ABSTRACT

Topic:

Bronchoscopy

Title:

Clinical outcomes after interventional bronchoscopy for malignant central airway obstruction in NSCLC: the role of treatment strategy and performance status

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Background
Malignant central airway obstruction (MCAO) in non-small cell lung cancer (NSCLC) is associated with high morbidity and poor prognosis. Although interventional bronchoscopy is widely used to restore airway patency, its impact on re-obstruction, complications, and survival remains underexplored.

Methods:

We retrospectively analyzed 143 consecutive patients undergoing interventional bronchoscopy for MCAO. Time-to-re-obstruction, overall survival, and MCAO-related complications were evaluated using Kaplan–Meier estimates and Cox regression analyses. In patients developing re-obstruction, post-re-obstruction survival and outcomes after retreatment were assessed.

Results:

During follow-up, 53 patients (37%) developed re-obstruction. In multivariable analysis, stent placement was independently associated with reduced risk of re-obstruction (HR 0.54, 95% CI 0.30–0.96; p=0.036), while baseline Eastern Cooperative Oncology Group (ECOG) performance status (PS) was associated with increased risk (HR 1.46 per point increase, 95% CI 1.16–1.85; p=0.001).

Stent placement did not improve overall survival. Among patients with re-obstruction, retreatment was not associated with improved post-re-obstruction survival (HR 0.95, 95% CI 0.48–1.89; p=0.89). However, ECOG PS assessed at re-obstruction independently predicted post-re-obstruction mortality (HR 1.45, 95% CI 1.05–2.00; p=0.026). Retreatment was associated with reduced MCAO-related complications, although no significant survival benefit was observed.

Conclusions:

Airway stenting reduces re-obstruction risk and MCAO-related complications but does not improve overall survival. Following re-obstruction, prognosis appears primarily driven by performance status assessed at the

time of recurrence rather than retreatment strategy itself. Retreatment may still provide meaningful airway control and symptom palliation, supporting a personalized approach based on functional status and clinical trajectory.