Hispanics/Latinos in the Bronx Have Improved Survival in Non-Small Cell Lung Cancer Compared with Non-Hispanic Whites

Madelyn Klugman[1], Xiaonan Xue[1], Mindy Ginsberg[1], Haiying Cheng[2], Thomas Rohan[1], H. Dean Hosgood, III[1]

[1]Albert Einstein College of Medicine, Bronx, NY; [2]Montefiore Medical Center, Bronx, NY

Introduction

- Hispanics are the fastest growing population in the US, and they paradoxically experience similar or better health outcomes compared to Non-Hispanic Whites (NHWs) despite lower socioeconomic status (SES)

- There is a critical need to further understand survival in Hispanics/Latinos with NSCLC after adjustment for important clinical and demographic variables such as smoking.
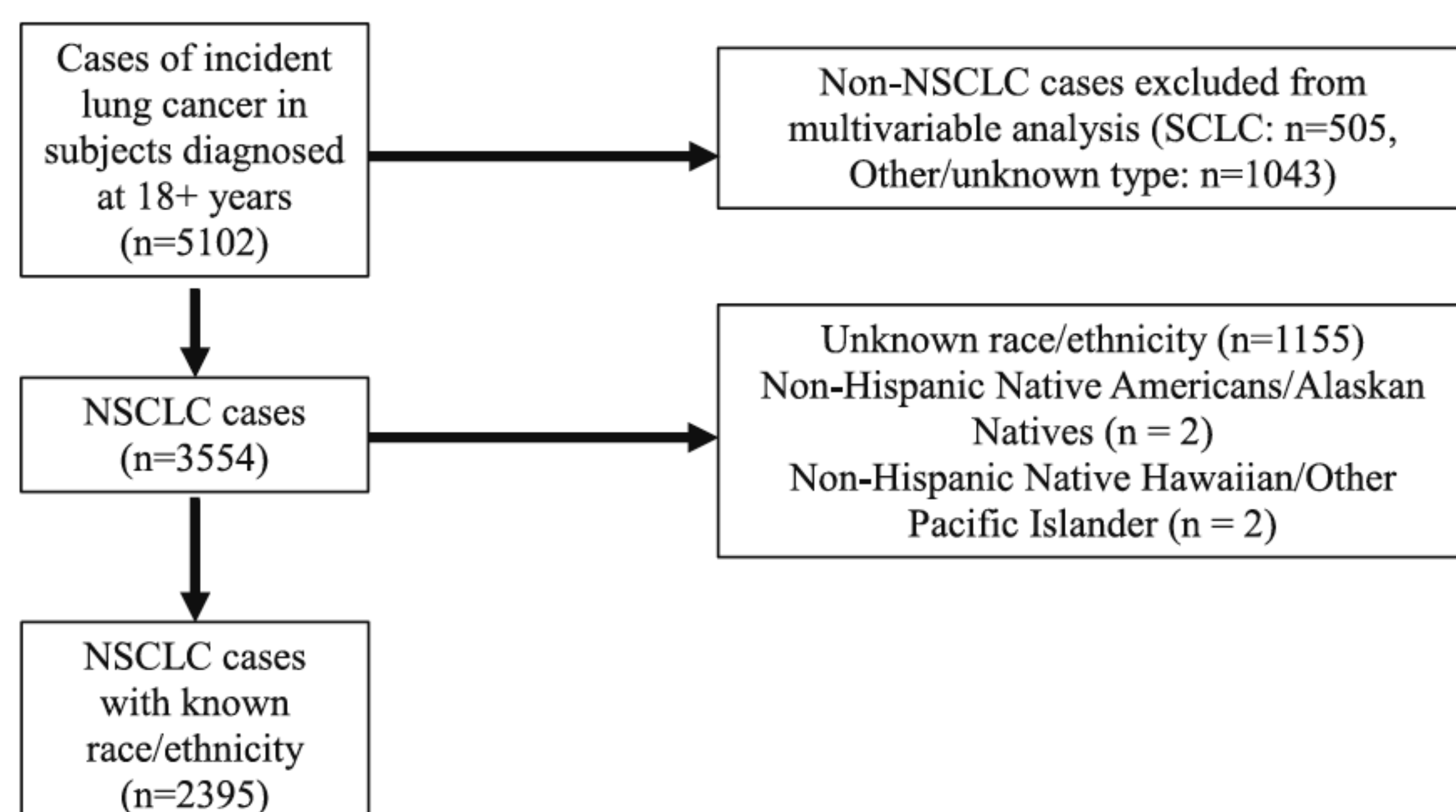
Aims

- Assess the roles of race and ethnicity in NSCLC survival and factors related to NSCLC survival, using a cohort of patients at Montefiore Medical Center

Methods

- Lung Cancer Clinical Cohort at Montefiore Medical Center (LC3MMC):

  - Subjects ≥ 18 years
  - No prior cancer history
  - Incident primary lung cancer
  - Any histology
  - Stage 1-4
  - Diagnosed 2004-2017 in the Bronx, NY
  - Demographic data from MMC's clinical systems
  - Tumor-related data from MMC/Einstein's Cancer Registry

- Inclusion criteria

- Outcome: all-cause mortality

Results

- In subgroup analyses, the association of Hispanic ethnicity with survival was was evident in never-smokers, ever-smokers, females, males, younger, and older patients
- Survival benefit not seen in Hispanics with adenocarcinoma

Risk of death in subjects with NSCLC in LC3MMC*

Variable	N	HR	95% CI	p value
Race and ethnicity				
Non-Hispanic White	634	1.00	Ref	
Hispanic/Latino	452	0.70	0.57–0.86	0.001
Non-Hispanic Black	752	1.00	0.86–1.16	0.95
Non-Hispanic Asian	38	0.58	0.36–0.95	0.03
Sex				
Males	956	1.00	Ref	
Females	920	0.89	0.78–1.01	0.07
Adenocarcinoma				
No	833	1.00	Ref	
Yes	1043	0.86	0.76–0.97	0.02
Surgery				
No	1177	1.00	Ref	
Yes	699	0.55	0.47–0.65	< 0.001
Palliative care				
No	1534	1.00	Ref	
Yes	342	1.19	1.02–1.39	0.03
Smoking status				
Never-smoker	295	1.00	Ref	
Ever-smoker	1581	1.16	0.97–1.38	0.10
Language preference				
English	1641	1.00	Ref	
Not English	235	1.17	0.93–1.48	0.18
Marital status[b]				
Not married	1107	1.00	Ref	
Married	769	0.90	0.79–1.03	0.13
Socioeconomic status[c]	1876	1.00	0.97–1.02	0.72

Risk of death in subjects with NSCLC in LC3MMC, stratified by racial/ethnic group*

Variable	Hispanic/Latino (n = 452) HR	95% CI	Non-Hispanic White (n = 634) HR	95% CI	Non-Hispanic Black (n = 752) HR	95% CI
Sex						
Males	1.00	Ref	1.00	Ref	1.00	Ref
Females	0.83	0.61–1.12	0.90	0.72–1.12	0.88	0.72–1.07
Adenocarcinoma						
No	1.00	Ref	1.00	Ref	1.00	Ref
Yes	0.93	0.69–1.25	0.70	0.57–0.87	0.93	0.77–1.14
Surgery						
No	1.00	Ref	1.00	Ref	1.00	Ref
Yes	0.60	0.43–0.85	0.55	0.42–0.73	0.51	0.40–0.65
Palliative care						
No	1.00	Ref	1.00	Ref	1.00	Ref
Yes	1.06	0.75–1.51	1.48	1.11–1.97	1.06	0.84–1.34
Smoking						
Never-smoker	1.00	Ref	1.00	Ref	1.00	Ref
Ever-smoker	1.56	1.02–2.39	1.04	0.76–1.42	1.19	0.89–1.58
Language preference						
English	1.00	Ref	1.00	Ref	1.00	Ref
Not English	1.31	0.97–1.76	0.76	0.42–1.36	1.80	0.43–7.48
Marital status[c]						
Not married	1.00	Ref	1.00	Ref	1.00	Ref
Married	0.79	0.57–1.09	0.98	0.78–1.22	0.86	0.70–1.06
Socioeconomic status[d]	1.00	0.95–1.05	1.01	0.97–1.06	0.99	0.96–1.03

*Models adjusted for age and the variables in the table and stratified by stage, chemotherapy, and radiation. Non Hispanic Asians not included in multivariable analysis due to limited sample size
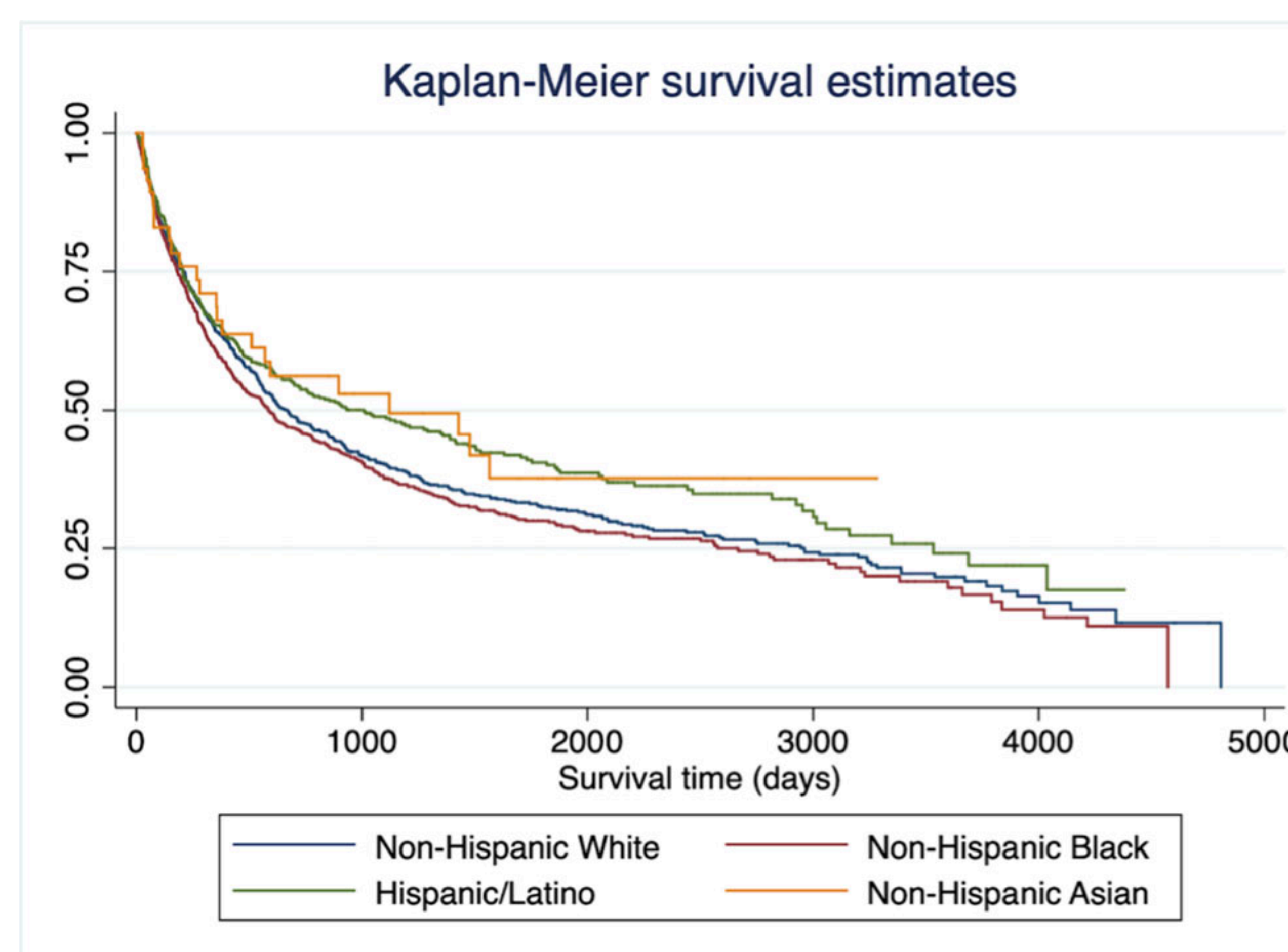
Conclusions

- After adjustment for clinical and social factors such as smoking, Hispanics have improved survival compared to NHWs

- Smoking and Spanish language preference are possible risk factors for death in Hispanics

- Future research should explore the role of genetics, environmental exposures, screening with low-dose CT, and targeted therapy receipt on survival