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Real-World Treatment Patterns of Metastatic EGFR-Mutated Non-Small Cell Lung Cancer Patients from the Integra Connect Database

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Key Takeaways

Nearly 10% of patients with EGFR-mutated (Ex19del/L858R) mNSCLC received immunotherapy (either as monotherapy or in combination) as a 1L treatment, while nearly one-third (30%) of patients initiating 2L and one-fifth (19%) of those initiating 3L received immunotherapy treatment regimens, even though targeted therapy is recommended over immunotherapy in guidelines

Conclusions

Despite guidelines recommending targeted therapy over immunotherapy in patients with EGFR-mutated (Ex19del/L858R) mNSCLC, inappropriate immunotherapy use in 1L, 2L, and 3L continued to be frequently observed in the real-world, highlighting substantial unmet needs and the need for more effective targeted treatments for these patients

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Disclosures

TR, IL, CC, and SD are employees and stockholders of Johnson & Johnson.

Introduction

- Lung cancer is the leading cause of cancer-related deaths in the United States (US), with an estimated 226,650 new cases and 124,730 deaths in 2025[1]
- Non-small cell lung cancer (NSCLC) accounts for 80%–85% of all lung cancer cases, and 70% of newly diagnosed patients present with advanced or metastatic disease[2-4]
- Targeted therapies have transformed metastatic NSCLC (mNSCLC) treatment and are the preferred first-line (1L) option for patients with epidermal growth factor receptor (EGFR)-mutated (Exon 19 deletion [Ex19del] and Exon 21 L858R substitution [L858R]) mNSCLC[5]
- However, recent real-world data on treatment patterns and patient characteristics in EGFR-mutated NSCLC remain limited

Objective

- To describe patient characteristics and treatment patterns, including the use of immunotherapies, in patients with EGFR-mutated (Ex19del/L858R) mNSCLC

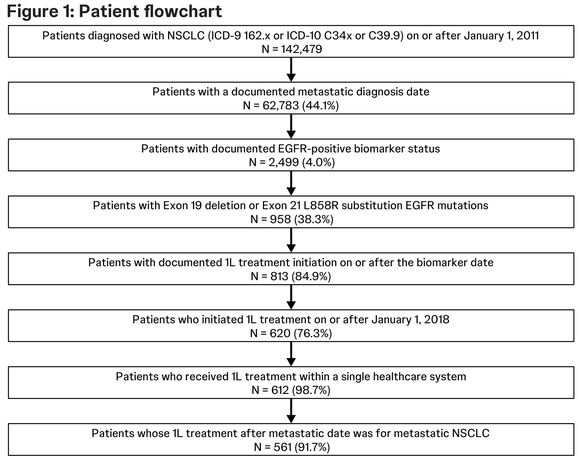
Methods

- This retrospective cohort study assessed the Integra Connect (IC) database, covering approximately 500 US care sites
- Eligible patients had documented EGFR-mutated (Ex19del/L858R) mNSCLC prior to initiating 1L treatment on or after January 1, 2018
- The 1L initiation date was defined as the index date
- All variables were descriptively summarized

Results

- A total of 561 patients met the study criteria (**Figure 1**). Patient demographic and clinical characteristics are shown in **Table 1**

Figure 1: Patient flowchart



Percentages were calculated using the sample size from the preceding step as the denominator.
1L, first-line; NSCLC, non-small cell lung cancer; EGFR, epidermal growth factor receptor; ICD, International Classification of Diseases.

Patient characteristics

- Ex19del was reported in 51.0% of patients, while L858R mutation was reported in 49.2% of patients. Next-generation sequencing (NGS) testing was documented in 72.7% of patients
- The mean (median) time from the first documented NSCLC metastasis date to 1L treatment initiation was 3.5 (1.1) months
- The mean (median) time from the first recorded EGFR-positive (Ex19del/L858R) test or test result date to 1L initiation was 2.7 (0.5) months

Table 1: Patient demographics and baseline clinical characteristics

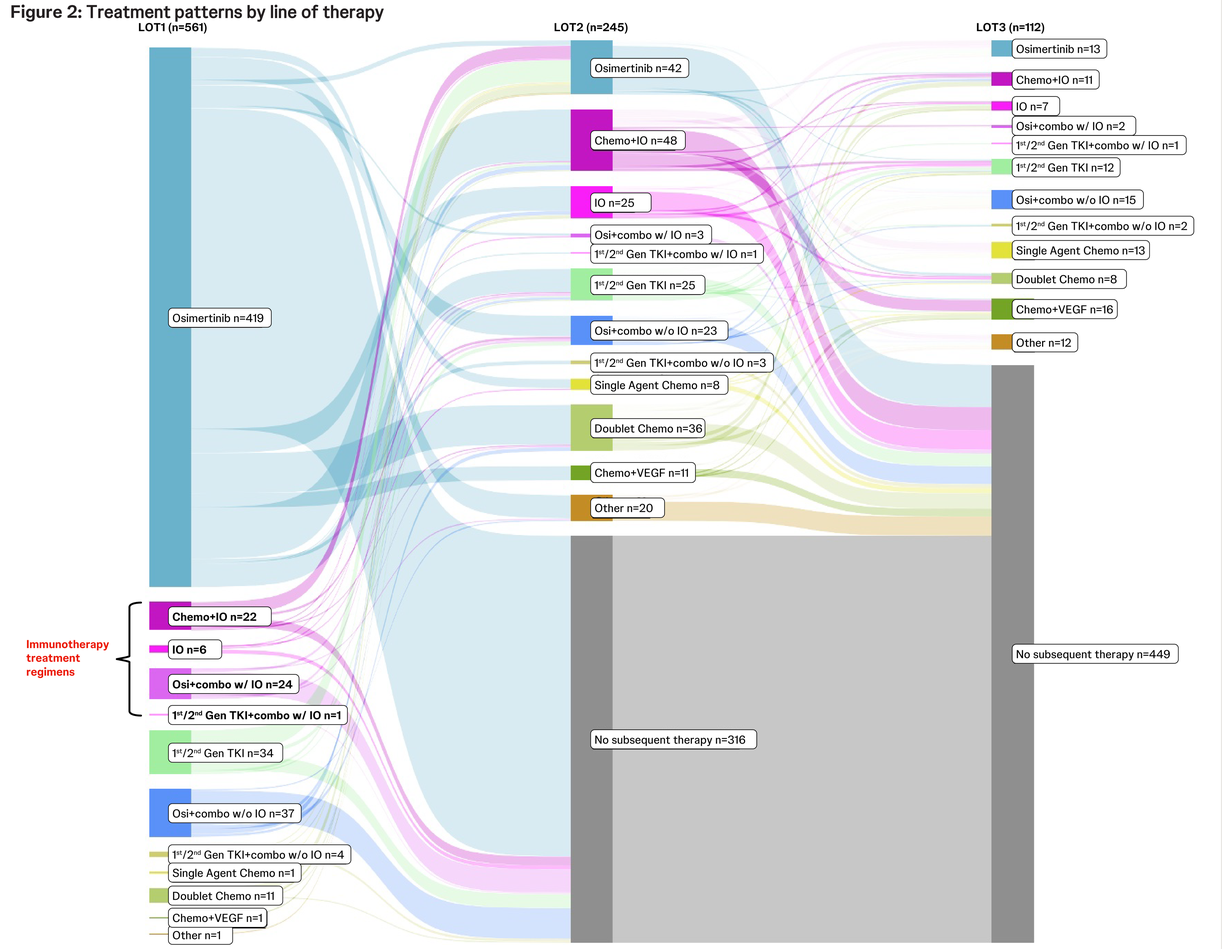
Demographics	
Age, years	
Mean (SD)	70 (10)
Median (IQR)	71 (64, 78)
Female, n (% of patients with information available)	369 (66.1)
Current or former smoker, n (% of patients with information available)	269 (48.1)
Race, n (%)	
White	375 (66.8)
Black	64 (11.4)
Asian	48 (8.6)
Other[a]	74 (13.2)
Ethnicity, n (%)	
Hispanic or Latino	19 (3.4)
Non-Hispanic and non-Latino	393 (70.0)
Other[a]	149 (26.6)
Payer type, n (% of patients with information available)	
Commercial	110 (19.9)
Medicare or Medicaid	235 (42.5)
Other	207 (37.4)
Clinical characteristics	
CCI, mean (SD)	3.8 (2.4)
Site of metastasis, n (%)	
CNS	134 (23.9)
Liver	70 (12.5)
Bone	241 (43.0)
Other	261 (46.5)
EGFR alteration, n (%)[b]	
Exon 19 deletion	286 (51.0)
L858R	276 (49.2)
NGS testing, n (%)	408 (72.7)
Time from the first documented metastasis date to the index date, months	
Mean (SD)	3.5 (20.5)
Median (IQR)	1.1 (0.7, 1.8)
Time from the first documented EGFR-positive (Ex19del/L858R) test or result date to the index date, months	
Mean (SD)	2.7 (11.6)
Median (IQR)	0.5 (0.3, 0.9)

[a]Includes patients of other known or unknown races or ethnicities, as well as those with missing information. [b]One patient had both Ex19del and L858R mutations.
CCI, Charlson Comorbidity Index; CNS, central nervous system; IQR, interquartile range; NGS, next-generation sequencing; mNSCLC, metastatic non-small cell lung cancer; SD, standard deviation.

Treatment patterns

- Treatment patterns and distribution of treatment regimens by lines of therapy (LOTs) are shown in **Figure 2** and **Table 2**
- The most common 1L treatments included osimertinib monotherapy (74.7%) and osimertinib-based combination therapies with or without immunotherapy (10.9%)
- By data cutoff (June 30, 2024), 245 patients (43.7%) had received a second-line therapy (2L). The most common 2L treatments included chemotherapy + immunotherapy combinations (19.6%), osimertinib monotherapy (17.1%), doublet chemotherapy (14.7%), and immunotherapy (10.2%)

Figure 2: Treatment patterns by line of therapy



Chemo, chemotherapy; IO, immunotherapy; LOT, line of therapy; TKI, tyrosine kinase inhibitor; VEGF, vascular endothelial growth factor.

Table 2: Most commonly used regimen types by line of therapy

Top 5 regimens	N (%)
1L	561
Osimertinib monotherapy	419 (74.7)
Osimertinib combination without immunotherapy	37 (6.6)
1st or 2nd generation TKI	34 (6.1)
Osimertinib combination with immunotherapy	24 (4.3)
Chemotherapy + immunotherapy	22 (3.9)
2L	245
Chemotherapy + immunotherapy	48 (19.6)
Osimertinib monotherapy	42 (17.1)
Doublet chemotherapy	36 (14.7)
Immunotherapy	25 (10.2)
1st or 2nd generation TKI	25 (10.2)
3L	111
Chemotherapy + VEGF	16 (14.4)
Osimertinib combination without immunotherapy	14 (12.6)
Single agent chemotherapy	14 (12.6)
Osimertinib monotherapy	13 (11.7)
1st or 2nd generation TKI	12 (10.8)

1L, first-line; 2L, second-line; 3L, third-line; TKI, tyrosine kinase inhibitor; VEGF, vascular endothelial growth factor.

Immunotherapy regimens

- 9.4% of patients received immunotherapy (as monotherapy or combination) as 1L treatment, while 31.4% of patients initiating 2L and 18.8% of those initiating 3L treatments received immunotherapy (**Figure 2**)
- The top immunotherapy regimens were pembrolizumab plus carboplatin and pemetrexed with osimertinib (3.6%) or without osimertinib (2.9%) in 1L (N = 561); pembrolizumab plus carboplatin and pemetrexed (13.1%), pembrolizumab (6.5%), and nivolumab (2.0%) among patients who initiated 2L treatment (N = 245); and pembrolizumab (4.5%), pembrolizumab plus carboplatin and pemetrexed (2.7%), and pembrolizumab plus pemetrexed (1.8%) among those who received 3L treatment (N = 111)

Limitations

- The data from the US Integra Connect database may not be generalizable to other patient populations

References

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