

## Comparative efficacy and safety of tislelizumab and pembrolizumab in advanced squamous non-small cell lung cancer: a systematic review and meta-analysis

Kevin Tandarto<sup>1\*</sup>, Eko Adhi Pangarsa<sup>2</sup>, Daniel Rizky<sup>2</sup>, Budi Setiawan<sup>2</sup>, Damai Santosa<sup>2</sup>, Ika Kartiyani<sup>2</sup>, Vina Yunarvika<sup>2</sup>, Desta Nur Ewika Ardini<sup>2</sup>, Damianus Galih Panunggal<sup>1</sup>, Catharina Suharti<sup>2</sup>

<sup>1</sup>Department of Internal Medicine, Faculty of Medicine, Diponegoro University/Dr. Kariadi General Hospital, Semarang, Indonesia, <sup>2</sup>Division of Hematology and Medical Oncology, Faculty of Medicine, Diponegoro University/Dr. Kariadi General Hospital, Semarang, Indonesia

<https://doi.org/10.22146/inajbcs.v57i3.Supplement.24310>

### ABSTRACT

Submitted: 2025-09-03  
Accepted : 2025-09-09

Immunotherapy with immune checkpoint inhibitors (ICIs) has transformed the management of squamous non-small cell lung cancer (sqNSCLC). Two leading agents, pembrolizumab and the novel anti-PD-1 antibody tislelizumab, have demonstrated promising outcomes; however, direct comparisons between them remain limited. In this systematic review and meta-analysis of phase II/III clinical trials published up to July 2025, the efficacy and safety of these agents were evaluated. Both pembrolizumab and tislelizumab significantly improved overall survival (OS), progression-free survival (PFS), and objective response rate (ORR) compared with chemotherapy. However, tislelizumab showed modest advantages, including slightly improved PFS (HR 0.66 vs. 0.71), higher ORR (OR 1.82 vs. 1.75), and a lower incidence of grade  $\geq 3$  adverse events (24.3% vs. 28.9%). Overall survival remained comparable between the two treatments. These findings suggest the potential of tislelizumab as a competitive alternative to pembrolizumab, particularly in patients with poor performance status or multiple comorbidities. Nevertheless, the lack of direct head-to-head trials limits definitive conclusions and highlights the need for further comparative studies.

### ABSTRAK

Immunoterapi dengan *immune checkpoint inhibitors* (ICIs) telah merubah tatalaksana kanker paru non-sel kecil skuamosa - *squamous non-small cell lung cancer* (sqNSCLC). Dua agen utama, pembrolizumab dan antibodi anti-PD-1 generasi baru tislelizumab, menunjukkan hasil yang menjanjikan, namun perbandingan langsung antara keduanya masih terbatas. Melalui systematic review dan meta-analisis terhadap uji klinis fase II/III yang dipublikasi hingga Juli 2025, efikasi dan keamanan kedua agen tersebut dievaluasi. Baik pembrolizumab maupun tislelizumab secara signifikan meningkatkan *overall survival* (OS), *progression-free survival* (PFS), dan *objective response rate* (ORR) dibandingkan kemoterapi. Namun, tislelizumab memberikan keuntungan relatif dengan PFS yang sedikit lebih baik (HR 0,66 vs 0,71), ORR yang lebih tinggi (OR 1,82 vs 1,75), serta insidensi kejadian merugikan derajat  $\geq 3$  yang lebih rendah (24,3% vs 28,9%). Kelangsungan hidup secara keseluruhan tetap sebanding antara kedua pengobatan. Temuan ini menegaskan potensi tislelizumab sebagai alternatif yang kompetitif terhadap pembrolizumab, terutama bagi pasien dengan status performa rendah atau komorbiditas yang signifikan. Meski demikian, keterbatasan berupa tidak adanya uji klinis head-to-head tetap menghambat penarikan kesimpulan yang pasti.

### Keywords:

Tislelizumab;  
Pembrolizumab;  
Squamous NSCLC;  
Meta-analysis;  
Immune checkpoint inhibitor;  
Systematic review