IFSO

LETTER TO THE EDITOR

Are the Common Statistics Used in the Bariatric Surgery Always Valid to Be Relied on?

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Dear Editor,

We read with great interest the randomized prospective study by Eskandaros et al. [1], exploring the role of the Biliopancreatic limb length (BPL) on the weight loss and resolution of comorbidities of patients undergoing Roux-en-Y gastric bypass (RYGB).

We noticed that despite of an accurate setting for this trial, some statistical analyses may not be valid to be relied on for interpretation of the results.

We believe that to enhance the quality of the studies in the field of bariatric surgery, we should evaluate the efficacy of the statistical models commonly used in this field. And, sometimes we face inappropriate tests that are used to assess the results in a univariate model, while for elimination of confounding factors we need to perform more complex tests such as regression modeling [2, 3].

These are the points that need to be addressed in this specific paper:

1. As they claimed that this trial is based on randomization of patients by a computer program, they did not report the sample size measures. This led to unknown "effect measure" for interpretation of statistical analyses.

2. For better interpretation of results, they do not have to perform independent T test since it only unilaterally measures the effect of time periods or the effect of BPL on the outcomes. They eventually performed the repeated measure ANOVA test which is valid enough to interpret the results, alone.

3. They did not demonstrate if they assessed the ANOVA classical assumptions?

4. In interpretation of the ANOVA test, we need to look at 3 different Fisher's exact effects (F): intergroups, intragroups, and counter effects. But, regretfully the authors did not specifically present all three of these Fs.

5. We can only refer to post hoc results, if the counter effect F is statistically significant; hence, we cannot present it in a study when the results are not significant, but the authors have displayed it in this paper. Moreover, they are supposed to present both BPL groups (S-RYGB, L-RYGB) in each time proportions (1, 2, 3 years), and vice versa.

With deeper evaluations, it seems like they only performed one-way ANOVA rather than repeated measure ANOVA test, which can possibly devaluate their reported outcomes.

We will continue to advocate for a clearer statistical approach that is tailored to the individual patient's characteristics and reflective of the rational realities of each case. For this strategy, sharper evaluation of the statistics is the key.

Declarations

Conflict of Interest The authors declare no competing interests.

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