

# Efficacy and safety of serplulimab plus chemotherapy in extensive-stage small-cell lung cancer

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IASLC 2026 World  
Conference on Lung Cancer  
SEPTEMBER 12 – 15, 2026  
SEOUL, REPUBLIC OF KOREA

In this indirect treatment comparison, serplulimab plus chemotherapy significantly improved progression-free survival and ranked highest for overall survival within the network, with a safety profile comparable to other first-line immunochemotherapies.

## INTRODUCTION AND OBJECTIVE

Extensive-stage small-cell lung cancer (ES-SCLC) is highly aggressive, with a poor prognosis and limited treatment options.<sup>1,2</sup>

Serplulimab plus chemotherapy has demonstrated clinical benefit in ES-SCLC, reducing mortality and disease progression, and scores highly on the European Society for Medical Oncology Magnitude of Clinical Benefit Scale.<sup>3,4</sup>

Progression-free survival is commonly used as a primary endpoint in first-line trials: it is observable earlier than overall survival and is not confounded by subsequent lines of therapy. Objective response rate is an established efficacy endpoint informing decision-making.

**Objective:** To evaluate the efficacy and safety of serplulimab plus chemotherapy as first-line treatment for ES-SCLC, compared with chemotherapy alone, atezolizumab plus chemotherapy, and durvalumab plus chemotherapy.

## METHODS

**Search** MEDLINE, EMBASE, Cochrane Library, LILACS and clinical trial registers. Selection completed in Rayyan.

**Outcomes** Overall survival (OS), progression-free survival (PFS), objective response rate (ORR), and treatment-related adverse events (TRAEs) of grade 3 or higher.

**Extraction** Study, participant and treatment characteristics, with relevant outcome data.

**Risk of bias** Assessed at outcome level using the Cochrane risk of bias tool for randomised clinical trials (RoB 2).

**Synthesis** Indirect treatment comparison between the immunochemotherapies. Treatments ranked by P-score.

**Certainty** Certainty of evidence assessed for each comparison and outcome.

## STUDY SELECTION

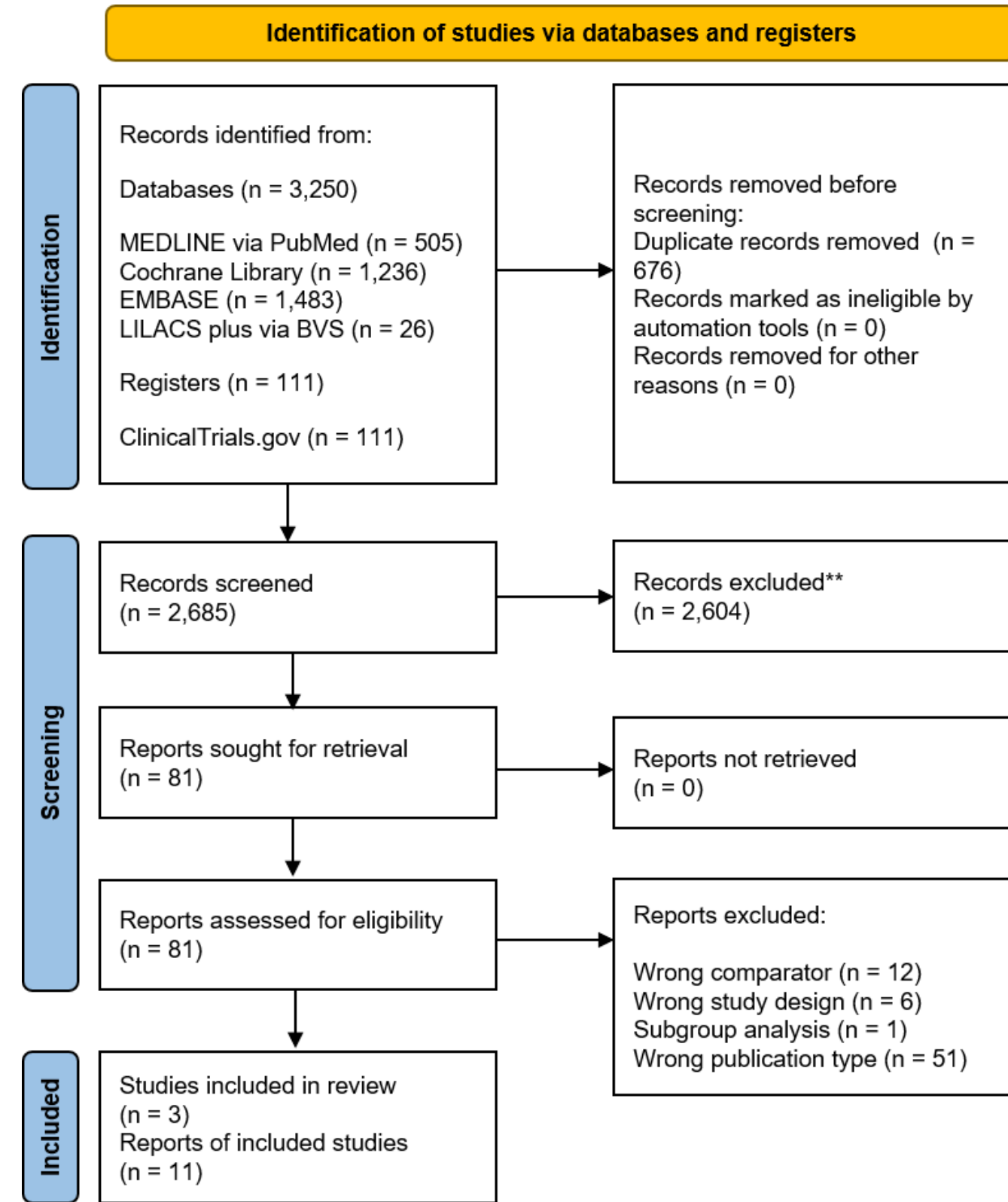


Figure 1. Flow diagram of the selection process.

## INCLUDED STUDIES

Table 1. Population characteristics.

| Study      | Intervention                   | n   | Median age (range) |
|------------|--------------------------------|-----|--------------------|
| ASTRUM-005 | Serplulimab plus chemotherapy  | 389 | 63 (28–76)         |
|            | Chemotherapy                   | 196 | 62 (31–83)         |
| CASPIAN    | Durvalumab plus chemotherapy   | 268 | 62 (58–68)         |
|            | Chemotherapy                   | 269 | 63 (57–68)         |
| IMpower133 | Atezolizumab plus chemotherapy | 201 | 64 (28–90)         |
|            | Chemotherapy                   | 202 | 64 (26–87)         |

Table 3. Treatment ranking (P-score).

| Treatment                      | OS  | PFS  | ORR |
|--------------------------------|-----|------|-----|
| Serplulimab plus chemotherapy  | 94% | 100% | 74% |
| Durvalumab plus chemotherapy   | 54% | 46%  | 90% |
| Atezolizumab plus chemotherapy | 52% | 53%  | 8%  |
| Chemotherapy                   | 0%  | 1%   | 28% |

## RESULTS

- Survival rankings (P-score): In this indirect analysis, serplulimab + chemotherapy had the highest ranking probability among the included regimens, ranking first for both PFS (100%) and OS (94%).
- Serplulimab + chemotherapy achieved a higher response rate (76.9%) after ~24 months of follow-up compared to chemotherapy alone (68.9%), durvalumab + chemotherapy (68.0%), and atezolizumab + chemotherapy (60.2%) across the separate trial populations.
- Across the ranking analysis, serplulimab plus chemotherapy showed the most balanced efficacy ranking profile in the network, positioned in the top-right quadrant, ranking first for PFS (100%) and second for ORR (74%).
- Durvalumab plus chemotherapy ranked first for ORR (90%) but third for PFS (46%). Atezolizumab plus chemotherapy ranked second for PFS (53%) and last among active therapies for ORR (8%). All rankings are relative positions within this network.
- Safety: Rates of grade ≥3 TRAEs were comparable between serplulimab + chemotherapy and the comparators. The most common TRAEs across all interventions were categorised as blood and lymphatic system disorders.

Table 2. Summary of results.

| Comparator                     | Overall survival    | Progression-free survival | Objective response rate |
|--------------------------------|---------------------|---------------------------|-------------------------|
| Chemotherapy                   | HR 0.62 (0.50–0.76) | HR 0.47 (0.38–0.58)       | RR 1.12 (1.00–1.24)     |
| Durvalumab plus chemotherapy   | HR 0.83 (0.62–1.10) | HR 0.59 (0.44–0.78)       | RR 0.95 (0.80–1.12)     |
| Atezolizumab plus chemotherapy | HR 0.82 (0.60–1.11) | HR 0.61 (0.45–0.82)       | RR 1.19 (0.99–1.44)     |

All estimates are serplulimab plus chemotherapy versus the comparator in that row; parentheses show 95% confidence intervals.

## CONCLUSION

- Efficacy: Serplulimab plus chemotherapy significantly improved PFS in ES-SCLC.
- Survival: Serplulimab plus chemotherapy had the highest ranking probability (P-score) for OS within this network.
- Safety: Safety profile was comparable to other available first-line therapies in ES-SCLC

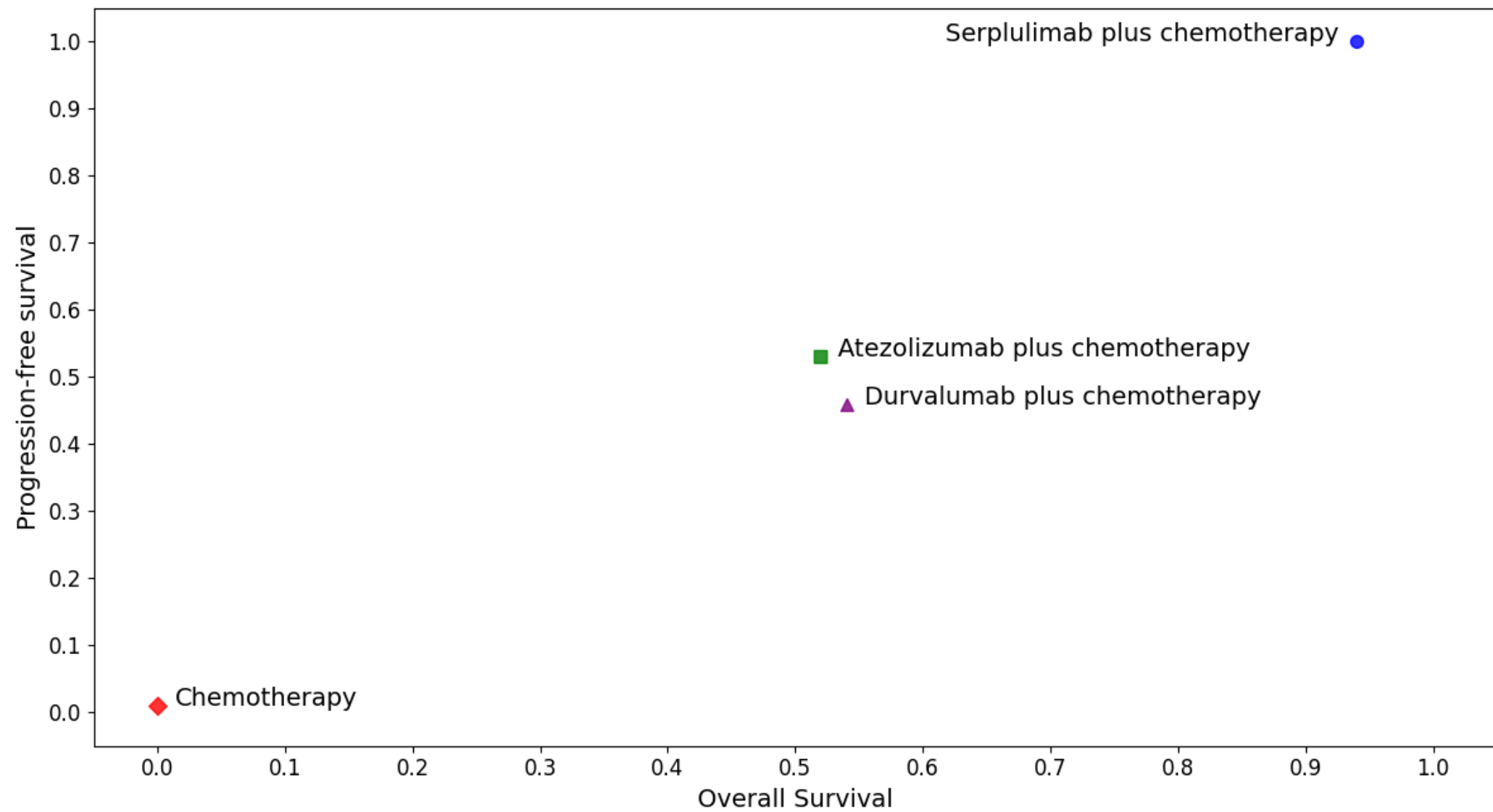


Figure 2. Treatment ranking (P-score) for overall survival and progression-free survival.

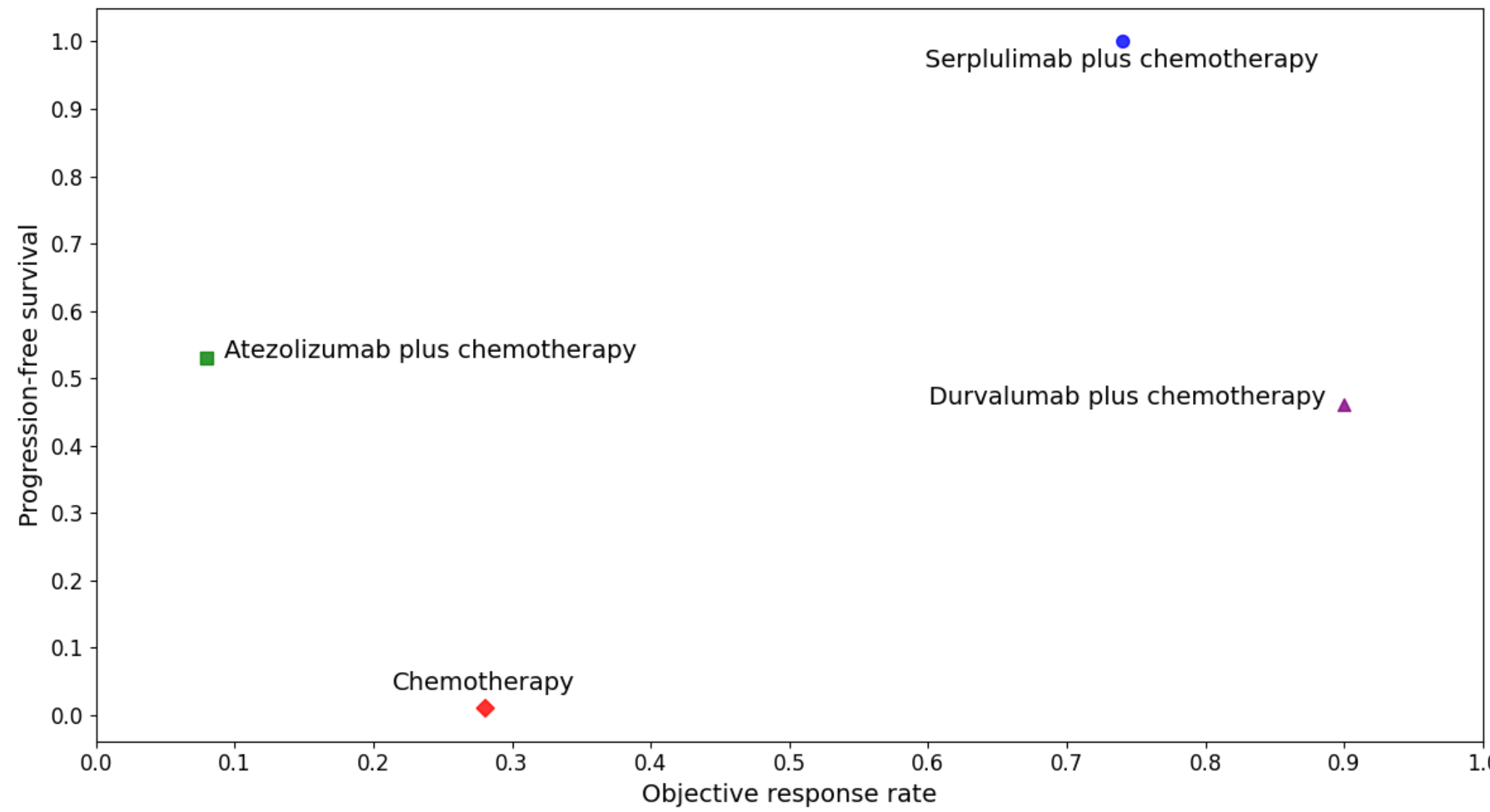


Figure 3. Treatment ranking (P-score) for progression-free survival and objective response rate.

## LIMITATIONS

- Absence of direct head-to-head data: comparisons between treatments were based on indirectly comparison via a common comparator could not eliminate cross-study differences.
- Small network size: only three trials met the inclusion criteria, which may limit the precision of the indirect comparison.

### REFERENCES

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### FUNDING AND DISCLOSURES

**Funding** Abbott Products Operations AG, Switzerland.  
**Disclosures** KK is an employee of Abbott Products Operations AG. TM, GS, JO and HK: disclosures to be supplied.  
**AI use** AI was not used in the study development or execution, analysis of the results or writing of the poster.

### ABBREVIATIONS

CI, confidence interval; ES-SCLC, extensive-stage small-cell lung cancer; HR, hazard ratio; ORR, objective response rate; OS, overall survival; PFS, progression-free survival; MCID, minimal clinically important difference; RoB 2, Cochrane risk of bias tool version 2; RR, relative risk; TRAE, treatment-related adverse event.