Response

Response: Factors Predicting Weight Loss after "Sleeve Gastrectomy with Loop Duodenojejunal Bypass" Surgery for Obesity (J Obes Metab Syndr 2020;29:208–14)

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Several variables are used to analyze weight-loss outcomes after bariatric surgery, such as weight loss (WL), change in body mass index (BMI) or BMI loss (BMIL), percent excess weight loss (%EWL), percent excess BMI loss (%EBMIL), percent total weight loss (%TWL) and percent total BMI loss (%TBMIL). Among these, %TWL and %EWL are the most commonly used. Some authors have suggested that %TWL should be the metric of choice to measure weight-loss outcomes, as it is less influenced by preoperative variables such as BMI compared to %EWL.[1] However, these recommendations were based only on retrospective analysis of Roux-en-Y gastric bypass (RYGB) data, not one anastomosis duodenal switch (OADS) procedures such as single anastomosis duodenoileal bypass with sleeve (SADI-S) or sleeve gastrectomy with loop duodenojejunal bypass (SG-LDJB). Some authors have even recommended against using %EWL (%EBMIL) as a measure of weight-loss outcomes.[2] Although %EWL (%EBMIL) is affected by preoperative variables, it remains a variable commonly used in the literature to measure weight-loss outcomes, and the sole variable used in some studies.[3] We maintain that calculation of %EWL is required to analyze weight-loss success rates.[4] %EWL ≥ 50 and %TWL ≥ 25 are com-

monly used to measure weight-loss success rate. Abandoning use of %EWL may lead to difficulty comparing results with the existing literature.

We could not provide an analysis of BMIL in the original article as the inference was similar to that of %TWL. In our study, BMIL was significantly less in males vs. females (13.79 ± 3.45 vs. 15.92 ± 3.79 kg/m^2, $P = 0.007$ and 11.88 ± 3.99 vs. 14.34 ± 3.89 kg/m^2, $P = 0.011$ at the 1-year and 3-year follow-ups, respectively). It was significantly greater in patients with preoperative BMI ≥ 40 vs. < 40 kg/m^2 (16.66 ± 3.05 vs. 11.83 ± 2.38 kg/m^2 and 15.01 ± 3.33 vs. 10.24 ± 3.34 kg/m^2 at the 1-year and 3-year follow-ups, respectively, $P < 0.001$). It was significantly less in patients with diabetes vs. those without diabetes (13.95 ± 3.74 vs. 15.62 ± 3.15 kg/m^2, $P = 0.04$ and 12.1 ± 4 vs. 15.61 ± 3.37 kg/m^2, $P = 0.005$ at the 1-year and 3-year follow-ups, respectively). Moreover, simple linear regression analysis showed that preoperative weight, BMI, excess weight significantly positively predicted BMIL at the 1-year and 3-year follow-ups. Multiple regression analysis showed that preoperative weight, BMI, excess weight and diabetes were independent predictors of BMIL at the 1-year follow-up, but only diabetes

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was at the 3-year follow-up. These findings were similar for %TWL, and thus we selected only %TWL as a dependent variable in our study.[5] Furthermore, a preoperative BMI of < 50 kg/m² in the majority of the patients prompted us to consider %EWL in our study.

In the letter, it was mentioned that %EWL is largely influenced by preoperative BMI, distorting true weight-loss efficacy in favor of those with lower BMI. However, even %TWL and BMIL are significantly influenced by preoperative BMI and weight, as shown in our results, distorting the true weight-loss efficacy in favor of higher BMI patients. A study cohort of lower BMI patients yields lower %TWL, BMIL and higher %EWL. Similarly, a cohort with higher BMI patients yields higher %TWL, BMIL and lower %EWL. Therefore, using only a single variable such as %TWL to define weight-loss outcomes can yield misleading interpretation of study results and make comparison of the results with the other studies difficult.[6] Similarly, BMIL alone does not provide sufficient information. Moreover, earlier studies on OADS procedures used either %TWL or %EWL or both.[7] To compare the results of our study with these studies, it was necessary to use both variables. The importance of %EWL, despite its limitations, has been described previously in American Society for Metabolic and Bariatric Surgery guidelines.[6]

There is no gold standard variable for defining weight-loss outcomes. Even in standardized outcomes reporting, four variables are recommended: preoperative BMI, BMIL, %TWL, and %EBMIL.[6] %EBMIL is clinically relevant, because obesity is classified based on BMI.[6] It is recommended to calculate %EWL and %EBMIL using the BMI reference point 25 kg/m² to standardize reporting.[6] %EWL and %EBMIL (and %TWL and %TBMIL) can be used interchangeably as they yield exactly the same results, even though the formulas to calculate these variables are different.[5] van de Laar et al.[8] suggested using alterable WL as a measure of weight-loss outcome as it is the only variable independent of preoperative BMI. It is better to analyze more variables, and interpret how each variable changes with different independent variables, rather than to define weight-loss outcomes based on a single variable to minimize the inherent bias of any inter-group comparisons based on a single variable. Since the most commonly used parameters are %TWL and %EWL, it is preferable to use

both of them. Including WL and BMIL also makes the results more comprehensive.

Chang et al.[9] showed that poor weight-loss outcomes in patients with diabetes were due to patient age rather than diabetes itself. However, this was a retrospective study analyzing patients who underwent laparoscopic sleeve gastrectomy and RYGB, not SADI-S or SG-LDJB.[9] In our study on SG-LDJB, patients with diabetes were significantly older than those without diabetes, but the preoperative BMI of both groups was similar. Diabetes was found to be an independent predictor even after adjusting for age as a variable in multiple regression analysis. Several studies showed that diabetes is an independent predictor of weight-loss outcomes.[3,10] The universal limitation of all of the above studies, including ours, is their retrospective nature. To help address the drawbacks of a retrospective study, we further analyzed data on our patients suffering from diabetes to study the effect of diabetes severity on weight-loss outcomes and found that patients with lower ABCD scores had significantly lower BMIL and higher %EWL. ABCD scores were inversely proportional to diabetes severity.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Study concept and design: AV; analysis and interpretation of data: all authors; drafting of the manuscript: AV; critical revision of the manuscript: all authors; statistical analysis: all authors; administrative, technical, or material support: CK; and study supervision: CK.

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