

EP11.09 | Five- and Six-Year Survival Outcomes of the IMpower150 Regimen in Advanced NSCLC: A Real-World Observational Study

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INTRODUCTION

- The IMpower150 regimen — atezolizumab, bevacizumab, carboplatin and paclitaxel (ABCP) — improved PFS and OS in advanced non-squamous NSCLC, including EGFR-mutant disease.
- Bevacizumab is hypothesized to enhance antitumor immunity through vascular normalization and increased T-cell infiltration.
- The 5-year update of the pivotal trial showed a tail plateau, suggesting a potentially cured subset of patients.
- Real-world populations are older, less selected and span multiple treatment lines. No real-world study has reported survival beyond 5 years.

Objective

To report the first 5- and 6-year real-world survival outcomes with ABCP, together with subgroup analysis by treatment line, factors associated with long-term survival, and a detailed safety profile including the time course of peripheral neuropathy.

METHODS

Design

Single-centre retrospective and prospective observational study, Fukuoka University Hospital, Japan. Data cut-off 14 March 2026.

Patients

63 consecutive patients with advanced non-squamous NSCLC treated with ABCP between February 2019 and December 2025 (37 first-line; 26 second-line or later).

Treatment

Atezolizumab 1200 mg, bevacizumab 15 mg/kg, carboplatin AUC 6 and paclitaxel 175 mg/m² every 3 weeks for 4–6 cycles, followed by atezolizumab plus bevacizumab maintenance.

Endpoints and analysis

PFS and OS (primary); ORR, DCR and safety (secondary). RECIST v1.1; CTCAE v5.0. Kaplan–Meier with log-rank test; competing-risk cumulative incidence for grade ≥2 peripheral neuropathy; Fisher's exact test for univariate analysis. R version 4.3.0.

Statistics

Kaplan–Meier for PFS/OS; log-rank test for subgroup comparison; competing-risk cumulative incidence for grade ≥2 peripheral neuropathy; Fisher's exact for univariate analysis. Two-sided p<0.05 significant. Data cut-off: 14 March 2026.

Table 1. Selected baseline characteristics (N = 63)

Characteristic	n (%)
Age, median (range), years	69 (45–78)
Male	41 (65.1)
Adenocarcinoma	61 (96.8)
ECOG PS 0 / 1	22 (34.9) / 40 (63.5)
Stage IVA / IVB / recurrence	20 / 28 / 15
EGFR mutation	25 (39.7)
Any driver alteration	33 (52.4)
PD-L1 TPS ≥50 / 1–49 / <1 / unknown	23 / 21 / 11 / 8
Ex- or current smoking	47 (74.6)
Brain / liver metastasis	19 (30.2) / 8 (12.7)
First-line / second-line or later	37 (58.7) / 26 (41.3)

Median follow-up: 42.3 months. Cohort includes 25 (39.7%) patients with sensitizing EGFR mutations.

DISCUSSION AND CONCLUSION

Actionable Take-Away Message

- First real-world evidence of 5- and 6-year outcomes with ABCP. PFS and OS plateaus formed simultaneously and only **in first-line patients (5-/6-year OS 22.4%, PFS 14.0%)**; no patient treated in the second line or later survived 5 years.
- The first-line 5-/6-year OS of 22.4% is consistent with the 5-year update of the pivotal trial, supporting external validity in an unselected cohort in which 39.7% had EGFR mutations.
- Univariate analysis identified **absence of an EGFR mutation (p=0.018) and significant smoking history (BI ≥600, p=0.048)** as factors associated with 3-year survival, providing practical selection criteria.
- The remarkably low interstitial lung disease incidence (4.8%; no grade 4/5 events)** supports a protective role of anti-VEGF-A signaling on drug-induced pulmonary injury, positioning ABCP as an option for patients with pre-existing pulmonary comorbidities
- Grade ≥2 peripheral neuropathy affected 39.7% at a median of 56 days and did not fully resolve in a substantial minority — **early paclitaxel dose modification** is warranted.
- Limitations: single center, N=63, few patients at risk in the tail of the curves, unconfirmed responses and heterogeneous treatment lines.*

Future Direction for Research

- Multicenter validation with larger cohorts and longer follow-up.
- Biomarkers of the cured fraction — tumor mutational burden, circulating tumor DNA clearance and immune microenvironment profiling.
- Mechanistic studies on VEGF-A-mediated inhibition against drug-induced pulmonary injury.
- Prospective evaluation of first-line ABCP in patients with liver metastases, brain metastases or malignant pleural effusion, and in those at elevated risk of immune-related pneumonitis.

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Artificial Intelligence (AI) Use Disclosure

A generative AI tool (Anthropic Claude) was used solely to assist with language refinement and layout of this poster. All study design, data collection, statistical analysis, figures and interpretation were performed and verified by the authors, who take full responsibility for the accuracy and integrity of the content presented.

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RESULTS

With a median follow-up of 42.3 months, median PFS was 7.0 months (95% CI 5.8–9.3) and median OS 18.5 months (95% CI 14.2–28.7). PFS and OS plateaus formed simultaneously and exclusively in first-line patients.

22.4%

5- and 6-year OS
first-line (n=37)

14.0%

5- and 6-year PFS
first-line (n=37)

75.7%

ORR first-line
(DCR 91.9%)

4.8%

Interstitial lung disease (irAE)
no grade 4/5

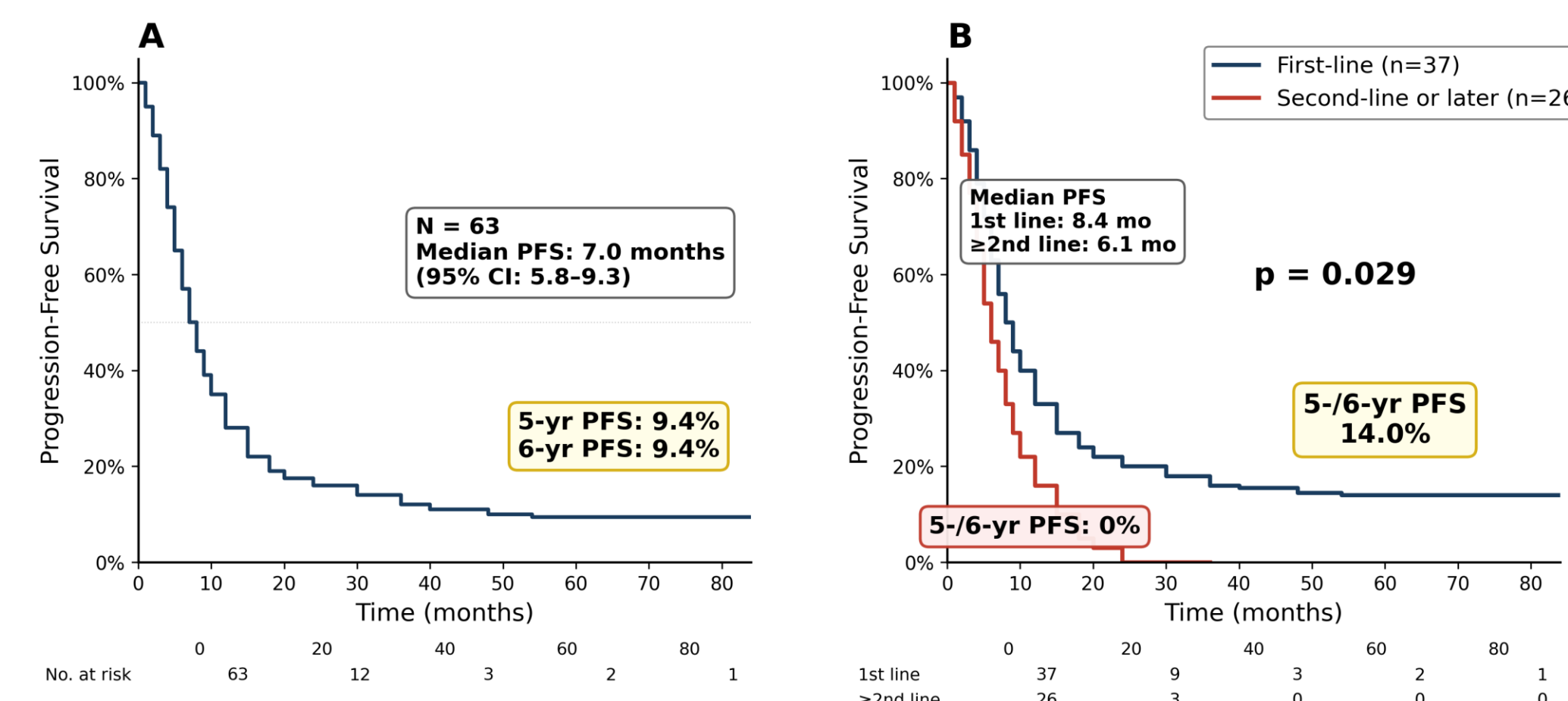


Figure 1. Progression-free survival (PFS).

(A) Overall population: median 7.0 months; 5-/6-year PFS both 9.4%. (B) By treatment line: 8.4 vs 6.1 months (p=0.029); 5-/6-year PFS 14.0% vs 0%.

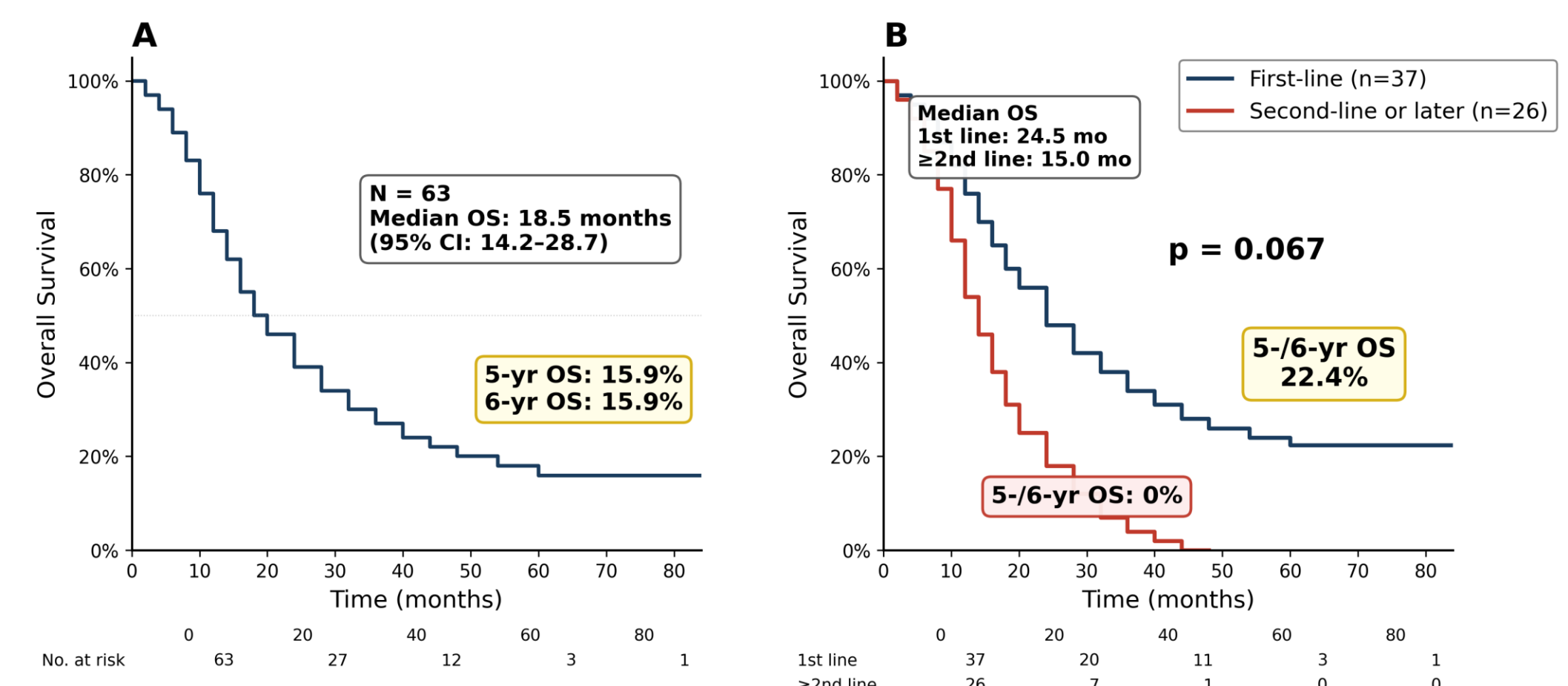


Figure 2. Overall survival (OS).

(A) Overall population: median 18.5 months; 5-/6-year OS both 15.9%. (B) By treatment line: 24.5 vs 15.0 months (p=0.067); 5-/6-year OS 22.4% vs 0%. All three patients alive beyond 6 years received first-line ABCP.

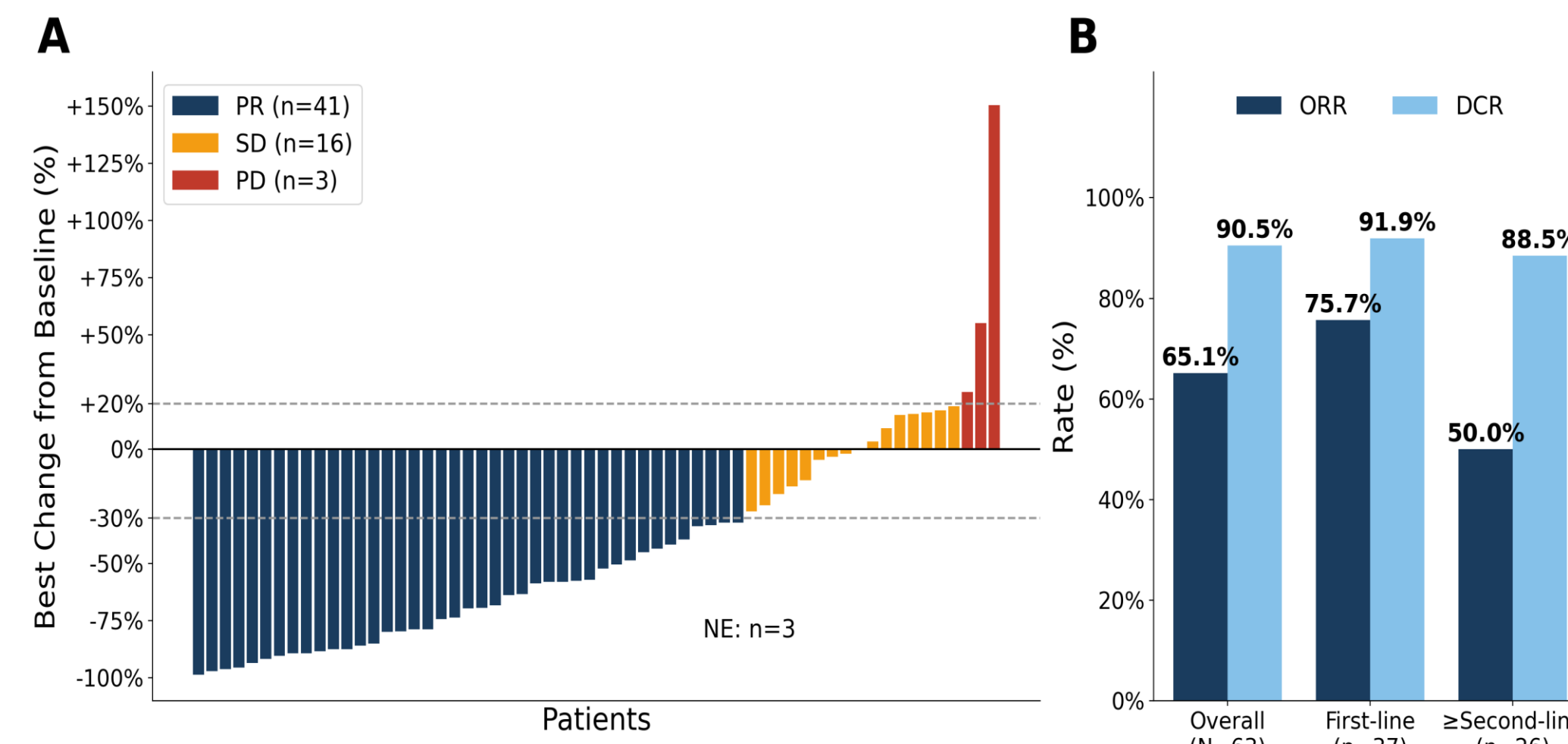


Figure 3. Tumor response (Waterfall plot and ORR).

(A) Waterfall plot of best change from baseline (n=60 evaluable). (B) ORR 65.1% and DCR 90.5% overall; 75.7% and 91.9% first-line, with no progressive disease as best response.

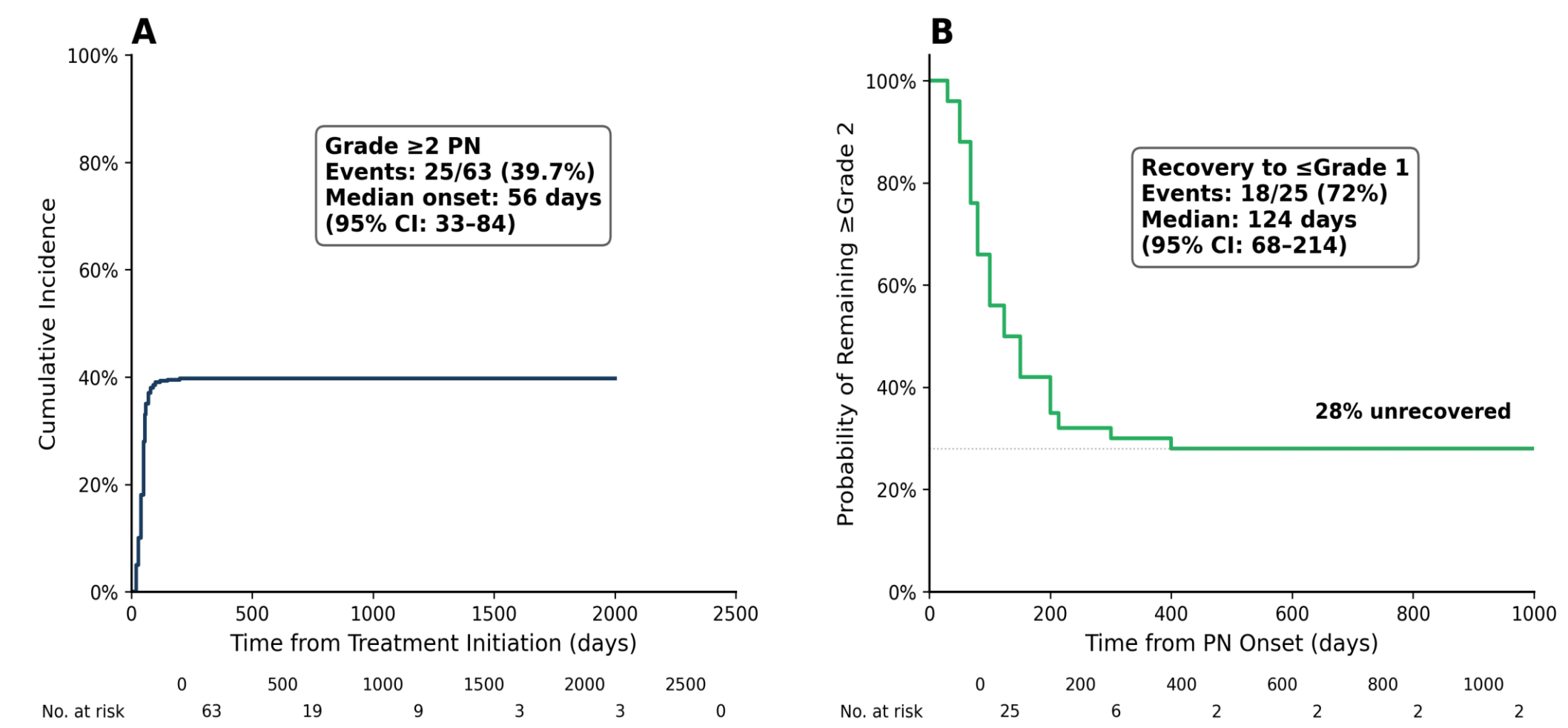


Figure 4. Peripheral neuropathy.

(A) Cumulative incidence of grade ≥2 events: 25/63 (39.7%), median onset 56 days. (B) Recovery to grade ≤1 in 18/25 (72%), median 124 days; the remainder had incomplete recovery.

Factors associated with 3-year survival (univariate, n=15 vs 48): absence of EGFR mutation (13% vs 48%, p=0.018) and smoking history with a Brinkman Index ≥600 (73% vs 44%, p=0.048). All three 5-year survivors were male, EGFR wild-type, ECOG PS 0, Brinkman Index ≥600 and free of liver metastasis.

Table 2. Selected treatment-emergent adverse events (N = 63)

Adverse event	All grades, n (%)	Grade ≥3, %
Neutrophil count decreased	57 (90.5)	76.2
White blood cell count decreased	58 (92.1)	61.9
Febrile neutropenia	28 (44.4)	44.4
Peripheral neuropathy	53 (84.1)	3.2
Proteinuria	31 (49.2)	1.6
Skin rash	31 (49.2)	6.3
Hypertension	17 (27.0)	0
Interstitial lung disease	3 (4.8)	1.6
Adrenal insufficiency	3 (4.8)	0
Hypothyroidism / colitis	2 (3.2) / 2 (3.2)	0 / 1.6
Cytokine release syndrome†	1 (1.6)	1.6 (grade 5)

† Considered treatment-related but not attributed to immune-mediated toxicity by the treating investigators.]