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Commentary

A commentary on "Roux-en-Y versus single loop reconstruction in pancreaticoduodenectomy:A systematic review and meta-analysis"

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Dear editor,

In a recent meta-analysis, Mobarak et al. [1] compared the effectiveness and safety of Roux-en-Y versus single loop reconstruction in pancreaticoduodenectomy. Based on the pooled results, they found that Roux-en-Y was not superior to single loop reconstruction. We read this article with interest. As we are working on an empirical investigation of methodological validity of meta-analyses of surgical interventions, we have several comments on this article.

In surgical interventions, one important factor that can largely impact prognosis is operation time. In the meta-analysis, the authors treated operation time as an outcome and found patients with Roux-en-Y procedures demonstrated a longer operation time [1]. This suggested that a risk existed that other outcomes (e.g. bleeding) could be impacted by different operation times. However, the authors failed to take into account that operation time can be a confounder in adjusting the results, thus not being able to provide more valuable information for clinical practice.

We noticed that the authors collected the study durations and presented the information in a Table. They also highlighted in the Results Section that the study durations ranged from 11 to 184 months. For surgical interventions, there is a close relationship between effectiveness/safety outcomes and study durations, explaining why in many original studies authors would divide outcomes into short-term and long-term outcomes [2]. In our opinion, a further subgroup analysis or meta-regression analysis should have been done to investigate the impact of study duration on outcomes.

In addition, we noticed in the supplementary files of the forest plots that there were several studies without any events in both the arms (double-zero studies), and the authors excluded such studies from the meta-analyses. To some extent, this is what many other meta-analyses have done. This is not appropriate as by excluding such studies, the authors treated them as non-informative. Previous studies have highlighted that by excluding such studies, the effects can be pushed far from the null and can even alter the conclusions [3,4]. We take the example of the overall mortality on randomized trials in this manuscript where 3 of the 4 studies were double-zero studies and were excluded from the meta-analysis. The authors then got a pooled OR of 5.26 (95%CI: 0.24, 113.11). We re-analysed the data by using continuity correction to include the 3 double-zero studies for the meta-analysis using the fixed-effect model. We used the continuity correction because the 3 studies were balanced in sample sizes (1: 1 design) and this method would work well [4]. After pooling the 3 double-zero studies into the meta-analysis, our results showed that the pooled OR decreased to 2.06 (95%CI: 0.37, 11.35) — i.e. from large effect to moderate effect! Thus, further sensitivity analysis using double-zero studies is advisable.

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