Supplemental Fig. 1. Kaplan–Meier survival curve of progression-free survival for patients with atezolizumab as 2L+ atezolizumab-containing treatment. There were no significant difference in PFS between patients with different (A) PD-L1 TPS (<50% *versus* ≥50% *versus* No data)(*p* = 0.724), or (B) *EGFR* mutation status (mutation *versus* wild type *versus* No data)(*p* = 0.344).

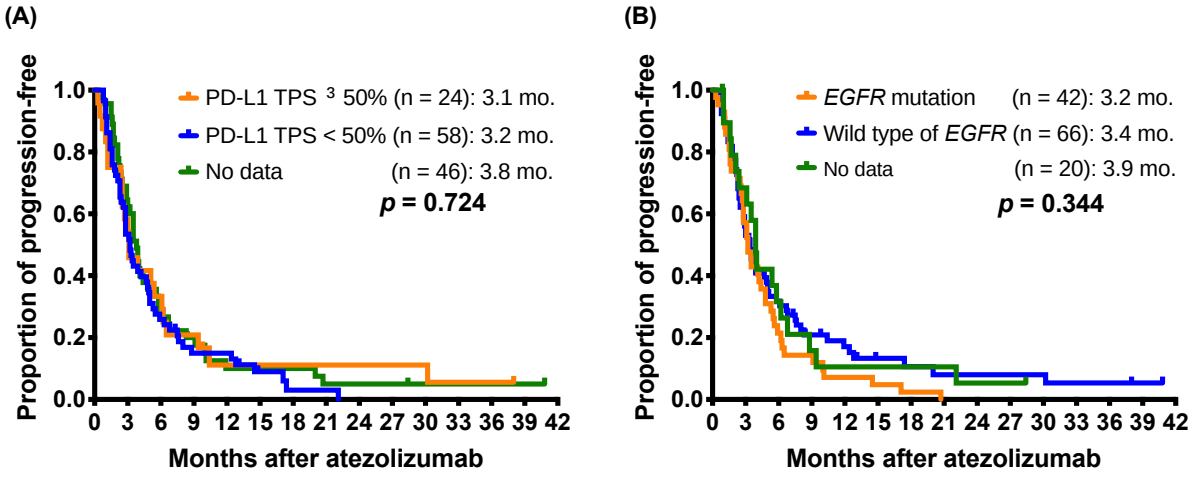
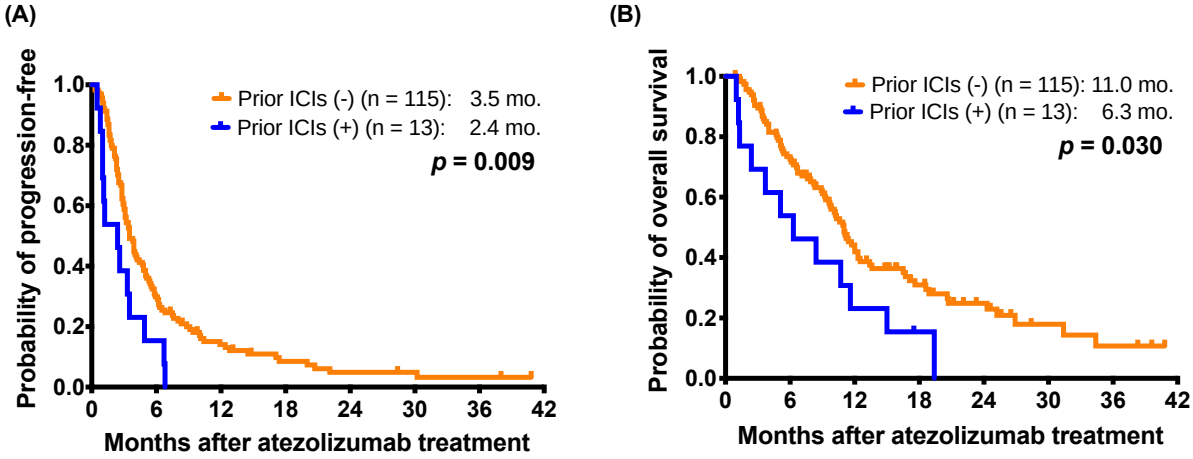


Figure 2. Kaplan–Meier estimates of (A) progression-free survival and (B) overall survival of patients with and without immunotherapy before atezolizumab treatment (log-rank test).



Supplemental Table S1 The different atezolizumab-containing regimens.

Treatment Regimens	Monotherapy (n = 57)	Combination therapy (n =71)
Mono therapy	**57(100.0%)**	**0(0.0%)**
Atezolizumab	57(100.0%)	0(0.0)
Dual therapy	**0(0.0%)**	**44(62.0%)**
Atezolizumab+Docetaxel	0(0.0%)	14(19.7%)
Atezolizumab+Gemcitabine	0(0.0%)	7(9.9%)
Atezolizumab+Vinorelbine	0(0.0%)	7(9.9%)
Atezolizumab+Pemetrexed	0(0.0%)	6(8.5%)
Atezolizumab+Paclitaxel	0(0.0%)	3(4.2%)
Atezolizumab+Bevacizumab	0(0.0%)	3(4.2%)
Atezolizumab+Ramucirumab	0(0.0%)	1(1.4%)
Atezolizumab+Afatinib	0(0.0%)	1(1.4%)
Atezolizumab+Alectinib	0(0.0%)	1(1.4%)
Atezolizumab+Ipilizumab	0(0.0%)	1(1.4%)
Triple Therapy	**0(0.0%)**	**20(28.2%)**
Atezolizumab+Pemetrexed+Cisplatin	0(0.0%)	5(7.0%)
Atezolizumab+Pemetrexed+Carboplatin	0(0.0%)	2(2.8%)
Atezolizumab+Paclitaxel+Cisplatin	0(0.0%)	2(2.8%)
Atezolizumab+Etoposide+Cisplatin	0(0.0%)	2(2.8%)
Atezolizumab+Gemcitabine+Cisplatin	0(0.0%)	1(1.4%)
Atezolizumab+Gemcitabine+Carboplatin	0(0.0%)	1(1.4%)
Atezolizumab+Cisplatin+Docetaxel	0(0.0%)	1(1.4%)
Atezolizumab+Cisplatin+Vinorelbine	0(0.0%)	1(1.4%)
Atezolizumab+Bevacizumab+Vinorelbine	0(0.0%)	3(4.2%)
Atezolizumab+Bevacizumab+Gemcitabine	0(0.0%)	1(1.4%)
Atezolizumab+Bevacizumab+Docetaxel	0(0.0%)	1(1.4%)
Quadruple	**0(0.0%)**	**7(9.9%)**
Atezolizumab+Bevacizumab+Pemetrexed+Cisplatin	0(0.0%)	2(2.8%)
Atezolizumab+Bevacizumab+Pemetrexed+Carboplatin	0(0.0%)	2(2.8%)
Atezolizumab+Bevacizumab+Paclitaxel+Carboplatin	0(0.0%)	1(1.4%)
Atezolizumab+Bevacizumab+Docetaxel+Carboplatin	0(0.0%)	1(1.4%)
Atezolizumab+Bevacizumab+Vinorelbine+Carboplatin	0(0.0%)	1(1.4%)

Supplementary Table S2. The different immune checkpoint inhibitor-containing regimens before atezolizumab-containing regimens.

Treatment Regimens	Number
Mono therapy	**5**
Pembrolizumab	3
Nivolumab	1
Spartalizumab	1
Combination therapy	**8**
Pembrolizumab+Paclitaxel	1
Pembrolizumab+Bevacizumab	1
Pembrolizumab+Pemetrexed+Carboplatin	1
Pembrolizumab+Paclitaxel+Cisplatin	1
Pembrolizumab+Paclitaxel+Carboplatin	1
Pembrolizumab+Bevacizumab+Carboplatin+Pemetrexed	1
Nivolumab+Erlotinib	1
Nivolumab+ Pemetrexed+Cisplatin+Afatinib	1

Supplementary Table S3 Clinical characteristics of *EGFR* mutation-positive patients who had received EGFR-TKIs before atezolizumab.

Factor	All patients	Osimertinib exposure before atezolizumab		*P**
		Yes	No	
Total patients, n (%)	41	10 (24.4%)	31 (75.6%)	
Age (median, years) (range)	63.1 (35.1–83.2)	59.5 (43.3–71.3)	63.1 (35.1–83.2)	0.463§
Sex				0.123
Female	27	9 (90.0%)	18 (58.1%)	
Male	14	1 (10.0%)	13 (41.9%)	
Smoking status				0.164
Nonsmokers	34	10 (100.0%)	24 (77.4%)	
Smokers	7	0 (0.0%)	7 (22.6%)	
ECOG PS				0.222
0–1	31	6 (60.0%)	25 (80.6%)	
≥2	10	4 (40.0%)	6 (19.4%)	
Histology				1.000
Nonadenocarcinoma	2	0 (0.0%)	2 (6.5%)	
Adenocarcinoma	39	10 (100.0%)	29 (93.5%)	
Brain metastasis				1.000
No	16	4 (40.0%)	12 (38.7%)	
Yes	25	6 (60.0%)	19 (61.3%)	
PD-L1 TPS				0.291#
<50%	19	6 (60.0%)	13 (41.9%)	
≥50%	6	0 (0.0%)	6 (19.4%)	
No data	16	4 (40.0%)	12 (38.7%)	
***EGFR* mutations**				0.548#
Del-19	17	5 (50.0%)	12 (38.7%)	
L858R	21	5 (50.0%)	16 (51.6%)	
Other	3	0 (0.0%)	3 (9.7%)	
Line of atezolizumab				0.083
Second	9	0 (0.0%)	9 (29.0%)	

≥Third	32	10 (100.0%)	22 (71.0%)	
Atezolizumab therapy				0.700
Monotherapy	11	2 (20.0%)	9 (29.0%)	
Combination	30	8 (80.0%)	22 (71.0%)	
Prior medications				
EGFR TKIs	38	10 (100.0%)	28 (73.7%)	0.564
ICIs	2	0 (0.0%)	2 (6.5%)	1.000
Platinum	37	10 (100.0%)	27 (87.1%)	0.556
Pemetrexed	33	10 (100.0%)	23 (74.2%)	0.165

*Fisher's exact test; [§]Mann–Whitney *U*-test; [#] chi-squared test

ECOG PS, Eastern Cooperative Oncology Group performance status; PD-L1, programmed death-ligand 1; TPS, tumor proportion score.

Only one patient received post- and pre-atezolizumab osimertinib treatment (NTUH-052).

Supplementary Table S4 Multivariate analysis of predictive factors for progression-free survival and prognostic factors for overall survival in patients who received atezolizumab as a second- or subsequent-line treatment.

Prognostic Factors	Multivariate backward LR analysis			
	Progression free survival		Overall survival	
	HR 95% CI	*p*	HR 95% CI	*p*
Male				
Smokers				
ECOG PS 2–4			3.26 (1.55–6.86)	0.002
Adenocarcinoma				
Brain metastasis				
PD-L1 TPS				
≥50% vs. <50%				
No data vs. <50%				
EGFR				
Mutation vs. Wild				
No data vs. Wild				
≥Third line of atezolizumab				
Atezolizumab combination therapy	0.61 (0.37–1.02)	0.061		
Prior EGFR TKI				
Prior platinum therapy	0.46 (0.22–0.97)	0.040		
Prior ICIs			3.17 (1.19–8.45)	0.021
Prior pemetrexed				
Prior osimertinib	2.73 (1.05–7.07)	0.039	3.30 (1.16–9.41)	0.026

EGFR, epidermal growth factor receptor gene; EGFR TKI, epidermal growth factor receptor tyrosine kinase inhibitor; ECOG PS, Eastern Cooperative Oncology Group performance status; PD-L1, programmed death-ligand 1; TPS, tumor proportion score; HR, hazard ratio; CI, confidence interval; ICIs, immune checkpoint inhibitors