Figure S1 SEER-Medicare cohort selection. SEER, Surveillance, Epidemiology, and End Results; DoB, date of birth; DoD, date of death; NSCLC, non-small cell lung cancer.
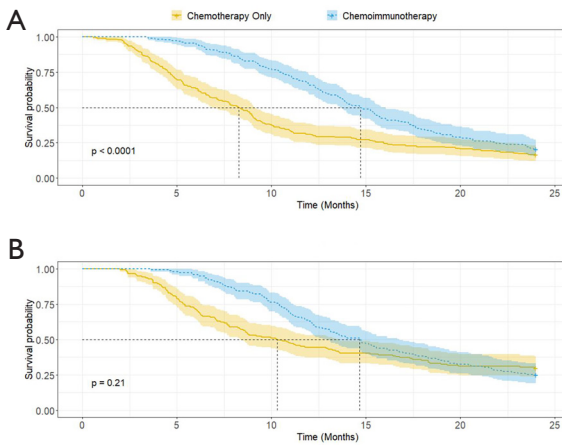

Figure S2 Overall survival according to treatment in the stratified propensity matched cohort for (A) males (n=360) and (B) females (n=302).

Table S1 HCPCS codes used to identify chemotherapy and immunotherapy in Medicare claims (41)

Agent	HCPCS
Immunotherapy	
Pembrolizumab	C9027; J9271
Nivolumab	C9453; J9299
Atezolizumab	C9483
Chemotherapy	
Cisplatin	C9418; J9060; J9062; J9045
Carboplatin	J9045
Paclitaxel (Taxol); albumin-bound paclitaxel (nab-paclitaxel, abraxane)	C9127; C9431; J9264; J9265; J9267
Docetaxel (Taxotere)	J9170; J9171
Gemcitabine (Gemzar)	J9201
Vinorelbine (Navelbine)	C9440; J9390
Etoposide (VP-16)	C9414; C9425; J8560; J9181; J9182
Pemetrexed (Alimta)	C9213; J9305

HCPCS, Healthcare Procedural Coding System.

Table S2 Propensity matched analysis of the association of chemoimmunotherapy with survival according to sex and histology

Propensity-matched strata (n=662)	HR_{adj} (95% CI), chemoimmunotherapy vs. chemotherapy alone	P value (strata*receipt of chemoimmunotherapy interaction)
Sex		0.0414
Male (n=360, 180 matched pairs)	0.59 (0.47–0.74)	
Female (n=302, 151 matched pairs)	0.85 (0.65–1.12)	
Histology		0.1655
Squamous (n=188, 4 matched pairs)	0.71 (0.54–0.95)	
Adenocarcinoma (n=394, 197 matched pairs)	0.91 (0.73–1.15)	
Other (n=80, 40 matched pairs)	0.52 (0.31–0.88)	

Propensity matched (per procedures described under methods) and adjusted for age, sex, race, marital status, CCI, and histology. Sex and histology specifically selected given presence of statistically significant findings within non-propensity matched patient subsets. CCI, Charlson Comorbidity Index.

Table S3 Sensitivity analysis of factors independently associated with mortality, adjusting for presence of metastasis to brain at diagnosis

Variables	HR$_{adj}$ (95% CI), n=1,402[†]
Chemoimmunotherapy *vs.* chemotherapy alone	0.72 (0.63–0.83)
Age at diagnosis, years	
66–69	1.0 (ref)
70–74	1.03 (0.88–1.21)
75–79	1.08 (0.91–1.27)
≥80	1.28 (1.07–1.54)
Sex (female *vs.* male)	0.73 (0.64–0.83)
Race	
White	1.0 (ref)
Black	0.80 (0.63–1.00)
Other	0.81 (0.60–1.09)
Marital status (married *vs.* unmarried)	0.91 (0.79–1.03)
Charlson Comorbidity Index	
0	1.0 (ref)
1	1.02 (0.88–1.18)
2	1.00 (0.84–1.20)
≥3	1.21 (1.01–1.46)
Histology	
Squamous	1.0 (ref)
Adenocarcinoma	0.89 (0.77–1.02)
Other	1.34 (1.10–1.63)
Metastasis to brain at diagnosis (yes *vs.* no)	1.41 (1.22–1.63)

[†], adjusted for age, sex, race, marital status, Charlson Comorbidity status, histology (all of the above variables), 49 patients excluded because marital status missing/unknown, 20 patients excluded because brain metastasis status unknown. Bolded results indicated statistical significance.

References

41. American Cancer Society. Chemotherapy for Non-Small Cell Lung Cancer. Available online: https://www.cancer.org/cancer/lung-cancer/treating-non-small-cell/chemotherapy.html. Published 2021.