Comparison of Patient Characteristics and First-Line Treatment Patterns in Metastatic NSCLC: US and Finland Cohorts to Inform Overall Survival Transportability Analyses

SA30

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BOTTOM LINE

US and Finnish mNSCLC cohorts are similar enough for an adjusted OS transportability analysis, but not for a direct OS comparison — three gaps must be closed first:

1 Baseline imbalance
De novo metastatic: 85% vs 77%
ECOG PS missing: 43% vs 13%

2 Treatment era
Immune checkpoint inhibitor (ICI) uptake ≈2 years later in Finland
Plateau: ~41–44% vs ~61–63%

3 Follow-up
Censored: 19% vs 28%
Median time to censoring: 26.5 vs 19.2 mo

INTRODUCTION

- Real-world OS from other countries can inform HTA when local evidence is limited
- Transporting OS requires comparable populations, treatment practices and follow-up, or explicit adjustment for their differences (where feasible)

OBJECTIVE

Are US and Finnish mNSCLC cohorts sufficiently comparable to support a subsequent cross-country OS transportability analysis?

METHOD

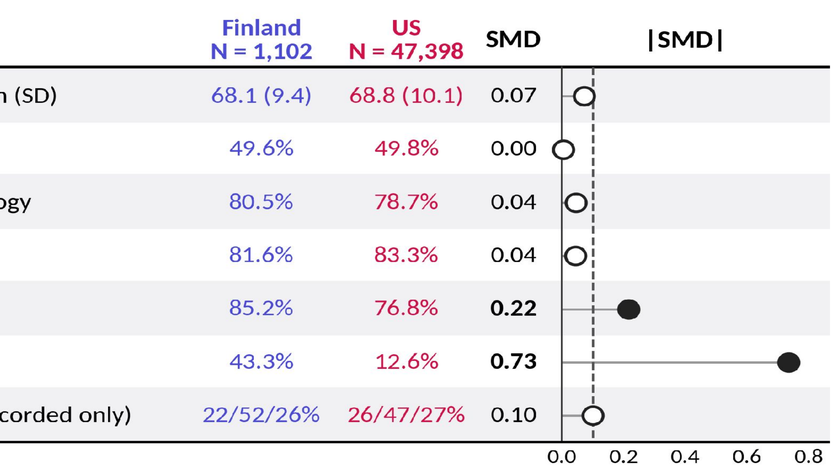
- **Design:** retrospective, descriptive cohort comparison; time zero = 1L initiation
- **Data:** US Flatiron Health Research Database[1] (US-based, electronic health record (EHR)-derived, deidentified; study sample) and Finnish HUS, Helsinki University Hospital datalake EHR data (target sample)
- **Patients:** adults diagnosed with mNSCLC 2015–2025 who started 1L systemic therapy outside a clinical trial
- **Analyses:** absolute SMDs for baseline characteristics (|SMD| > 0.10 = meaningful imbalance); 1L regimen by biomarker status and calendar period; cumulative hazard of censoring to compare follow-up

RESULTS

1 Are the populations comparable?

Figure 1. Most measured characteristics were balanced; imbalance was concentrated in ECOG PS missingness and de novo metastatic disease

Characteristic	Finland N = 1,102	US N = 47,398	SMD
Age at 1L, years, mean (SD)	68.1 (9.4)	68.8 (10.1)	0.07
Female	49.6%	49.8%	0.00
Non-squamous histology	80.5%	78.7%	0.04
History of smoking	81.6%	83.3%	0.04
De novo metastatic	85.2%	76.8%	**0.22**
ECOG PS unknown	43.3%	12.6%	**0.73**
ECOG PS 0 / 1 / 2+ (recorded only)	22/52/26%	26/47/27%	0.10



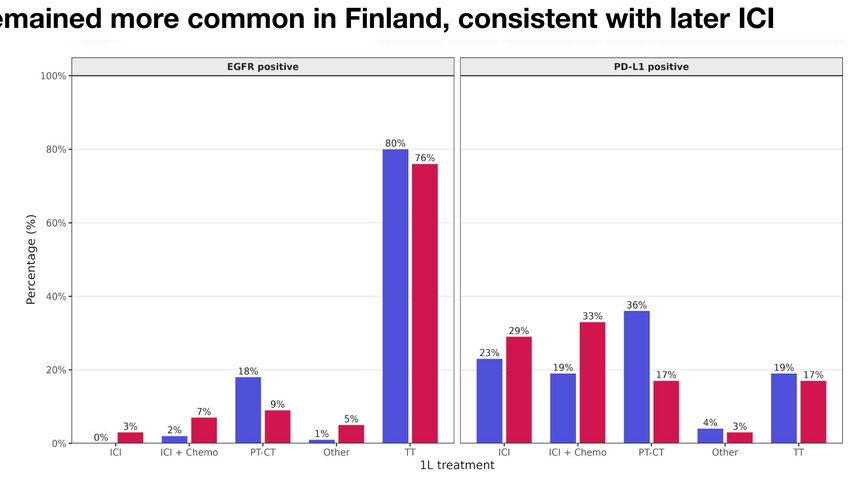
Filled points: |SMD| > 0.10 (dashed line). Recorded only: unknowns excluded, % re-normalized.

- Age, sex, histology and smoking history were balanced (|SMD| ≤ 0.07)
- De novo metastatic disease was more common in Finland (85% vs 77%)
- ECOG PS was missing in 43% vs 13%; **recorded values were similarly distributed** (SMD 0.10)

2 Are treatment practices aligned?

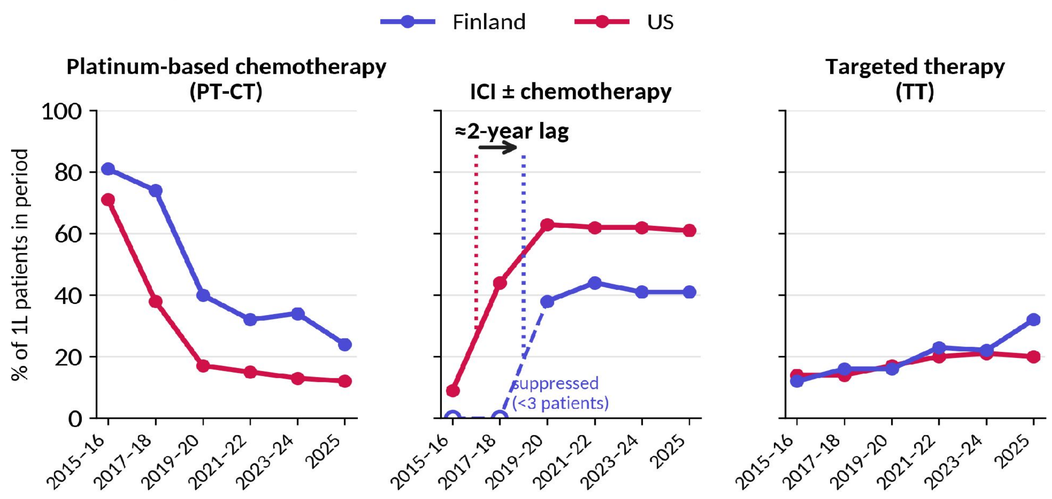
Figure 2. 1L treatment broadly followed biomarker status; among PD-L1-positive patients, PT-CT remained more common in Finland, consistent with later ICI adoption

% of patients by 1L regimen:
■ Finland
■ US



RESULTS (continued)

Figure 3. Treatment adoption differences: ICI adoption occurred ≈2 years later in Finland and plateaued lower

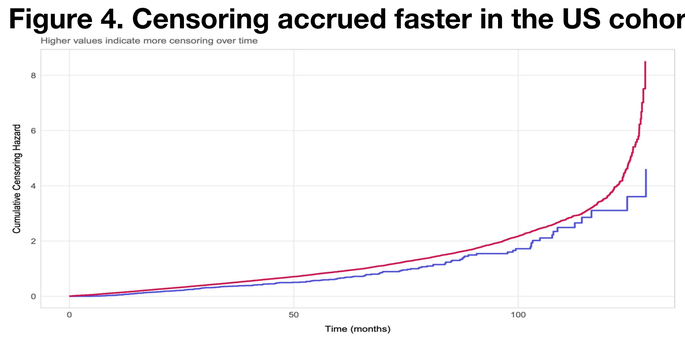


"Other" regimens (≤9% per period) not shown. Finnish ICI counts suppressed (<3 patients) in 2015–2018; lag resolved only to 2-year periods.

- PT-CT declined and ICI-based regimens rose in both countries
- Finland's steepest ICI uptake came **≈2 years later** and plateaued lower (~41–44% vs ~61–63%)
- Overall 1L regimen mix therefore differed (SMD 0.437)

3 Is follow-up comparable?

Figure 4. Censoring accrued faster in the US cohort



Cumulative censoring hazard after 1L: ■ Finland ■ US

Censoring rules differ by design

- **Finland:** near-complete vital status; survivors censored at data cut-off
- **US:** censored at last recorded EHR activity, which may be informative

	Censored, No. (%)	Median follow-up, mo (IQR)	Median time to censoring, mo (IQR)
Finland	214 (19.4)	11.2 (4.9–23.1)	26.5 (13.6–59.7)
US	13,016 (27.5)	10.3 (3.9–24.3)	19.2 (7.5–43.0)

CONCLUSIONS

The cohorts appear suitable for an adjusted cross-country OS transportability analysis, but baseline imbalance, calendar-time differences in treatment adoption and differential follow-up need to be addressed

- **Adjust, do not compare raw OS:** populations largely overlap; adjustment is needed to balance the joint distribution of measured prognostic factors for OS
- **Align treatment eras:** differences in treatment adoption over calendar time may confound cross-country OS comparisons and should be addressed through treatment-era alignment or adjustment
- **Harmonize follow-up:** apply common censoring rules before comparing OS, and adjust for censoring in sensitivity analyses to rule out differences in OS due to differential censoring

LIMITATIONS

- Only variables captured in both sources were compared; comorbidity, socioeconomic and biomarker status were not assessed for balance
- ECOG PS cannot be reliably used to compare the baseline frailties of the cohorts due to high-level of missingness. Multiple imputation under a MAR assumption could be explored, with sensitivity analyses for potential MNAR mechanisms
- The Finnish cohort is small and from a single hospital district

References: 1. Flatiron Health. Database Characterization Guide. Flatiron.com. Published March 18, 2025. Accessed October 6, 2026. https://flatiron.com/database-characterization

Abbreviations: 1L, first line; ECOG PS, Eastern Cooperative Oncology Group performance status; EGFR, epidermal growth factor receptor; EHR, electronic health record; HTA, health technology assessment; HUS, Helsinki University Hospital; ICI, immune checkpoint inhibitor; mNSCLC, metastatic non-small cell lung cancer; OS, overall survival; PD-L1, programmed death-ligand 1; PT-CT, platinum-based chemotherapy; SMD, standardized mean difference; TT, targeted therapy

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