Paper 5

Title: Long-Term Survival After Surgical Resection for Rectal Cancer is Associated With Textbook Outcome but Not Surgical Case Volume

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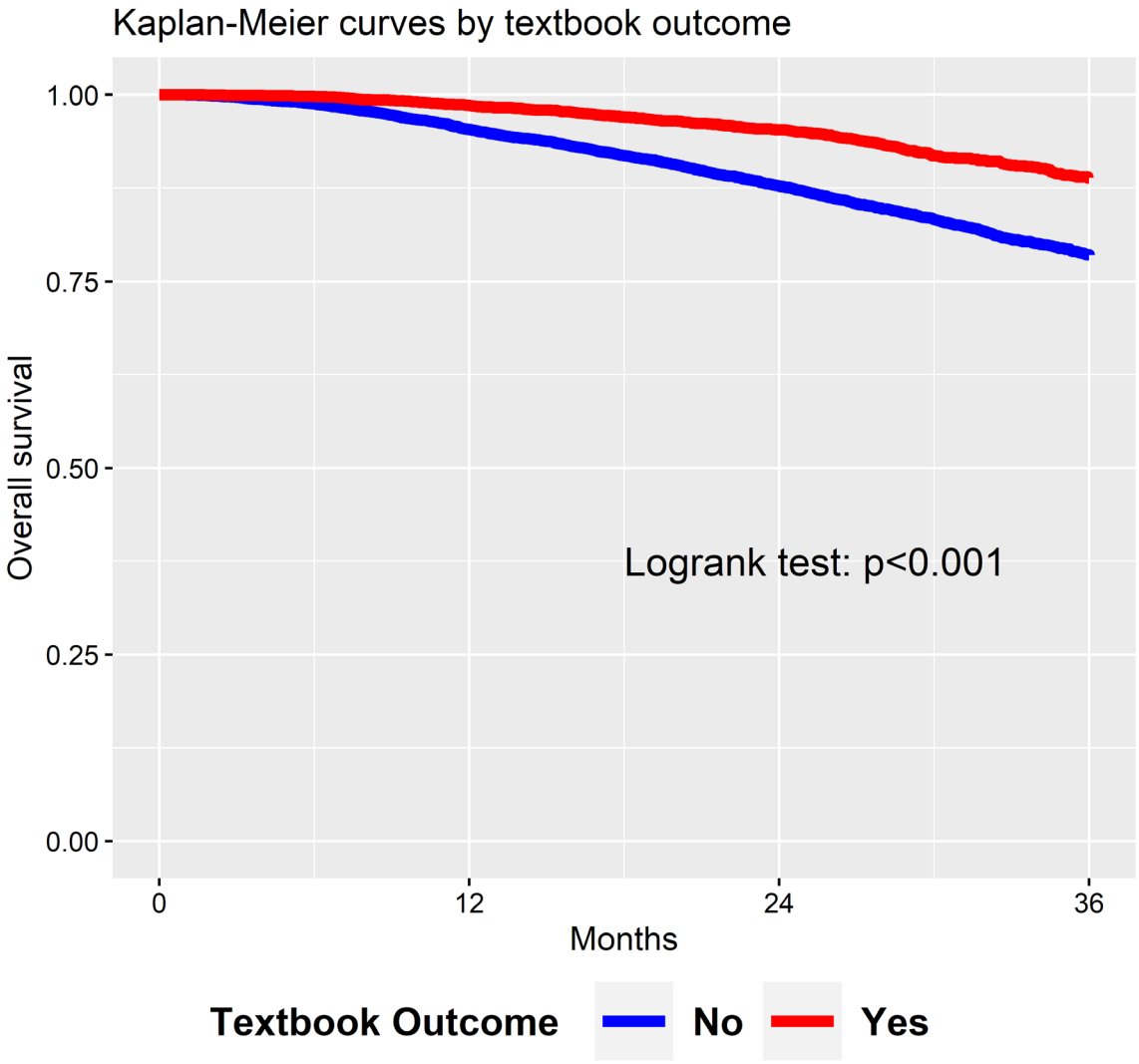
Background: Textbook outcome (TO) is a quality metric representing the ideal result following complex cancer surgery. We hypothesized that improvement in survival following rectal cancer surgery is associated with achieving a TO rather than case volume.

Methods: Using the National Cancer Database, patients undergoing surgery for rectal adenocarcinoma from 2014-2015 were identified. Low (LV), medium (MV), and high-volume (HV) hospital strata were defined by quartile cut-offs (low <25th, high >75th, and 25-75th medium volume). TO was achieved with adequate lymph node count (≥12), negative margins (R0 resection), length of stay <75th percentile, absence of 30-day readmission/mortality event, and appropriate plus timely systemic therapy. Adjusted analyses for long-term survival were performed using hierarchical multivariable Cox regression model.

Results: TO was achieved in 28.3% of 14,841 patients. LV or MV hospital patients were more likely to be Black, uninsured/Medicaid, and less likely to achieve a TO (HV 33.0% vs. MV 28.7% vs. LV 23.3%, p<0.001). TO was associated with improved 3-year survival (89.0% vs 79.0%, p <0.001). On multivariable analyses, TO was the strongest protective factor against mortality (HR 0.56, 95% CI 0.45-0.65), whereas surgery performed at HV vs LV hospital was not associated with better survival outcomes (HR 0.88, 95% CI 0.74-1.05).

Conclusions: Only 28.3% of patients undergoing resection for rectal cancer achieve TO. However, these patients had a 44% reduction in long-term mortality independent of hospital volume. Optimizing long-term survival in patients with rectal cancer can be achieved by TO criteria rather than focusing on increasing surgical case volume.


Kaplan-Meier curves by textbook outcome
1.00
0.75
0.50
0.25
0.00
Overall survival
Logrank test: p<0.001
0
12
24
36
Months
Textbook Outcome
No
Yes