathy was driving the difference in the MACE-6 results between both surgical groups. We consider this to be relevant because Aminian et al. (1) defined nephropathy as an estimated glomerular filtration rate (eGFR) <60 mL/min after the index date with at least two different measures using the MDRD equation (MDRDeq). eGFR is a surrogate of renal function and is not the optimal method to evaluate kidney

function in a population with a high prevalence of type 2 diabetes and obesity (2). Furthermore, in patients with obesity, the eGFR is less accurate than in patients without obesity because of the theoretically lower muscle mass in patients with obesity (2).

Second, in the population described by Aminian et al. (1), at index date, patients had a median eGFR 90.4–91.3 mL/min in both surgical groups, as calculated by the MDRDeq; however, the MDRDeq was originally evaluated in patients with eGFR <60 mL/min, and it tends to underestimate the eGFR in patients with an eGFR >60 mL/min (3). On the other hand, previous studies have compared the accuracy of MDRDeq to that of the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation, in which the CKD-EPI equation appears to be noninferior to the MDRDeq in individuals with eGFR <60 mL/min and seems to reduce bias in individuals with BMI >30 kg/m<sup>2</sup>, especially in individuals with GFR >60 mL/min/1.73 m<sup>2</sup> (3,4). The use of the MDRDeq could have provoked a methodological bias that could alter the conclusion of the study and should be mentioned in the limitations section.

Third, we would like to comment on the difference in insulin use between the surgical groups. Aminian et al. (1) reported 33% vs. 51.5% insulin use in the RYGB and SG groups, respectively.

This difference is significant because it suggests that the SG patients needed a more intense diabetes treatment to reach an HbA<sub>1c</sub> similar to that of the RYGB group; thus, as previously stated, all of these factors could have affected the final outcome in both surgical groups. Last, we recognize the utility of the study (1), and we think these observations could improve the methodology of future studies and help to investigate and analyze quality information on the metabolic differences between types of bariatric surgery.

**Duality of Interest.** No potential conflicts of interest relevant to this article were reported.

### References

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