

EFFICACY ANALYSIS OF PERIOPERATIVE IMMUNOTHERAPY REGIMENS ACCORDING TO SMOKING STATUS IN PATIENTS WITH RESECTABLE NON-SMALL CELL LUNG CANCER

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BACKGROUND AND IMPORTANCE

- **Smoking** → factor that influences the efficacy of cancer treatments.
- **Immunotherapeutic agents** → emerged as an important therapeutic strategy in the perioperative management of resectable non-small cell lung cancer (rNSCLC).

AIM AND OBJECTIVES

To develop a systematic search and evaluation about **efficacy** of immunotherapies in **rNSCLC** based on subgroup analysis according to **patient smoking status**.

MATERIAL AND METHODS

- Systematic review was conducted in **EMBASE®** and **Pubmed®** databases until September 17, 2024.
- Randomized phase III clinical trials on perioperative immunotherapies for rNSCLC with ≥ 50 patients were selected. Review records with languages other than English or Spanish were excluded.
- **Progression-free survival** (PFS) → efficacy endpoint. Analysis of efficacy was performed using aggregated data on immunotherapy regimens.
- **Two patient subgroups: current/former smokers** and **never smokers**. Heterogeneous efficacy of immunotherapy regimens between aggregated subgroup of current/former smokers and never smokers was defined as $p < 0.1$, as these were subpopulation analyses.
- The calculations were obtained from the hazard ratio values from clinical trials and the variances of their natural logarithms.

RESULTS

- **69 search records** found in EMBASE® and PubMed® databases.
- **65 were excluded:**
 - 38 studies did not involve immunotherapies
 - 12 duplicate publications
 - 11 records without selected clinical trial design
 - 2 studies on different pathologies
 - 1 evaluated different endpoints
 - 1 using an excluded language
- **4 clinical trials included** → A total of **2835 patients** recruited.
- The estimated hazard ratio of immunotherapy regimens for the aggregate subgroup of **current/former smokers** was **0.55 (95% CI 0.48–0.64)**.
- The calculated hazard ratio of immunotherapy schemes for the aggregate subgroup of **never smokers** was **0.76 (95% CI 0.52–1.13)**.
- **P** between subgroups according to smoking status reached a value of 0.12 → **no heterogeneous efficacy**.

Immunotherapeutic agents involved in the perioperative regimens for rNSCLC :

- durvalumab
- nivolumab
- pembrolizumab
- toripalimab

CONCLUSION AND RELEVANCE

Our study found no difference in the efficacy of perioperative immunotherapy regimens between current/former smokers and never smokers diagnosed with rNSCLC.

