

The Impact of Postoperative Peritoneal Carcinomatosis Index on Survival of Patients with Peritoneal Surface Malignancy from Appendiceal Origin after CRS/HIPEC

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Introduction: Intraoperative peritoneal carcinomatosis index (I-PCI) and completeness of cytoreduction surgery (CRS) are predictors of survival in patients with peritoneal surface malignancy (PCM) from multiple gastrointestinal malignancies. However, I-PCI is not a reliable predictor in patients with PCM from appendiceal origin. We sought to analyze the impact of postoperative radiological PCI (PR-PCI) on survival rates in this population.

Methods: From August 2002 to January 2015, 29 consecutive patients with PCM from appendiceal origin undergoing CRS/HIPEC were included in the analysis. Patient demographics, tumor characteristics and perioperative outcomes were collected. Kaplan-Meier survival analysis and Cox proportional hazards model evaluated factors associated with increased mortality. PCI cutoff of 16 was used for both PR-PCI and I-PCI.

Results: Tumor characteristics, intraoperative variables (including PCI, HR 2.41, 95% CI 0.49-11.77) and postoperative complications were not identified as predictors of survival. Mean I-PCI and PR-PCI were 19.1 ± 11.3 and 6.6 ± 10.4 ($p < 0.001$), respectively. PR-PCI < 16 was associated with increased survival rates (HR 4.53, 95% CI 1.10-18.69, $p = 0.030$).

Conclusions: PR-PCI seems to be a more reliable predictor of survival than conventional I-PCI in patients with PCM from appendiceal origin undergoing CRS/HIPEC, likely due to a superior correlation with completeness of resection.