

Table S1 Detail variable definition

Variables	Definition
Treatment with ICIs	Considered when one of the following drugs were prescribed alone or in combination with other systemic therapies: nivolumab, pembrolizumab, atezolizumab, avelumab, durvalumab, ipilimumab, or tremelimumab
Age	Age at the time of ICI treatment initiation
Performance status	Evaluated according to the Eastern Cooperative Oncology Group grading system at the start of the ICI treatment, classified into: asymptomatic [0], symptomatic but completely ambulatory [1], symptomatic with less than 50% of the time in bed [2], symptomatic with more than 50% of the time in bed [3], bedbound [4], and deceased [5] (25)
Stage of disease	Evaluated according to the 8 th edition of the clinical TNM staging system for lung cancer, classified into stages I, II, III and IV (26)
Combination therapy	Defined as the administration of a chemotherapy agent together with one or more ICIs
Treatment line	Defined as the number of previous systemic anti-cancer treatment before the initiation of the ICI and were classified as 1 st line (no prior treatments or when patients with a recurrent NSCLC received the last dose of the previous systemic treatment more than 24 months before ICI treatment initiation), 2 nd line (one previous treatment), and 3 rd line (two or more previous treatments). In the case of the NCR data, only data on first-line treatment is collected

ICI, immune checkpoint inhibitor; NSCLC, non-small cell lung cancer; NCR, Netherlands Cancer Registry.

Table S2 Frequencies and proportion of specific immunotherapy agents administered between 2016–2020 in the Netherlands

Treatment regime	NCR (n=6,816)		UMCG (n=449)	
	N	%	N	%
Atezolizumab	24	0.4	9	2
Atezolizumab + 2 chemotherapy agents	19	0.3	12	2.7
Avelumab	12	0.2	0	0
Durvalumab	1,208	17.7	43	9.6
Durvalumab + 2 chemotherapy agents	14	0.2	0	0
Durvalumab + tremelimumab	8	0.1	4	0.9
Ipilimumab	8	0.1	0	0
Medication in study	4	0.1	1	0.2
Nivolumab	93	1.4	239	53.2
Nivolumab + ipilimumab	12	0.2	7	1.6
Nivolumab + 2 chemotherapy agents	9	0.1	0	0
Pembrolizumab	2,991	43.9	91	20.3
Pembrolizumab + 1 chemotherapy agent	23	0.4	0	0
Pembrolizumab + 2 chemotherapy agents	2,368	34.7	43	9.6
Missing	23	0.3	0	0

Data from the Netherlands Cancer Registry (first-line treatment) versus dedicated hospital (UMCG, all lines of treatment). NCR, Netherlands Cancer Registry; UMCG, University Medical Center Groningen.

Table S3 Patients with non-small cell lung cancer treated with all-line immunotherapy from the University Medical Center Groningen, patient and treatment characteristics: APC and SE

Variables	Category	APC (%)	SE	P value
Age	Mean age	0.61	0.14	0.02*
Sex	Man	0.56	0.98	0.60
	Women	-0.56	0.98	0.60
Stage	II	0.74	0.25	0.06
	III	5.38	1.56	0.04*
	IV	-6.12	1.68	0.04*
PD-L1 expression	<1%	5.59	2.82	0.14
	≥1–<50%	4.85	3.37	0.25
	≥50%	3.3	4.52	0.52
	Unknown/not tested	-13.74	8.08	0.19
ECOG performance status	0–1	-0.78	2.37	0.76
	2	0.74	1.89	0.72
	≥3	0.05	0.61	0.95
Treatment combination	Combination therapy	12.44	3.87	0.049*
	Mono therapy	-12.44	3.87	0.049*
Treatment line	First line	17.15	1.37	<0.001*
	Second line	-16.57	0.79	<0.001*
	Third or higher line	-0.58	0.81	0.52

*, significantly different from no change. APC, annual percentage change; SE, standard error; PD-L1, programmed death-ligand 1; ECOG, Eastern Cooperative Oncology Group.

Table S4 Comparison of median OS, 1- and 2-year survival of Griesinger et al. (22) (France's ESME-AMLC and Germany's CRISP) vs. the NCR

Estimator	Netherlands NCR	France/ESME-AMLC		Germany/CRISP	
	All types of histology	SQ	NSQ	SQ	NSQ
Median OS (months)	17.4	15.5	14.1	10.9	11.9
1-year survival	59.0%	58.2%	54.8%	47.3%	49.7%
2-year survival	25.9%	36.8%	36.5%	25.6%	30.8%

OS, overall survival; ESME-AMLC, Epidemiological-Strategy and Medical Economics Advanced and Metastatic Lung Cancer; CRISP, Clinical Research platform Into molecular testing, treatment and outcome of non-Small cell lung carcinoma Patients; NCR, Netherlands Cancer Registry; SQ, squamous cell carcinoma; NSQ, non-squamous cell carcinoma.

References

- Oken MM, Creech RH, Tormey DC, et al. Toxicity and response criteria of the Eastern Cooperative Oncology Group. *Am J Clin Oncol* 1982;5:649-55.
- Lababede O, Meziane MA. The Eighth Edition of TNM Staging of Lung Cancer: Reference Chart and Diagrams. *Oncologist* 2018;23:844-8.