

Salvage Lung Resection After Immunotherapy in Lung Cancer is Feasible and Safe

Objective:

Patients with non-small cell lung cancer (NSCLC) treated with immunotherapy show improved progression-free and overall survival. However, since residual tumor or tumor recurrence is still commonly reported, there may be a potential role for salvage lung surgery. The objective of our study was to evaluate the feasibility, safety, and outcome of salvage lung resection after immunotherapy in patients with NSCLC.

Methods:

The National Cancer Database (NCDB) was queried for patients with stage I–IV NSCLC diagnosed from 2013 to 2020. Salvage surgery was defined as surgery occurring >5 months from the initiation of immunotherapy. Overall survival was estimated with Kaplan-Meier analysis.

Results:

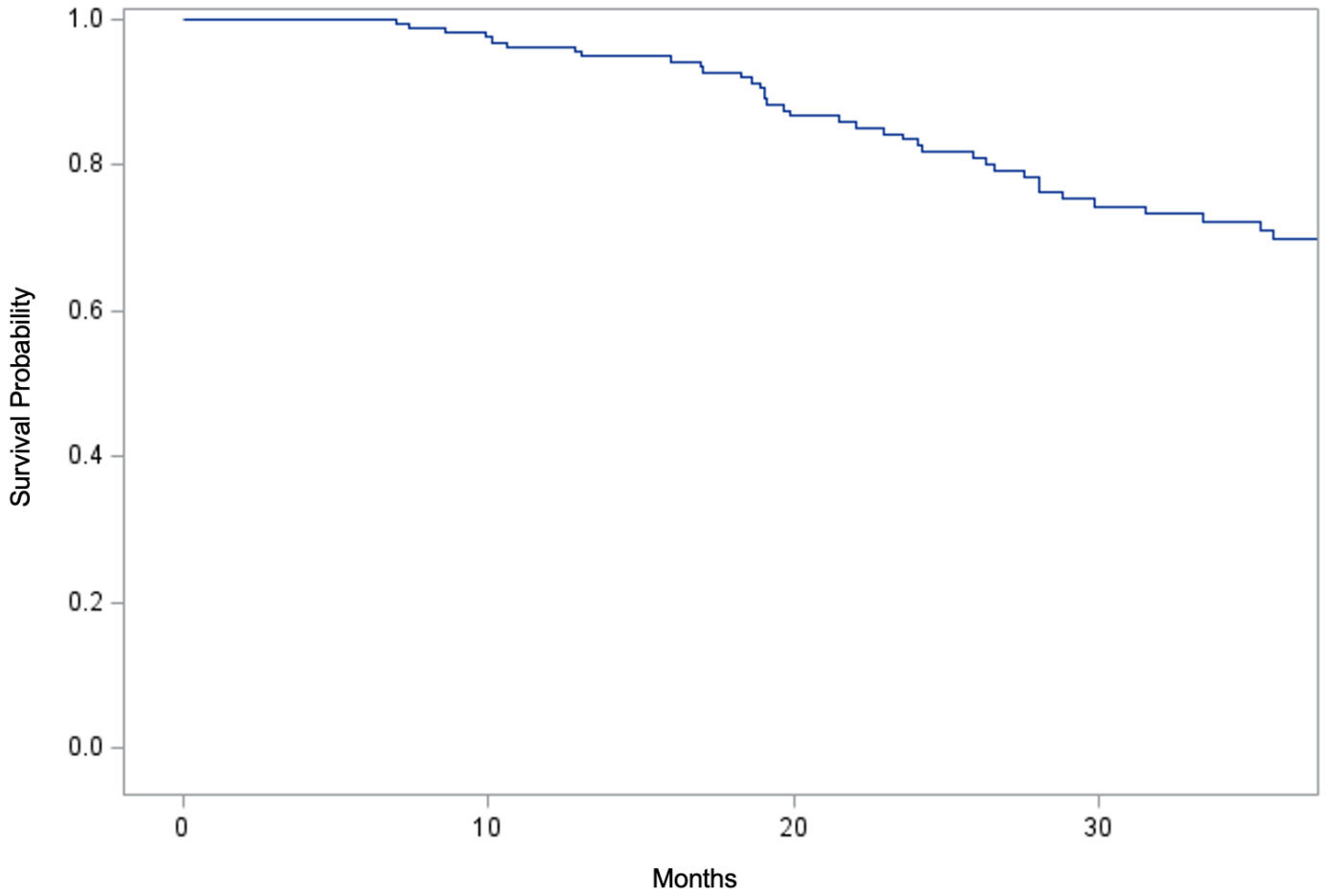
A total of 164 patients underwent salvage lung resection, predominantly for stages III and IV NSCLC. The median interval between immunotherapy initiation and surgery was 6.5 months (IQR: 5.7-8.6). Most patients underwent lobectomy, 121 (74%), followed by wedge resection in 19 (12%) patients, 15 (9%) underwent pneumonectomy, and 9 (6%) had segmentectomy. The median length of stay was 4 days (IQR: 2-6). Complete resection (R0) was achieved in 89% (n=146). The readmission rate within 30 days after surgery was 5% (n=8). The 30-day and 90-day mortality rates were 0.6% and 4.3%, respectively. With a median follow up of 27.9 months, the three-year overall survival was 77% (Figure 1).

Conclusion:

Salvage lung resection after immunotherapy for NSCLC in the NCDB was most commonly accomplished by lobectomy, largely achieved negative margins, and was conducted with perioperative outcomes that were similar to what has been reported for treatment naïve patients. Therefore, we conclude that salvage lung resection after immunotherapy is a feasible and safe treatment option in the context of a comprehensive multidisciplinary treatment strategy for non-small cell lung cancer.

Attila Nemeth (1), Maureen E. Canavan (2), Peter Zhan (3), Brooks Udelsman (3), Sora Ely (3), Dennis Wigle (4), Linda Martin (5), Chi-Fu Jeffrey Yang (6), Daniel Boffa (3), Andrew Dhanasopon (3), (1) Department for Thoracic and Cardiovascular Surgery, University Hospital Tübingen, Tübingen, Germany, (2) Cancer Outcomes Public Policy and Effectiveness Research Center, Yale University School of Medicine, New Haven, CT, (3) Division of Thoracic Surgery, Department of Surgery, Yale University School of Medicine, New Haven, CT, (4) Department of Thoracic Surgery, Mayo Clinic, Rochester, MN, (5) Department of Surgery and Cardiothoracic Residency Program, University of Virginia Health System, Charlottesville, VA, (6) Division of Thoracic Surgery, Massachusetts General Hospital and Harvard Medical School, Boston, MA

Patients Undergoing Salvage Surgery After Immunotherapy



With Number of Subjects at Risk

164

164

147

127

100

74

58