

Trends in Preoperative Risk Stratification and Survival in Patients Undergoing Pancreatic Resection



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Background: Pancreatic cancer, in all stages, has a high mortality rate with a 5-year survival of 12 percent. Surgeons use considerable caution when recommending pancreatic resection to patients who have a high risk of postoperative complications, as surgical intervention may compromise their quality of life in the setting of high disease-specific mortality. Clinical scores that identify patient surgical risk based on comorbidities and clinical presentation have been developed; however, little is known about the relationship between these scores and postoperative survival in

pancreatic resection patients. This study examines the association between a patient's calculated clinical risk score and 1-year and median survival from the date of surgery.

Methods: A retrospective cohort was assembled of patients who underwent pancreatic resection for pancreatic adenocarcinoma at a single tertiary referral center between January 2008 and May 2023. Using the National Surgical Quality Improvement Program Risk Calculator (NSQIP RC), patients were separated into above and below average risk groups. Average risk was determined according to NSQIP data for 'all complication' risk associated with a specific pancreatic resection CPT code, including distal pancreatectomy, pancreaticoduodenectomy, or pylorus-preserving pancreaticoduodenectomy. Similarly, using McGill Brisbane Symptom Scores (MBSS), patients were separated into low (0-9 points) and high risk (12-21 points) groups. Survival analysis was performed using the Kaplan-Meier method. Comparisons between groups were analyzed using log-rank tests and Cox proportional-hazards models.

Results: A total of 94 patients underwent pancreatic resection for adenocarcinoma. Seventy-five of whom had a pancreatic head resection and were included in the MBSS group. Across all patients, one-year survival was 84% and median survival was 40 months. In the MBSS high and low groups, one-year survival was 77% and 87%, and median survival from date of surgery was 33 and 45 months, respectively. In the NSQIP above and below average risk groups, one-year survival was 78% and 91%, and median survival from date of surgery was 45 and 38 months, respectively. Difference in one-year survival and median survival were not statistically significant between either clinical risk groups.

Conclusions: There was a non-significant trend toward higher mortality at one year for patients in both the high-risk MBSS and above average risk NSQIP groups. There was no significant difference in median survival. The study was limited by a small sample size, thus future research should be done in large populations to evaluate combinations of MBSS and NSQIP preoperative risk data. This future work can inform surgical decision-making processes.