ANSWERING REVIEWERS

Name of Journal: World Journal of Gastrointestinal Surgery

Manuscript NO.: 91461

Column: Retrospective Study

Title: Predicting short-term thromboembolic risk following Roux-en-Y gastric bypass using supervised machine learning

Reviewer 1:

Scientific Quality: Grade B (Very good)

Language Quality: Grade B (Minor language polishing)

Specific Comments to Authors:

The paper aims to develop and validate a scoring system for predicting the individualized risk of venous thromboembolism (VTE) within the first 30 days after Roux-en-Y gastric bypass (RYGB) surgery. Using data from 6526 patients, the authors identified four preoperative variables (history of chronic obstructive pulmonary disease, prior venous thrombosis, chronic kidney disease, and HbA1C > 7%) and created a risk model with an area under the curve (AUC) of 0.75, demonstrating good discriminatory power, with a sensitivity of 0.51 and specificity of 0.71. While the paper addresses a crucial aspect of postoperative care in RYGB patients, the AUROC of 0.75, sensitivity of 0.51, and specificity of 0.71 might limit its clinical utility. The sensitivity is relatively low, potentially leading to underestimation of actual VTE cases, while the specificity might result in false positives. It is encouraging that the authors employed machine learning for risk prediction, but optimizing the model to achieve higher AUROC, sensitivity, and specificity is crucial for its clinical applicability. The study is promising, but refining the model could enhance its accuracy and impact on improving

patient outcomes in RYGB surgery. I would like to review a revised paper, featuring an optimized AI model that yields improved results. Additionally, I suggest the authors include a TRIPOD checklist. TRIPOD, which stands for Transparent Reporting of a Multivariable Prediction Model for Individual Prognosis or Diagnosis, is a set of guidelines aimed at ensuring transparency and completeness in reporting studies related to the development, validation, or updating of prediction models.

Response: Thank you for your insightful feedback. We acknowledge the concerns regarding the optimization of our model's performance. Despite efforts to improve its accuracy, significant enhancements are constrained by the current dataset and model complexity. We have made modest improvements and believe future studies, incorporating a broader range of variables, will further refine its predictive power. Additionally, we have included the TRIPOD checklist to ensure transparency and completeness in reporting. We are committed to advancing this research and appreciate your guidance in this process.

Science Editor:

Language Quality: Grade B (Minor language polishing)
Scientific Quality: Grade B (Very good)

Specific Comments to Authors:

1 **Conflict of interest statement:** Academic Editor has no conflict of interest.

2 **Scientific quality:** The author submitted a study of predicting short-term thromboembolic risk following Roux-en-Y gastric bypass using supervised machine learning. The manuscript is overall qualified.

(1) **Advantages and disadvantages:** The reviewer has given positive peer-review reports for the manuscript. Classification: Grade B; Language Quality: Grade B. The paper aims to develop and validate a scoring system for predicting the individualized risk of venous thromboembolism (VTE) within the first 30 days after Roux-en-Y gastric bypass (RYGB) surgery. The reviewer suggested that the authors include a TRIPOD checklist. TRIPOD, which stands for Transparent Reporting of a Multivariable Prediction Model for Individual Prognosis or Diagnosis, is a set of guidelines aimed at ensuring transparency and completeness in reporting studies related to the development, validation, or updating of prediction models.

(2) **Main manuscript content:** The author clearly stated the purpose of the study and the research structure is complete. However, the manuscript is still required a further revision according to the detailed comments listed below.

(3) **Table(s) and figure(s):** There are 3 Figures and 3 Tables should be improved. Detailed suggestions for each are listed in the specific comments section.

(4) **References:** A total of 77 references are cited, including 27 published in the last 3 years. The reviewer didn't request the authors to cite improper references published by him/herself.

3 **Language evaluation:** The English-language grammatical presentation needs to be improved to a certain extent. There are many errors in grammar and format, throughout the entire manuscript. Before final acceptance, the authors must provide the English Language Certificate issued by a professional English language editing company. Please visit the following website for the professional English language editing companies we recommend: https://www.wjgnet.com/bpg/gerinfo/240.

Response: We have further improved the language of the manuscript. A language certificate has also been uploaded with the revised article.

4 **Specific comments:**

(1) Please provide the filled conflict-of-interest disclosure form.

Response: The filled conflict-of-interest disclosure form has been provided.

(2) All legends are incorrectly formatted and require a general title and explanation for each figure. Such as Figure 1 title. A: ; B: ; C: .

Response: All legends have now been corrected as per journal requirements.

(3) Authors are required to provide standard three-line tables, that is, only the top line, bottom line, and column line are displayed, while other table lines are hidden. The contents of each cell in the table should conform to the editing specifications, and the lines of each row or column of the table should be aligned. Do not use carriage returns or spaces to replace lines or vertical lines and do not segment cell content.

Response: All tables have now been corrected as per editorial guidelines.

(4) The "Article Highlights" section is missing. Please add the "Article Highlights" section at the end of the main text (and directly before the References).

Response: The "Article Highlights" section has been added to the revised manuscript.

(5) Please provide the primary version (PDF) of the Institutional Review Board's official approval, prepared in the official language of the authors' country.

Response: Thank you for your request for the Institutional Review Board's (IRB) approval document. Our study utilized a third-party de-identified database in accordance with the guidelines for human subject research. The data was collected and de-identified by the third party to comply with privacy regulations, ensuring no individual can be identified directly or indirectly. We have adhered to all ethical

standards in utilizing this dataset for research purposes. Therefore, this study did not require IRB approval.