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LETTER TO EDITOR/LED REPLY

In Reply to the Invitation from the Editor to the Letter "What Is the Current Evidence to Define the Length of the Alimentary Limb in the Laparoscopic Gastric Bypass Technique?"

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Dear Editor,
We had sincerely read the letter from the reviewers. We appreciated the substantial review on our article and in the meantime, we were so honored and so grateful to submit a satisfying reply as far as we could.

To Answer the Question in the Title

Alimentary limb (AL) was defined as the bowel segment from the gastrojejunal anastomosis to the jejunojejunal anastomosis [1, 2]. Some studies [3–5] performed this segment at the length of 40–100 cm, which was defined as "short" in our meta-analysis. Some [3–7] measured 130–150 cm of the segment, which was regarded as "standard." Some [6, 7] used alimentary limb length at 170–250 cm, regarded as "long."

Although the bowel segment was clearly defined, unfortunately, the detailed technique of the measurement was not distinctly described in most studies. Most studies illustrated the length by use of figures. It was an unescapable fact that a potential heterogeneity existed in the measurement of AL among these studies included in our review.

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Re-analysis of the Four RCTs from the Letter

In the first study [8], two groups were performed, with AL sizes of 75 cm ("short") and 150 cm ("standard", not "long"), respectively. The baseline BMI grade of both groups was > 50 kg/m^2. A significant difference was shown in either 24 or 36 months of weight loss, in which the results were in accordance with the results from our meta-analysis.

In the second study [9], two pairs of groups were designed, one at 75 cm versus 150 cm with a baseline BMI < 50 kg/m^2 and another at 150 cm versus 250 cm with a baseline BMI > 50 kg/m^2. No statistical difference was found in the anterior pair. A considerable difference was found from 18 to 36 months, but it could be also highlighted in this period, with the BMI grade of both groups of patients < 50 kg/m^2. This new finding seemed to provide us a new potential clue that the long-term postoperative BMI grade might also be an influential factor on the effect of RYGB, possibly not merely limited to the baseline BMI grade.

In the third study [10], 50 cm ("short") and 150 cm ("standard", it might be miswritten as 100 cm in the letter) were respectively performed. However, it was unambiguous that the "short" group was performed with a biliopancreatic limb (BL) of 50 cm, while the "standard" group with BL of 100 cm. In this study, AL was not the only variate while the difference of BL between groups could not be ignored, the role of which we had highlighted in the "Discussion." In addition, the baseline BMI grade of the patients was also < 50 kg/m^2.

The result of no difference was similarly in accordance with our meta-analysis, although the difference of BL might influence in some degree. As a result, it was probably not correct to be evident on the theme of our meta-analysis.

In the fourth study [2], compared with "proximal" group, more perioperative complications were shown in the "distal" group. It was exactly our negligence that we did not include the

safety data into the analysis. We were very grateful to the reviewers for the suggestion and we also had a great interest in the long-term results of this study.

Clarification of Our Conclusion

Thanks so much again for summarizing our "Conclusion" in the letter. The three points were detailed and distinct. But we would like to make some supplements and corrections.

1. In the patients (BMI < 50 kg/m^2), "short" worked as well as "standard." While in the patients (BMI > 50 kg/m^2), "short" also reduced weight a lot but "standard" worked better.
2. Because of the limitation of the studies, the study of "standard" versus "long" design in BMI < 50 kg/m^2 was not found. As a result, we could not support the conclusion summarized from the reviewers. We hoped more evidence in the future would justify whether it was true or false.
3. In terms of the effect (mainly BMI loss and %EWL) of RYGB, we suggested the patients (BMI > 50 kg/m^2) to choose "standard" instead of "short." And in terms of the more complications in "long," we suggested choosing "standard" since there was no statistically different effect between the two lengths.

About the Limitations and Highlights of Meta-analysis

Meta-analysis was substantially a type of review, which quantitatively analyzed relative studies. Limitations were unescapable, such as various heterogeneity between studies in baseline character and follow-up time. The existence of heterogeneity would influence the precision of the result, even the validity. To reduce it, the rigorous design of inclusion and exclusion criteria was important and the analysis methods were also needed correctly performed [11–13]. The validity of meta-analysis was based on well-designed criteria and correctly chosen methods.

Personally, meta-analysis contributed as a review more to provide a potential idea for researchers, not just a merge of relative studies. We hoped more RCTs in the future would be designed with a larger sample and higher quality to justify the validity of our meta-analysis.

Acknowledgements Thanks so much again for the great interest and substantial review of our meta-analysis. We are very willing to reply more letters to us to discuss any questions in this article. Thanks so much for the opportunity and platform for academic exchanges provided by "Obesity Surgery."

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Statement on Human and Animal Rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent Not applicable.

Ethical Approval Not applicable.

Abbreviations *RYGB,* Rou-en-Y gastric bypass

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