Background:
• Median overall survival (OS) in landmark trials evaluating immunotherapy (IO) as compared to chemotherapy (chemo) in patients with metastatic non-small cell lung cancer (mNSCLC) ranged from 17-26 months\(^1\)
• Observed median OS in “real-world” studies ranges from 8-12 months\(^4,5\)
• We sought to define median OS of patients with mNSCLC who received IO as monotherapy or in combination with chemo as first-line therapy at Levine Cancer Institute (LCI).

Methods:
• We retrospectively reviewed 315 adult patients with mNSCLC without driver mutations (EGFR, ALK, ROS1) who were diagnosed between 2016-2019
• The Kaplan-Meier method was used to estimate and compare OS between IO alone and IO + chemotherapy
• Univariate and multivariate Cox models were used to evaluate risk factors for OS
• Risk factors considered included age, sex, race, smoking status, histology, first-line treatment type, and metastatic sites

Results:
• Population characteristics:
  • 40% female, 77% white, 20% Black, 34% current smokers and 60% former smokers
  • Median age: 69 years (45-88) in patients receiving IO alone and 63 years (28-84) in those receiving IO + chemo
  • Tumor types: 76% adenocarcinoma and 17% squamous cell carcinoma
  • PD-L1 TPS: 39% were 0%, 22% were 1-49%, and 39% were ≥50%
• Distribution of metastases: 10% adrenal, 40% bone, 30% brain, 14% liver, 31% lung

Results (cont):
• Median OS as stratified by PD-L1 TPS:
  • PD-L1 0%: 14.5 months
  • PD-L1 1-49%: 13.3 months
  • PD-L1 ≥50%: 19.5 months
• Median OS for patients receiving IO and IO + chemo as first-line therapy was 17 and 14.8 months, respectively (P=.209)
• OS was significantly different between IO and IO + chemo after adjusting for age
• No OS differences were seen between white and Black patients
• No OS differences were seen between all patients versus those with brain metastases (brain-specific interventions not reviewed)

Conclusions:
• Patients with mNSCLC treated first-line with IO either alone or in combination with chemo at LCI lived longer than those in similar “real-world” cohorts
• Median OS was highest in patients with PD-L1 TPS ≥50%, although not statistically significant
• While not unusual to identify worse outcomes in those with bone and liver metastases, interestingly brain metastasis was not associated with worse survival.
• In this cohort, when adjusted for age, IO alone trends toward improved survival.
• Although there was no OS difference based on race, further investigation will seek to uncover any other disparities contributing to outcomes, such as insurance status and zip code mapping.
• To our knowledge, this provides the largest analysis of this patient population outside of a clinical trial.