

Supplementary Materials: Real-World Treatment Patterns and Survival in Patients with Advanced Non-Small Cell Lung Cancer: An Italian Retrospective Cohort Study

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Table S1. Algorithm to determine treatment intent of first treatment recorded for stage IIIA/IIIB patients.

Algorithm step		Intent of SACT
Consider first SACT regimen at of time entry in IRST		
1. Did the SACT regimen include immunotherapy?	Yes—go to next step	
	No—go to step 3	
2. Did the SACT regimen include durvalumab?	Yes	Curative
	No	Advanced
3. Did the SACT regimen include a TKI?	Yes	Advanced
	No—go to next step	
The SACT regimen does not include any of the above		
4. Was the SACT regimen part of a chemoradiation schedule (radiotherapy + SACT, concurrent or sequential, with or without durvalumab)?	Yes	Curative
	No—go to next step	
5. Was the SACT regimen adjuvant to surgery?	Yes	Curative
	No—go to next step	
6. Was the SACT regimen intended to be neoadjuvant to surgery?	Yes—information on intent retrieved from notes	Curative
	Yes—there is a record of surgery after SACT	Curative
	No—go to next step	
7. Do treatment notes state SACT regimen was administered with advanced intent?	Yes	Advanced
	No—go to next step	
8. Do treatment notes state SACT regimen was administered with curative intent?	Yes	Curative
	No—go to next step	
9. Do treatment notes NOT state SACT regimen intent?	Yes—go to next step	
10. Was the SACT regimen part of a schedule including radiotherapy, but not part of a chemoradiation schedule?	Yes for radiotherapy – No information on intent	Assume: Stage IIIA: curative Stage IIIB: advanced
	No for radiotherapy—go to step 11	
11. Was the SACT regimen administered as a schedule on its own (i.e., no radiotherapy or surgery)?	Yes (SACT alone)	Advanced

SACT includes chemotherapy, targeted treatments, immunotherapy.

IRST: IRCCS Istituto Romagnolo per lo Studio dei Tumori; SACT: systemic anti-cancer therapy; TKI: tyrosine kinase inhibitor.

Table S2. Temporal testing patterns for PD-L1 expression and key actionable genomic alterations in the overall population.

	Year of first line of therapy initiation							
	2014 (n = 106)	2015 (n = 101)	2016 (n = 116)	2017 (n = 112)	2018 (n = 126)	2019 (n = 125)	2020 (n = 115)	2021 (n = 109)
Tumour PD-L1 expression								
Conclusive test result	*	*	11 (9%)	50 (45%)	112 (89%)	118 (94%)	**	101 (93%)
Inconclusive test result/ not tested	**	**	105 (91%)	62 (55%)	14 (11%)	7 (6%)	*	8 (7%)
EGFR mutations								
Conclusive test result	81 (76%)	79 (78%)	93 (80%)	81 (72%)	103 (82%)	94 (75%)	92 (80%)	82 (75%)
Inconclusive test result/ not tested	25 (24%)	22 (22%)	23 (20%)	31 (28%)	23 (18%)	31 (25%)	23 (20%)	27 (25%)
ALK mutations								
Conclusive test result	46 (43%)	62 (61%)	85 (73%)	***	98 (78%)	***	***	88 (81%)
Inconclusive test result/ not tested	60 (57%)	39 (39%)	31 (27%)	**	28 (22%)	**	**	21 (19%)
ROS1 mutations								
Conclusive test result	11 (10%)	16 (16%)	27 (23%)	47 (42%)	***	***	***	87 (80%)
Inconclusive test result/ not tested	95 (90%)	85 (84%)	89 (77%)	65 (58%)	**	**	**	22 (20%)

Categorical data are shown as amount (percentage). *Indicates primary data masking of patient counts between 1 and 4; **indicates secondary data masking to prevent calculation of primary masked data; ***indicates undeterminable patient counts due to masking of a component of the total number of patients (i.e., due to primary data masking of the number of patients with a positive test result, it was not possible to determine the total number of patients with quantifiable data). *ALK*, anaplastic lymphoma kinase; *EGFR*, epidermal growth factor receptor; PD-L1, programmed cell ligand 1; *ROS1*: c-ros oncogene 1 receptor tyrosine kinase.

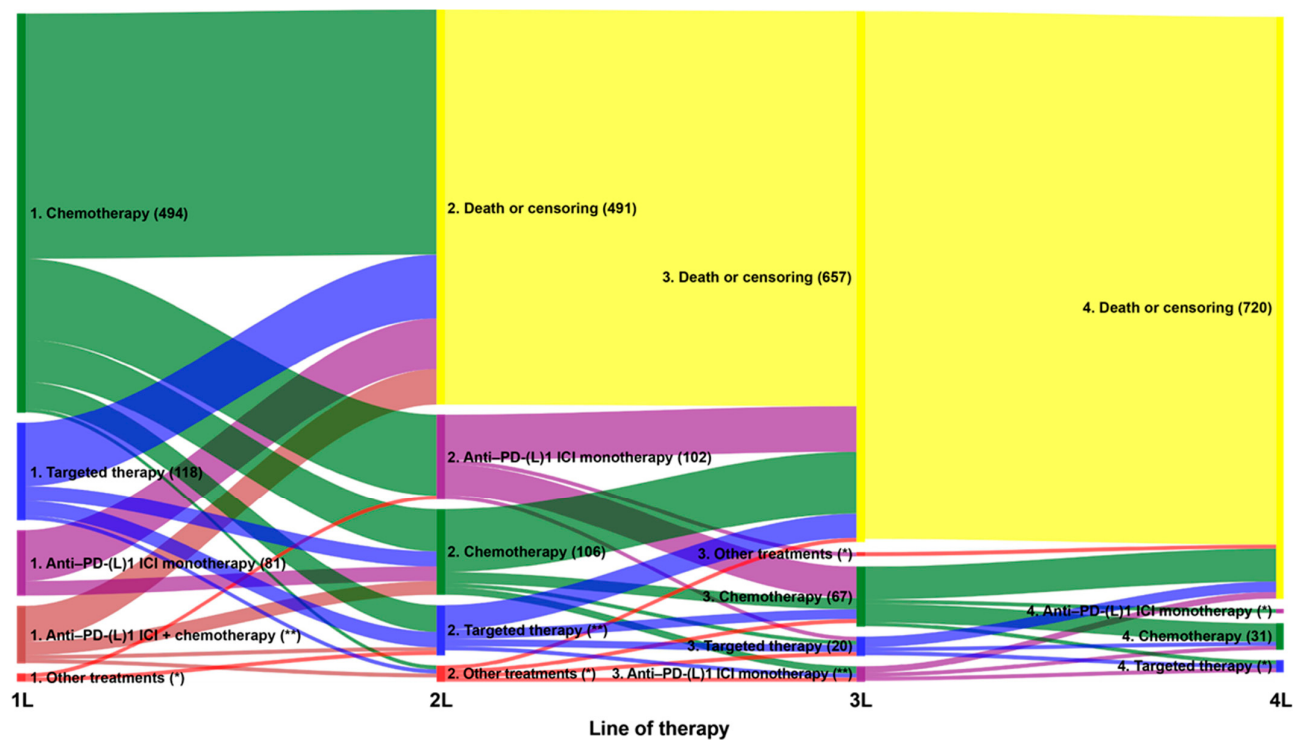


Figure S1. Treatment sequencing (first to fourth line) for patients with a de novo diagnosis. * Indicates primary data masking of patient counts between 1 and 4; ** indicates secondary data masking to prevent calculation of primary masked data. ICI: immune checkpoint inhibitor; PD-(L)1: programmed death (ligand) 1.

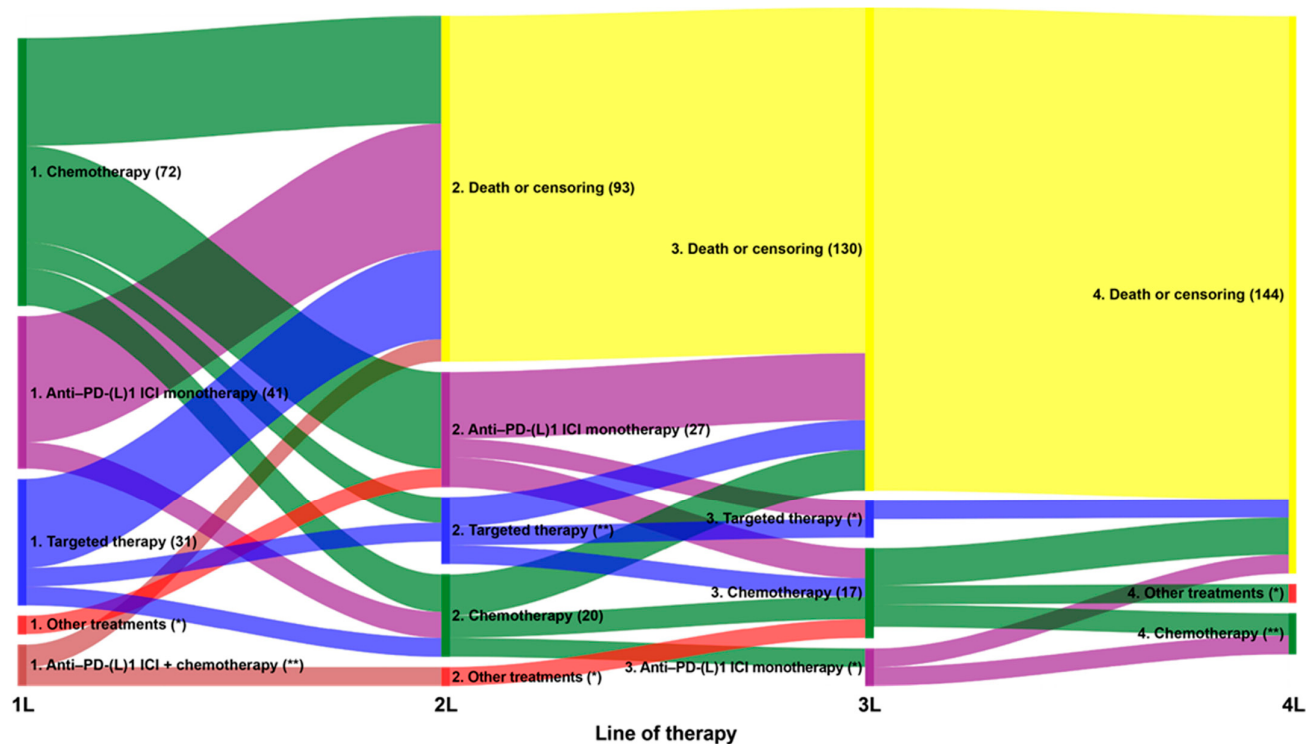


Figure S2. Treatment sequencing (first to fourth line) for patients with recurrent disease. * Indicates primary data masking of patient counts between 1 and 4; ** indicates secondary data masking to prevent calculation of primary masked data. ICI: immune checkpoint inhibitor; PD-(L)1: programmed death (ligand) 1;

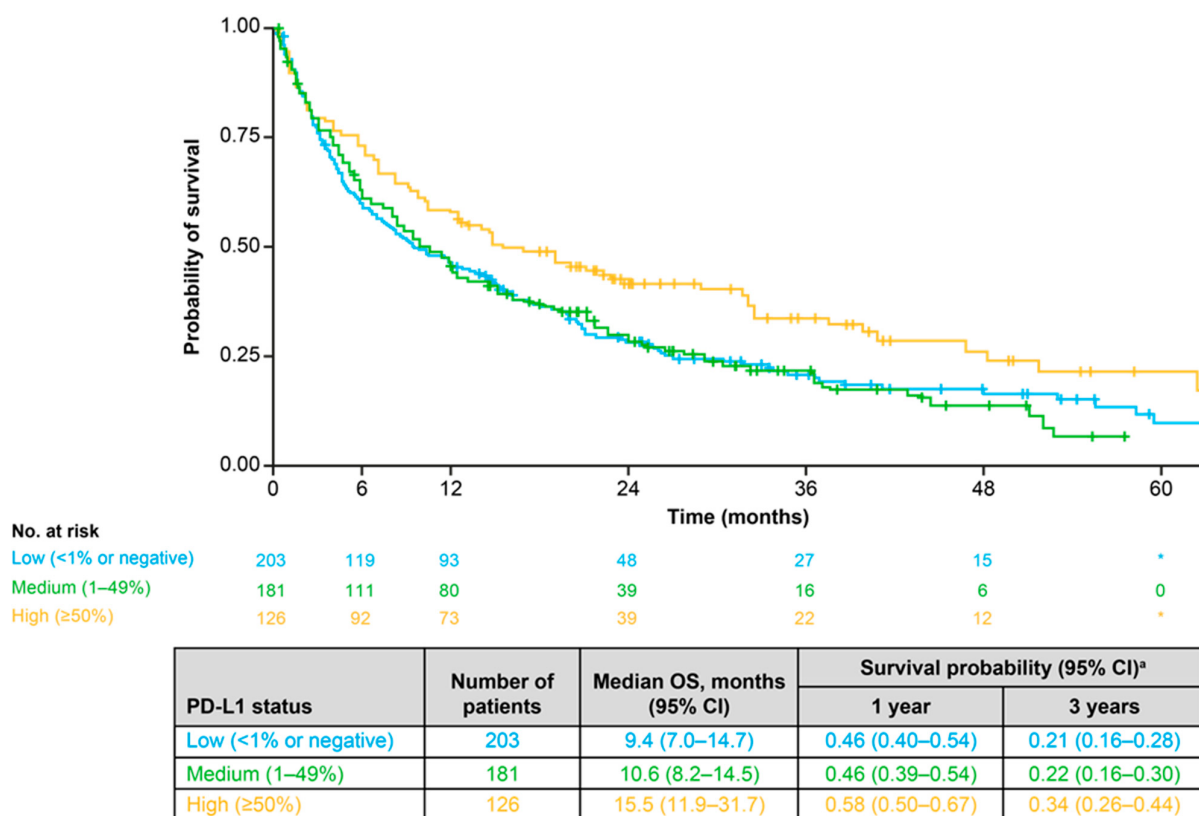


Figure S3. Overall survival for the overall population stratified by tumour PD-L1 status. ^aSurvival probabilities are suppressed when the number of patients at risk is <10. * Indicates primary data masking of patient counts between 1 and 4. CI: confidence interval; PD-L1: programmed death ligand 1; OS: overall survival.

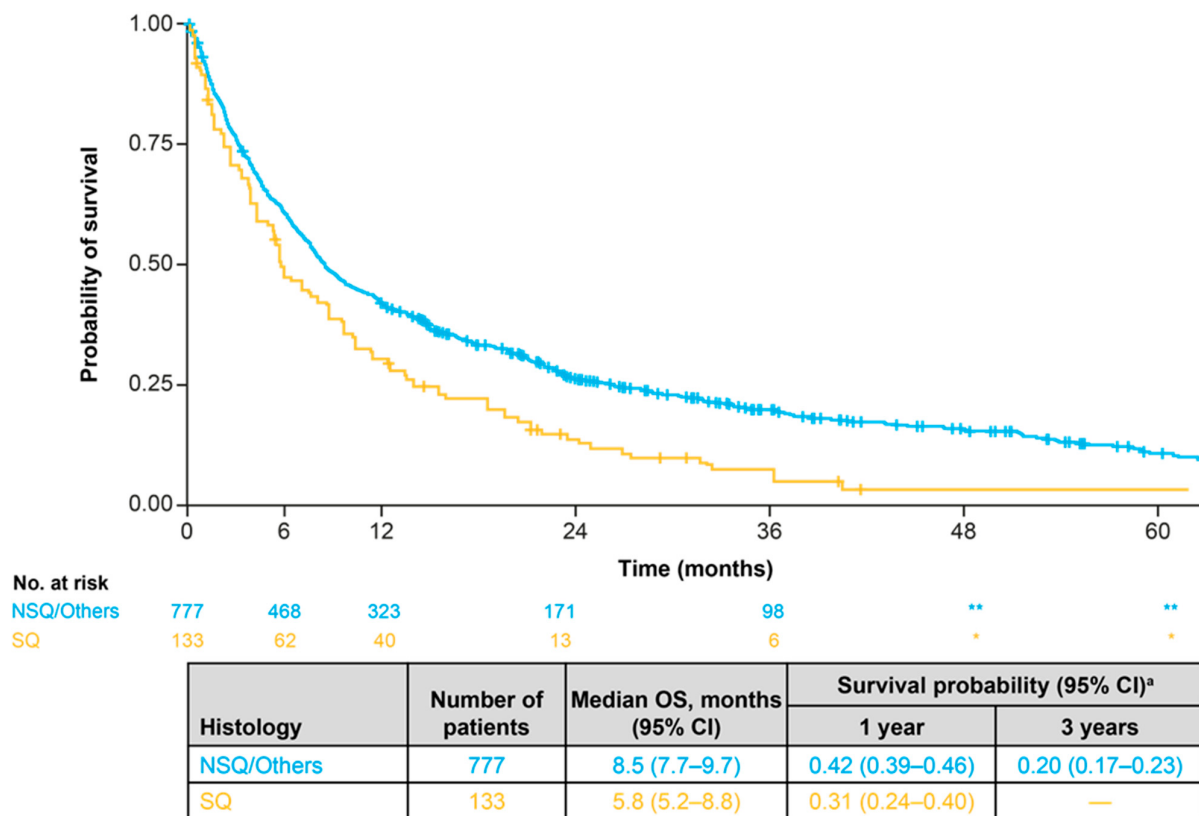


Figure S4. Overall survival for the overall population stratified by histology. * Indicates primary data masking of patient counts between 1 and 4; ** indicates secondary data masking to prevent calculation of primary masked data. ^aSurvival probabilities are suppressed when the number of patients at risk is <10. CI: confidence interval; NSQ: non-squamous; OS: overall survival; SQ: squamous.

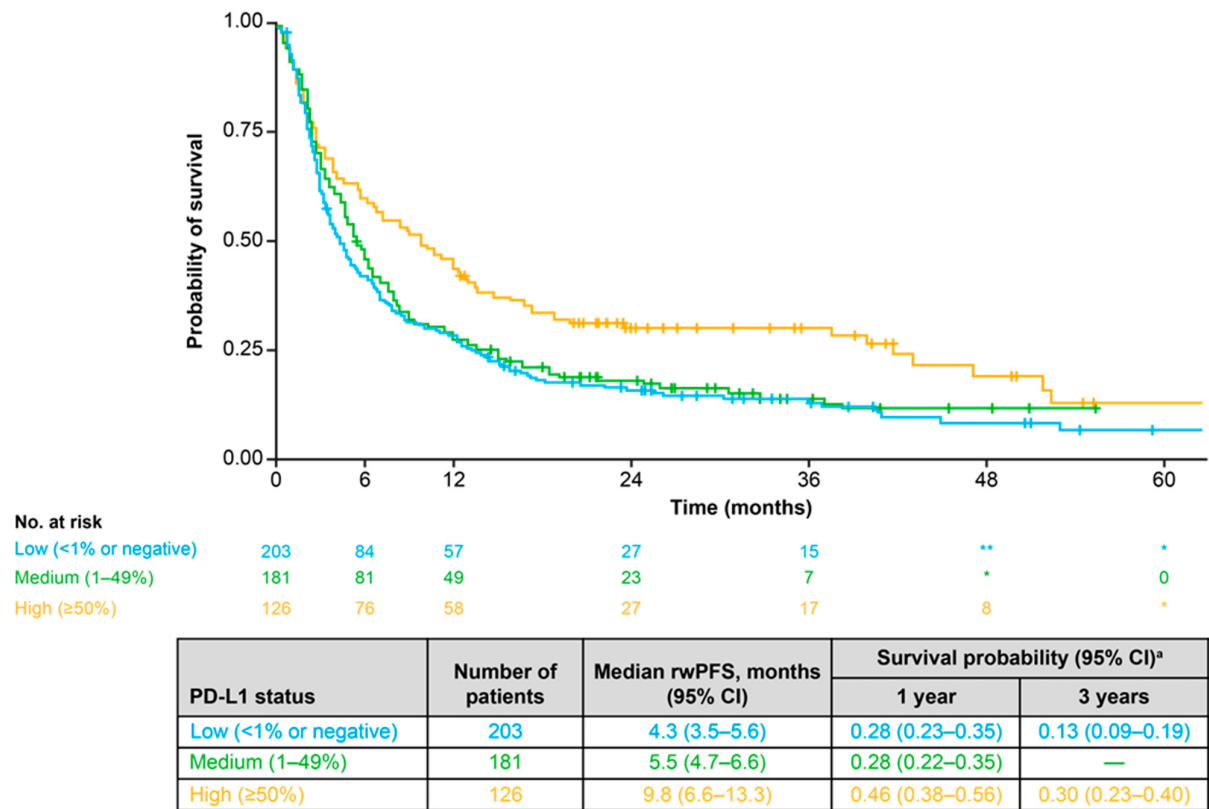


Figure S5. Real-world progression-free survival for the overall population stratified by tumour PD-L1 status. * Indicates primary data masking of patient counts between 1 and 4; ** indicates secondary data masking to prevent calculation of primary masked data. ^aSurvival probabilities are suppressed when the number of patients at risk is <10. CI: confidence interval; PD-L1: programmed death ligand 1; rwPFS: real-world progression-free survival.

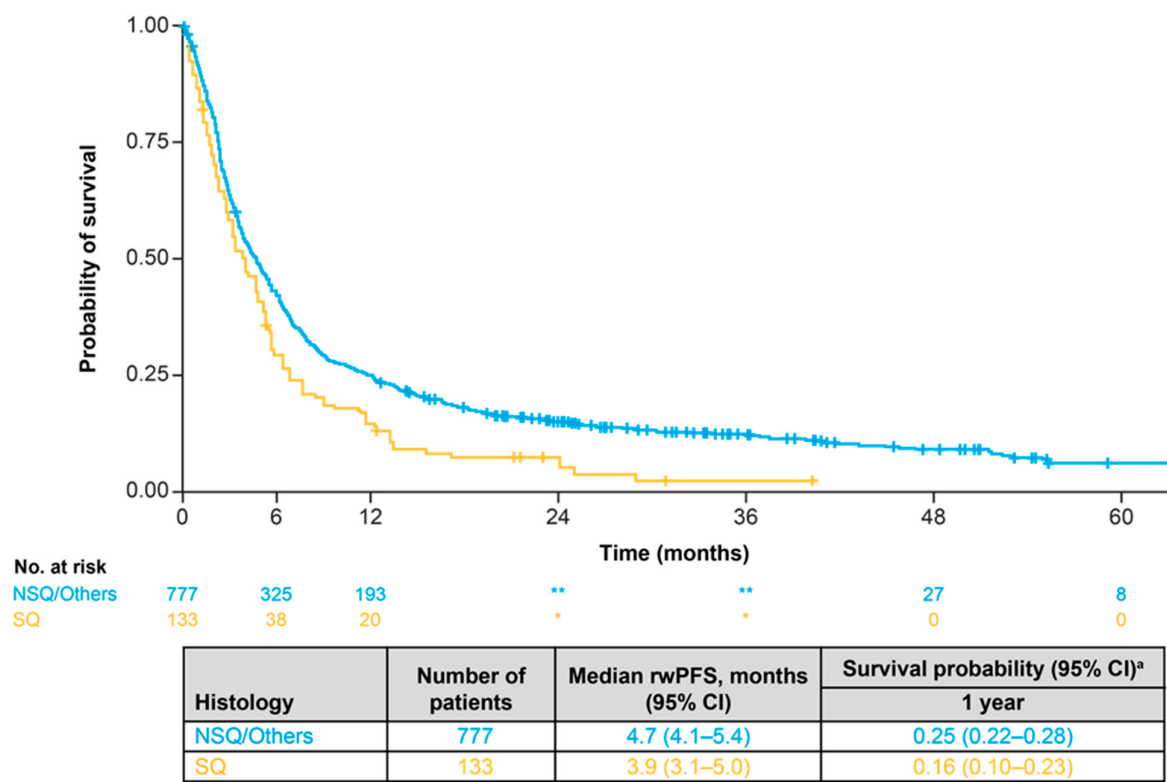


Figure S6. Real-world progression-free survival for the overall population stratified by histology. * Indicates primary data masking of patient counts between 1 and 4; ** indicates secondary data masking to prevent calculation of primary masked data. ^a Survival probabilities are suppressed when the number of patients at risk is <10. CI: confidence interval; NSQ: non-squamous; rwPFS: real-world progression-free survival; SQ: squamous.