Miami Cancer Institute
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Real-world survival outcomes of afatinib versus osimertinib in EGFR mutation-positive non-small cell lung cancer in the first line setting

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BACKGROUND

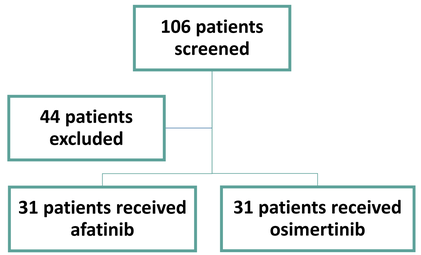
- 5-year relative survival for lung cancer patients with distant disease is 5.8%[1]
- Targeted therapies are the standard-of-care for patients with metastatic non-small cell lung cancer (NSCLC) with oncogenic drivers such as EGFR, ALK, and ROS1[2]
- Patients with advanced NSCLC and mutations in the epidermal growth factor receptor gene (EGFR) treated with EGFR tyrosine kinase inhibitors (TKIs) have been shown to have to a 5-year survival of 14.6% and prolonged progression-free survival[2]
- National Comprehensive Cancer Network (NCCN) guidelines for NSCLC recommend 3rd generation EGFR TKI osimertinib as preferred first-line therapy in advanced or metastatic EGFR mutant-positive NSCLC[3]
- 1st generation EGFR TKIs erlotinib and gefitinib and 2nd generation afatinib and dacomitinib are additional NCCN recommended options for first-line therapy [3]

OBJECTIVES

- Assess survival outcomes in patients with EGFR mutation-positive, advanced or metastatic NSCLC treated with first-line afatinib or osimertinib in a real-world setting
- Characterize demographic data of patients with EGFR mutation-positive, advanced or metastatic NSCLC
- Evaluate the safety profile of afatinib and osimertinib in a head-to-head comparison

METHODS

- Single-center retrospective chart review from August 1st, 2017 – August 1st, 2020
- Eligible patients had received afatinib or osimertinib as first-line therapy for advanced or metastatic EGFR mutation-positive NSCLC
- Electronic health records were assessed for baseline demographics, disease characteristics, duration of treatment, disease progression and/or death



RESULTS

Patient Demographics	Osimertinib n=31	(%)	Afatinib n=31	(%)
Median age (years)	70.5		71	
Gender				
Female	21	68%	26	84%
Male	10	32%	5	16%
Ethnicity				
Hispanic	17	55%	21	68%
White	7	23%	8	26%
Black	3	10%	1	3%
Asian	3	10%	1	3%
Other	1	3%	0	0%
Smoking status				
Never	17	55%	22	71%
Former	14	45%	9	29%
ECOG performance status				
0	8	26%	10	32%
1	7	23%	5	16%
2	2	6%	2	6%
Not documented	14	45%	14	45%

Disease Characteristics	Osimertinib n=31	(%)	Afatinib n=31	(%)
Site of metastases				
Local	11	35%	13	42%
Multiple	6	19%	8	26%
CNS	6	19%	5	16%
Bone	3	10%	3	10%
Visceral	4	13%	2	6%
Other	1	3%	0	0%
Histology subtype				
Adenocarcinoma	30	97%	30	97%
Mixed	1	3%	1	3%
EGFR mutation				
Exon 19 deletion	14	45%	18	58%
Leu858Arg	14	45%	7	23%
Exon 20 insertion	1	3%	0	0%
Other	2	6%	6	19%

Figure 1. Kaplan Meier Curve for PFS

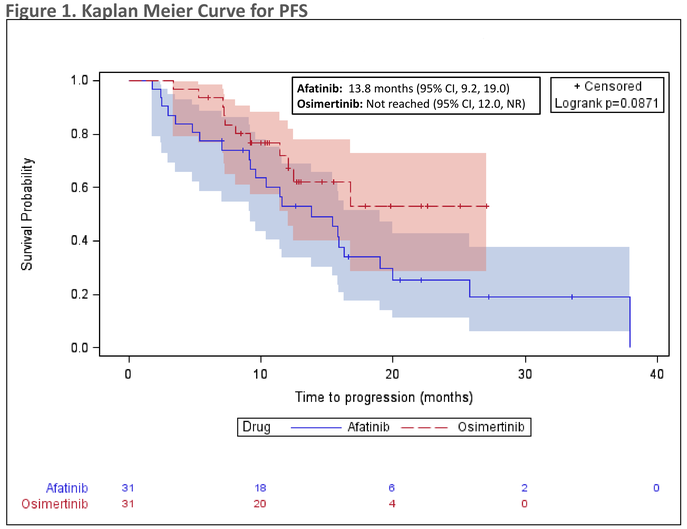


Figure 2. Dose Reductions due to Adverse Events

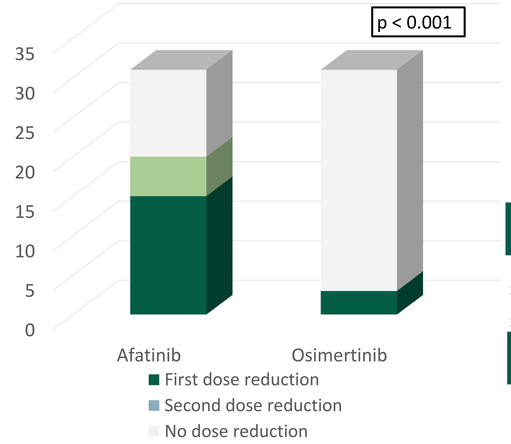


Table 3. Treatment status at end of study period	Osimertinib	Afatinib
Treatment duration (mo.)	12.4	12.6
Disease progression (%)	36	71
Death (%)	16	36
Stable disease (%)	58	26

LIMITATIONS

- Limited sample size at a single institution
- Retrospective study design
- Guidelines and standard-of-care updated during the course of the study period

DISCUSSION & CONCLUSION

- Knowledge of survival and safety outcomes in the comparison of afatinib to osimertinib as first-line treatment of EGFR mutant-positive NSCLC will help identify patient characteristics associated with favorable outcomes and guide treatment decisions in an admixed patient population.
- The median time to disease progression in the osimertinib arm was not reached and the median time to disease progression in the afatinib arm was 13.8 months
- In patients treated with osimertinib, 36% experienced disease progression and 16% died. By comparison in the afatinib arm, 71% of patients experienced disease progression and 36% died.
- Patients in the osimertinib arm showed substantially improved tolerability and subsequently required fewer dose modifications or interruptions.
- The study was able to demonstrate benefit in progression-free survival and improved tolerability and supports current NCCN recommendations indicating osimertinib as the preferred EGFR TKI to use in first-line treatment of EGFR mutation-positive NSCLC.

REFERENCES

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3. National Comprehensive Cancer Network. Non-small cell lung cancer (Version 4.2021).

DISCLOSURE

- All authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of this presentation

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