Biostatistics Review Certificate

Manuscript Title: Clinicopathological Features of Patients Undergoing Surgery for Pancreatic Cancer with Very Early Postoperative Recurrence
Manuscript ID: 111376
Journal: World Journal of Gastrointestinal Surgery

We, the undersigned, certify that the statistical analyses in the above-referenced manuscript have been reviewed for accuracy and appropriateness. The retrospective cohort study, involving 303 patients (28 with very early recurrence [VER] and 251 without), utilized appropriate statistical methods, including:

- Kolmogorov–Smirnov test for normality.
- Student's t-test and Mann–Whitney U test for continuous variables.
- Pearson's chi-square test for categorical variables.
- Univariate and multivariate logistic regression for predictor analysis.
- Random forest modeling for nonlinear pattern detection, with feature importance rankings.
- Receiver operating characteristic (ROC) curves using Youden's method for cut-off values.
- Sensitivity analysis for imaging timing variability.
- Ablation analysis for predictor contributions.

The analyses were performed using SPSS Statistics version 24.0 (IBM Corp., Armonk, NY, USA) and Python (scikit-learn). All reported p-values, odds ratios, confidence intervals, and predictive metrics (AUC, sensitivity, specificity) were verified for accuracy.

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