Central Nervous System (CNS) Progression on CNS Penetrable *ALK* TKI: Real-World Practice Patterns and Patient Outcomes

Poster Identification: P1.12B.04.

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INTRODUCTION

- **CNS metastases** are common in *ALK* rearranged NSCLC
- Optimal treatment strategy for **patients who develop CNS progression** on CNS penetrable *ALK* TKI is not known

METHODS

- **Study Design**: Retrospective
- **Participants:** Patients with *ALK* rearranged NSCLC who developed CNS progression on CNS penetrable TKI
- **Setting**: Academic cancer center
- **Independent Variable:** TKI management in response to CNS progression on CNS penetrable TKI, categorized into 3 groups:
  - TKI altered: switch to different TKI or increase dose
  - TKI unaltered: continue TKI at same or lower dose
  - TKI discontinued: stop TKI completely
- **Outcome**: CNS progression free survival
- **Analysis**:
  - Fisher's exact tests to compare groups
  - Kaplan-Meier survival curves, compared by log-rank

2024 World Conference on Lung Cancer
SEPTEMBER 7-10, 2024
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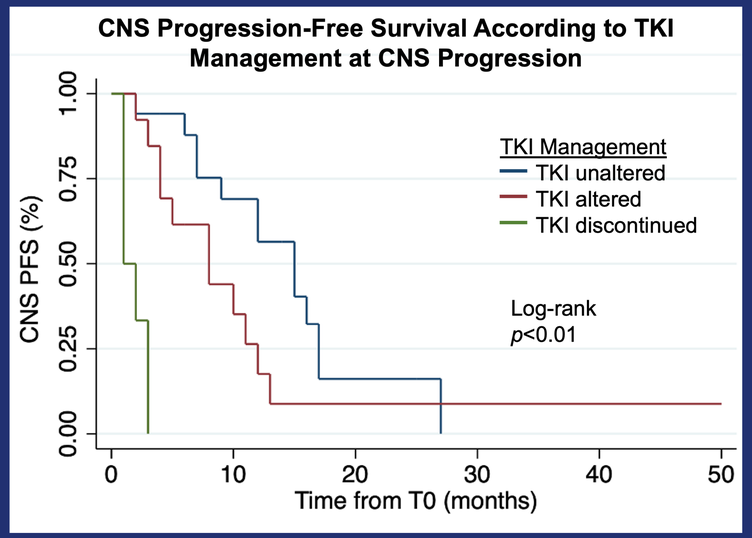
For those patients who are candidates for continued TKI therapy, ***ALK* TKI change or dose increase** was a feasible salvage strategy for patients who developed **leptomeningeal progression** and/or concurrent **systemic progression** on a CNS penetrable TKI.



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Baseline Characteristics and Disease Progression Patterns

Baseline Characteristic	TKI Altered %	TKI Unaltered %	TKI Discontinued %
N (%)	13 (36%)	17 (47%)	6 (17%)
Age, mean (SD)	56 (10)	59 (8.9)	65 (14)
Median # prior systemic treatment*	2.1	1.6	2.7
Baseline leptomeningeal disease	15%	0%	0%
Baseline CNS parenchymal disease	85%	94%	67%
Prior whole brain radiation therapy*	38%	5.9%	0%
Alectinib at time of CNS progression*	85%	59%	33%
Disease Progression Patterns			
Parenchymal progression	77%	100%	100%
Leptomeningeal progression*	46%	0%	17%
Concurrent systemic progression*	62%	24%	100%

*Denotes significant p-value, <0.05

Figure 1: Concurrent Practice Patterns at CNS Progression

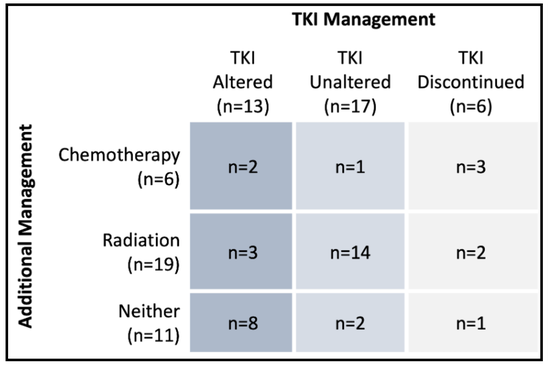
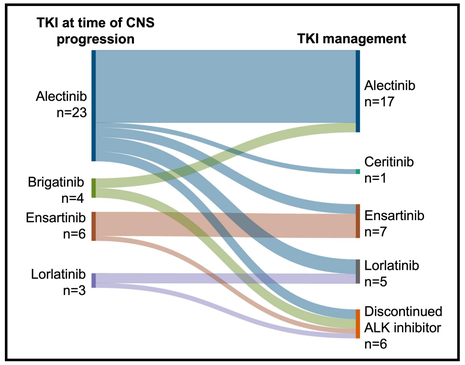


Figure 2: TKI Change at CNS Progression



DISCUSSION

- This is the **first study** to characterize real-world practice patterns and outcomes for patients with *ALK* rearranged NSCLC who develop CNS progression during treatment with a CNS penetrable TKI.
- These findings support **continuing some form of TKI therapy** among select patients with *ALK* rearranged NSCLC who develop CNS progression on a CNS penetrable TKI.