

Evaluation of CR-POSSUM, Original ACPGBI and New ACPGBI Scoring Systems for Colorectal Cancer Surgery

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Abstract

Purpose: To compare the Colorectal Physiological and Operative Score for enumeration of Mortality and Morbidity (Cr-POSSUM) with the original Association of Coloproctology of Great Britain and Ireland (ACPGBI) and new ACPGBI scoring systems for their ability to predict mortality after colorectal cancer surgery.

Methods: We retrospectively calculated the Cr-POSSUM, original ACPGBI and new ACPGBI scores of 105 patients who underwent colorectal cancer surgery. Data were obtained from patients' medical records and operative notes. Mortality was defined as death within 30 days of surgery. Scores were validated by assessing their calibration and discrimination. Calibration was assessed using the Hosmer-Lemeshow test and corresponding calibration curves. The discriminative capability of the models was evaluated using receiver operating characteristic (ROC) curve analysis.

Results: The observed mortality rate was 4.8 %. The overall estimated risks of death of the Cr-POSSUM, original ACPGBI, and new ACPGBI scores were 9.92%, 7.35% and 4.20%, respectively. The results of areas under the curve (AUC) for Cr-POSSUM, original ACPGBI and new ACPGBI scores were 0.792, 0.844 and 0.801 respectively.

Conclusions: The Cr-POSSUM, original ACPGBI and new ACPGBI scoring systems are accurate in determining mortality rates and for predicting the risks of death in individual patients. The new and original ACPGBI scoring systems performed slightly better than the Cr-POSSUM scoring system.

Key words: colorectal cancer, Cr-POSSUM, original ACPGBI, new ACPGBI, mortality

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