

Economic burden, utilities and cost effectiveness of perioperative immunotherapies for early-stage non-small cell lung cancer (NSCLC): a systematic literature review (SLR)

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ABSTRACT

Objectives: Immune checkpoint inhibitors have demonstrated efficacy in perioperative NSCLC treatment and have been assessed for cost-effectiveness in several economic evaluations. This SLR synthesized evidence on economic evaluations, costs, healthcare resource use (HCRU), and utilities for immunotherapies in early-stage, resectable NSCLC.

Methods: A protocol-driven SLR following PRISMA standards was conducted in September 2024 to gather evidence on economic outcomes associated with immunotherapies for perioperative early-stage NSCLC. Searches in electronic databases (Embase, MEDLINE, EconLit) were supplemented by bibliographic screening, regulatory documents, and health technology assessments, with dual screening by two independent reviewers at both abstract and full-text levels.

Results: From 4,415 records retrieved, 3,043 were screened after de-duplication, with 36 deemed eligible and five additional records identified from grey literature, totaling 41 records (36 unique studies). These comprised 22 economic evaluations, 13 economic burden studies, and one study on utilities, with one study covering both utilities and costs/HCRU. Economic evaluations indicated that immunotherapy treatments for early-stage, resectable NSCLC provided clinical benefits but incurred higher costs than best supportive care/chemotherapy. Cost-effectiveness was driven by factors such as clinical effectiveness, disease-free survival, transition probabilities, quality of life, treatment costs, duration of treatment effect, healthcare resource utilization, PD-L1 status, discount rates, utility values, and survival benefits. Economic burden studies highlighted significant financial burdens, especially as the disease progressed from Stage IIA to IIIA, with adjuvant therapy incurring higher costs compared to mixed settings. Nine studies on HCRU showed higher hospitalizations and emergency visits, particularly in patients with recurrence or in more advanced stages (stage IIA vs IIIA, for example), with geographic variability. Two studies reported EQ-5D utility values for adults with resectable stage IB-IIIA NSCLC.

Conclusions: While immunotherapy for early-stage resectable NSCLC offers clinical benefits, it is associated with higher costs. Further comprehensive data on HCRU and quality of life is needed, considering the recent immunotherapy approvals.