Real-world evaluation of racial and socioeconomic disparities in patients with NSCLC treated with immunotherapy

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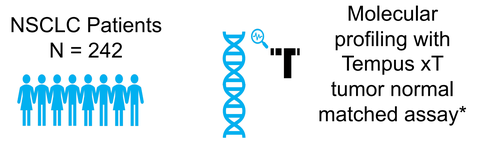
INTRODUCTION

- Black and/or socioeconomically disadvantaged patients with advanced Non-Small Cell Lung Cancer (NSCLC) have higher mortality rates than non-Black and/or socioeconomically advantaged patients.
- Several studies have demonstrated that social and structural determinants of health, such as racism and access to healthcare contribute to racial health disparities.
- This study is the first to evaluate all-cause mortality by race and area deprivation index (ADI), a measurement of socioeconomic advantage, in a real-world NSCLC cohort treated with FDA-approved immunotherapy in the first-line setting.

METHODS



Study Criteria:
- Sequencing prior to treatment
- Treatment with FDA approved immunotherapy
- PD-L1 tumor proportion score ≥ 1% and/or tumor mutational burden result ≥ 10
- Provided race information

Two predictor variables were analyzed:
- Race (Black vs. Non-Black)
- Area deprivation index (ADI)
  - ADI-L: ADI < 57 (the median in our dataset; higher socioeconomic advantage)
  - ADI-H (ADI ≥ 57
- Cox proportional hazards models were fit evaluating the relationship between race, ADI and real-world overall survival (rwOS).

*Tempus xT assay - a targeted panel that detects single nucleotide variants, insertions and/or deletions, and copy number variants in 598-648 genes, as well as chromosomal rearrangements in 22 genes with high sensitivity and specificity.

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SIGNIFICANCE

- This study is the first real-world cohort analysis demonstrating that in patients with NSCLC who underwent broad molecular testing and then were treated with first-line immunotherapy.
- There were no significant differences in rwOS by race or area deprivation.
- Future work should examine improved access to biomarker testing and guideline-concordant therapy on mitigating racial and socioeconomic health disparities.

RESULTS

Table 1: Cohort Characteristics

Characteristic	N = 189[1]
Race	
Black	22 (12%)
Non-Black	167 (88%)
TMB-High	79 (42%)
Age	
<50	2 (1.1%)
>80	36 (19%)
50~59	18 (9.5%)
60~69	60 (32%)
70~79	73 (39%)
Female Sex	98 (52%)
Current or Former Smoker	175 (97%)
Unknown	8
ADI National Rank	56 (37, 74)
Unknown	66

[1]n (%); Median (IQR)

Demographic and clinical characteristics patients were well-balanced, with the exception of ADI, with Black patients having a higher median ADI than non-Black patients (ADI = 73 vs 51, p = 0.002).

Table 2: Cox Model fits

Model Term	N	Estimate	95% CI Low	95% CI High	P-value
Black	22	-	-	-	-
non-Black	167	0.51	-0.33	1.35	0.23
ADI-L	62	-	-	-	-
ADI-H	61	-0.09	-0.63	0.46	0.75

The univariate analyses showed no statistically significant differences in rwOS by self-reported race or ADI.

Figure 1: Overall Survival Comparisons