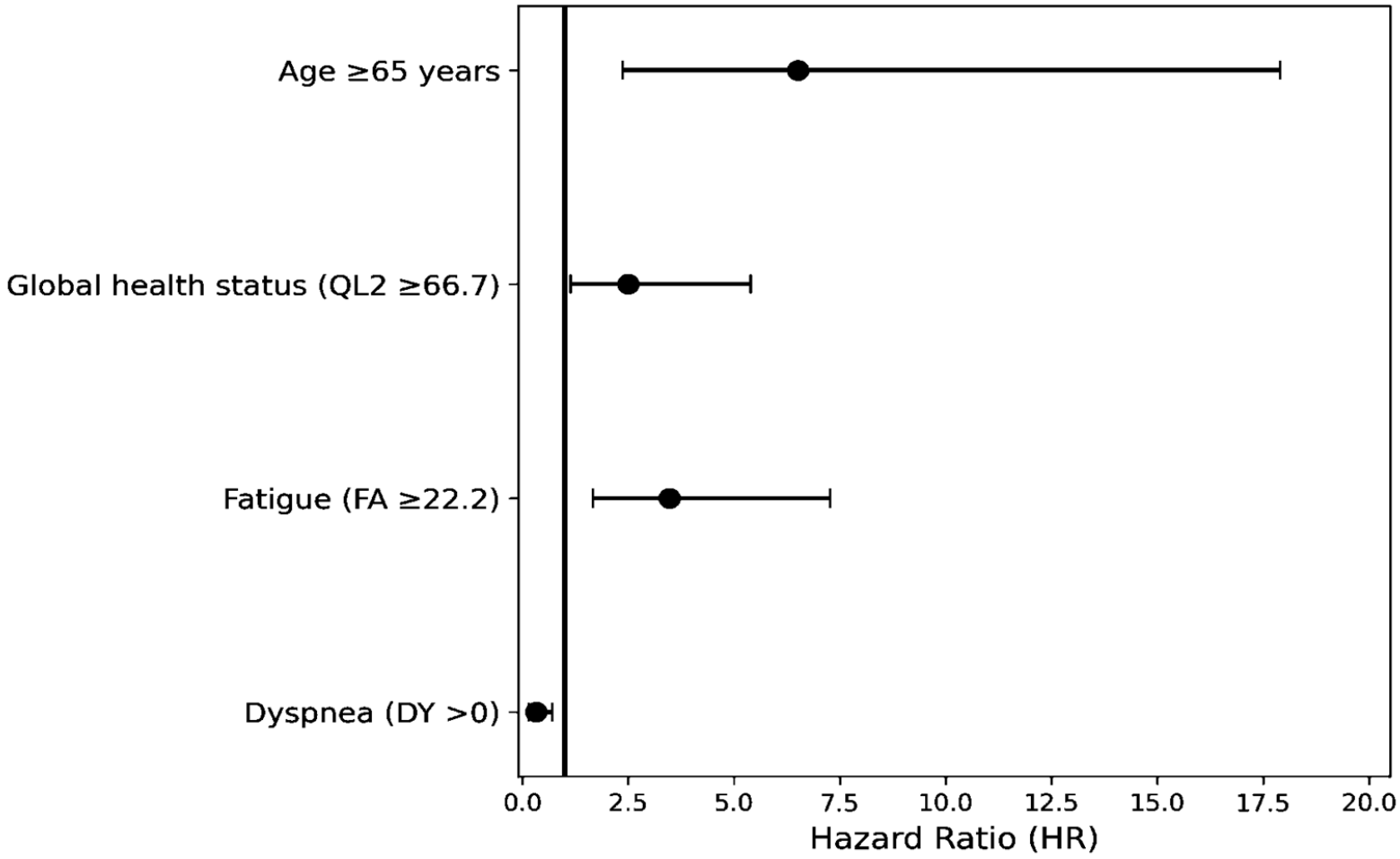
Supplementary Figure 1.



Supplementary Figure 1 legend: Forest plot of primary multivariable predictors of recurrence based on the cause-specific Firth-penalized Cox regression model. Hazard ratios (HRs) and 95% confidence intervals are shown.

Supplementary Table 1. Comparison of baseline clinicopathologic characteristics between patients included in and excluded from the 1-year landmark cohort

Variable	Excluded (N = 117)	Included (N = 232)	P value
Age			0.7455
<65 years	48 (41.0%)	91 (39.2%)	
≥65 years	69 (59.0%)	141 (60.8%)	
Sex			0.5837
Female	17 (14.5%)	39 (16.8%)	
Male	100 (85.5%)	193 (83.2%)	
Smoking status			0.0267
Never smoker	21 (18.0%)	37 (16.0%)	
Former smoker	41 (35.0%)	115 (49.8%)	
Active smoker	55 (47.0%)	79 (34.2%)	
Missing	0	1	
COPD			0.0123
No	50 (42.7%)	68 (29.3%)	
Yes	67 (57.3%)	164 (70.7%)	
Pack-years			0.4990

<40	68 (58.1%)	126 (54.3%)	
≥40	49 (41.9%)	106 (45.7%)	
Type of resection			0.3593
Lobectomy	97 (82.9%)	187 (80.6%)	
Bilobectomy	2 (1.7%)	1 (0.4%)	
Segmentectomy	17 (14.5%)	37 (15.9%)	
Wedge resection	1 (0.9%)	7 (3.0%)	
Histology			0.4241
Adenocarcinoma	83 (70.9%)	179 (77.2%)	
Squamous cell carcinoma	20 (17.1%)	33 (14.2%)	
Other	14 (12.0%)	20 (8.6%)	
Pathological stage			0.0530
IA	79 (67.5%)	179 (77.2%)	
IB	38 (32.5%)	53 (22.8%)	

Data are presented as n (%). P values refer to the overall comparison between patients included in and excluded from the 1-year landmark cohort. COPD, chronic obstructive pulmonary disease.

Supplementary Table 2. Complete health-related quality of life profile at the 1-year landmark assessment

QLQ30 scores at 1 year	
Global Health Status (QL2), median (IQR)	66.7 (66.7–83.3)
QL2 <66.7	110 (47.4%)
QL2 ≥66.7	122 (52.6%)
Physical Functioning (PF2), median (IQR)	80.0 (13.3-86.7)
PF2 <86.7	117 (50.4%)
PF2 ≥86.7	115 (49.6%)
Emotional Functioning (EF), median (IQR)	83.3 (75.0-91.7)
EF <75.0	52 (22.7%)
EF ≥75.0	177 (77.3%)
Missing	3
Cognitive Functioning (CF), median (IQR)	83.3 (83.3-100)
CF <83.3	40 (17.2%)
CF ≥83.3	192 (82.8%)
Social Functioning (SF), median (IQR)	100 (83.3-100)
SF <100	58 (25.2%)
SF = 100	172 (74.8%)
Missing	2
Fatigue (FA), median (IQR)	0 (0–33.3)
FA <22.2	117 (50.4%)
FA ≥22.2	115 (49.6%)
Pain (PA), median (IQR)	0 (0–16.7)
PA = 0	157 (67.7%)
PA >0	75 (32.3%)
Dyspnea (DY), median (IQR)	0 (0–33.3)
DY = 0	103 (44.4%)
DY > 0	129 (55.6%)

Insomnia (SL), median (IQR)	0 (0–33.3)
SL = 0	123 (53.0%)
SL > 0	109 (47.0%)
Financial Difficulties (FI), median (IQR)	0 (0–0)
FI = 0	198 (86.8%)
FI > 0	30 (13.2%)
Missing	4
LC13 scores at 1 year	
Dyspnoea (LCDY), median (IQR)	22.2 (11.1–22.2)
LCDY < 11.1	47 (21.1%)
LCDY ≥ 11.1	176 (78.9%)
Missing	9
Couging (LCCO), median (IQR)	33.3 (0–33.3)
LCCO = 0	93 (41.3%)
LCCO > 0	132 (58.7%)
Missing	7
Haemoptysis (LCHA), median (IQR)	0 (0–0)
LCHA = 0	225 (99.1%)
LCHA > 0	2 (0.9%)
Missing	5
Dysphagia (LCDS), median (IQR)	0 (0–0)
LCDS = 0	198 (87.6%)
LCDS > 0	28 (12.4%)
Missing	6
Alopecia (LCHR), median (IQR)	0 (0–0)
LCHR = 0	197 (86.8%)
LCHR > 0	30 (13.2%)
Missing	5
Pain in Chest (LCPC), median (IQR)	0 (0–0)
LCPC = 0	170 (75.6%)
LCPC > 0	55 (24.4%)
Missing	7

Pain in Other Parts (LCPO), median (IQR)	0 (0–33.3)
LCPO = 0	130 (65.7%)
LCPO > 0	68 (34.3%)
Missing	34

Missing QLQ-LC13 data by domain were: LCDY 9 (3.9%), LCCO 7 (3.0%), LCHA 5 (2.2%), LCSM 7 (3.0%), LCDS 6 (2.6%), LCPN 7 (3.0%), LCHR 5 (2.2%), LCPC 7 (3.0%), LCPA 7 (3.0%), and LCPO 34 (14.7%).

Supplementary Table 3. Comparative analysis of EORTC QLQ-C30 domains according to clinicopathologic variables

		QL2		pvalue	PF2		pvalue	RF2		pvalue	EF		pvalue
		<66.7	>=66.7		<86.7	>=86.7		<83.3	>=83.3		<=75	>75	
Age	<65	37 (33.6)	54 (44.3)	0.0979	40 (34.2)	51 (44.4)	0.113	12 (30.0)	79 (41.2)	0.1890	39 (42.4)	52 (37.1)	0.4232
	≥65	73 (66.4)	68 (55.7)		77 (65.8)	64 (55.6)		28 (70.0)	113 (58.8)		53 (57.6)	88 (62.9)	
Sex	F	18 (16.4)	21 (17.2)	0.8628	24 (20.5)	15 (13.0)	0.1282	7 (17.5)	32 (16.7)	0.8980	21 (22.8)	18 (12.9)	**0.0470**
	M	92 (83.6)	101 (82.8)		93 (79.5)	100 (86.7)		33 (82.5)	160 (83.3)		71 (77.2)	122 (87.1)	
Smoke	No	19 (17.4)	18 (14.8)	0.5797	26 (22.2)	11 (9.7)	0.0092	10 (25.6)	27 (14.1)	0.0723	13 (14.1)	24 (17.3)	0.5247
	Yes	90 (82.6)	104 (85.2)		91 (77.89	103 (90.3)		29 (74.4)	165 (85.9)		79 (85.9)	115 (82.7)	
Resection	Lob/Bilob	88 (80.0)	100 (82.0)	0.7027	97 (82.9)	91 (79.1)	0.4633	32 (80.0)	156 (81.3)	0.8544	75 (81.5)	113 (80.7)	0.878
	other	22 (20.0)	22 (18.0)		20 (17.1)	24 (20.9)		8 (20.0)	36 (18.7)		17 (18.5)	27 (19.3)	
Histology	Squamous	21 (19.1)	12 (9.8)	**0.0439**	15 (12.8)	18 (15.7)	0.5370	5 (12.5)	28 (14.6)	0.7315	12 (13.0)	21 (15.0)	0.6764
	Other	89 (80.9)	110 (90.2)		102 (87.2)	97 (84.3)		35 (87.5)	164 (85.4)		80 (87.0)	119 (85.0)	
		CF		pvalue	SF		pvalue	FA		pvalue	NV		pvalue
		<83.3	>=83.3		<83.3	>=83.3		<22.2	>=22.2		0	>0	
Age	<65	13 (32.5)	78 (40.6)	0.3383	13 (41.9)	78 (38.8)	0.7398	48 (41.0)	43 (37.4)	0.5708	76 (37.3)	15 (53.6)	0.0973

	≥65	27 (67.5)	114 (59.4)		18 (58.1)	123 (61.2)		69 (59.0)	72 (62.6)		128 (62.7)	13 (46.4)	
Sex	F	9 (22.5)	30 (15.6)	0.2902	6 (19.4)	33 (16.4)	0.684	19 (16.2)	20 (17.4)	0.8145	37 (18.1)	2 (7.1)	0.1446
	M	31 (77.5)	162 (84.4)		25 (80.6)	168 (83.6)		98 (83.8)	95 (82.6)		167 (81.9)	26 (92.9)	
Smoke	NO	6 (15.0)	31 (16.2)	0.847	5 (16.1)	32 (16.0)	0.9855	14 (12.0)	23 (20.2)	0.089	32 (15.8)	5 (17.9)	0.7771
	SI	34 (85.0)	160 (83.8)		26 (83.8)	168 (84.0)		103 (88.0)	91 (79.8)		171 (84.2)	23 (82.1)	
Resection	lob/bilob	28 (70.0)	160 (83.3)	0.0504	25 (80.7)	163 (81.1)	0.9526	94 (80.3)	94 (81.7)	0.7861	164 (80.4)	24 (85.7)	0.5005
	other	12 (30.0)	32 (16.7)		6 (19.3)	38 (18.9)		23 (19.7)	21 (18.3)		40 (19.6)	4 (14.3)	
Histology	Squamous	8 (20.0)	25 (13.0)	0.2503	4 (12.9)	29 (14.4)	0.821	16 (13.7)	17 (14.8)	0.8092	27 (13.2)	6 (21.4)	0.2445
	Other	32 (80.0)	167 (87.0)		27 (87.1)	172 (85.6)		101 (86.3)	98 (85.2)		177 (86.8)	22 (78.6)	
		PA		pvalue	DY		pvalue	SL		pvalue	AP		pvalue
		0	>0		0	>0		0	>0		0	>0	
Age	<65	58 (36.9)	33 (44.0)	0.3031	40 (38.8)	51 (39.5)	0.9136	45 (36.6)	46 (42.2)	0.3819	85 (41.1)	6 (25.0)	0.1274
	≥65	99 (63.1)	42 (56.0)		63 (61.2)	78 (60.5)		78 (63.4)	63 (57.8)		122 (58.9)	18 (75.0)	
Sex	F	25 (15.9)	14 (18.7)	0.6013	15 (14.6)	24 (18.6)	0.4134	14 (11.4)	25 (22.9)	**0.0188**	37 (17.8)	1 (4.2)	0.0864
	M	132 (84.1)	61 (81.3)		88 (85.4)	105 (81.4)		109 (88.6)	84 (77.1)		170 (82.1)	23 (95.8)	
Smoke	No	21 (13.4)	16 (21.6)	0.1108	16 (15.5)	21 (16.4)	0.8574	21 (17.1)	16 (14.8)	0.6405	34 (16.5)	3 (12.5)	0.6133
	Yes	136 (86.6)	58 (78.4)		87 (84.5)	107 (83.6)		102 (82.99	92 (85.2)		172 (83.5)	21 (87.5)	

Resection	Lob/Bilob	130 (82.8)	58 (77.3)	0.3203	82 (79.6)	106 (82.2)	0.6213	100 (81.3)	88 (80.7)	0.9125	166 (80.2)	21 (87.5)	0.3882
	other	27 (17.2)	17 (22.7)		21 (20.4)	23 (17.8)		23 (18.7)	21 (19.3)		41 (19.8)	3(12.5)	
Histology	Squamous	23 (14.7)	10 (13.3)	0.7883	13 (12.6)	20 (15.5)	0.5323	17 (13.8)	16 (14.7)	0.8519	25 (12.1)	8 (33.3)	0.0048
	Other	134 (85.4)	65 (86.7)		90 (87.4)	109 (84.5)		106 (86.2)	93 (85.3)		182 (87.92)	16 (66.7)	
		CO		pvalue	DI		pvalue	FI		pvalue			
		0	>0		0	>0		0	>0				
Age	<65	65 (40.1)	24 (35.3)	0.4926	79 (40.3)	9 (28.1)	0.1894	72 (36.4)	18 (60.0)	**0.0136**			
	≥65	97 (59.9)	44 (64.7)		117 (59.7)	23 (71.9)		126 (63.6)	12 (40.0)				
Sex	F	26 (16.1)	13 (19.1)	0.5715	33 (16.8)	5 (15.6)	0.8646	34 (17.2)	5 (16.7)	0.9454			
	M	136 (83.9)	55 (80.9)		163 (83.2)	27 (84.4)		164 (82.3)	25 (83.3)				
Smoke	No	28 (17.4)	9 (13.2)	0.435	32 (16.4)	4 (12.5)	0.5746	30 (15.2)	7 (23.3)	0.2629			
	Yes	133 (82.6)	59 (86.8)		163 (83.6)	28 (87.5)		167 (84.8)	23 (76.7)				
Resection	Lob/Bilob	130 (80.3)	56 (82.4)	0.711	161 (82.1)	23 (71.9)	0.1724	161 (81.3)	23 (76.7)	0.5479			
	other	32 (19.7)	12 (17.6)		35 (17.9)	9 (28.1)		37 (18.7)	7 (23.3)				
Histology	Squamous	15 (9.3)	18 (26.5)	0.0007	28 (14.3)	5 (15.6)	0.8418	28 (14.1)	4 (13.3)	0.9055			
	Other	147 (90.7)	50 (73.5)		168 (85.7)	27 (84.38)		170 (85.9)	26 (86.7)				

QL2 – Global health status
PF2 – Physical functioning
RF2 – Role functioning
EF – Emotional functioning
CF – Cognitive functioning
SF – Social functioning
FA – Fatigue
NV – Nausea and vomiting
PA – Pain
DY – Dyspnea
SL – Insomnia
AP – Appetite loss
CO – Constipation
DI – Diarrhea
FI – Financial difficulties

Supplementary Table 4. Comparative analysis of EORTC LC13 domains according to clinicopathologic variables

		LCDY		pvalue	LCCO		pvalue	LCHA		pvalue	LCSM		pvalue
		<11.1	>=11.1		0	>0		0	>0		0	>0	
Age	<65	20 (35.7)	71 (40.3)	0.5368	43 (46.2)	48 (36.4)	0.1373	91 (40.4)	0	0.5175*	82 (39.2)	127 (60.8)	0.7218
	≥65	36 (64.3)	105 (59.7)		50 (53.8)	48 (63.6)		134 (59.6)	2 (100)		127 (60.8)	9 (56.2)	
Sex	F	9 (16.1)	30 (17.1)	0.8652	17 (18.3)	20 (15.2)	0.5331	38 (16.9)	0	1*	33 (15.8)	4 (25.0)	0.3083*
	M	47 (83.9)	146 (82.9)		76 (81.7)	112 (84.8)		187 (83.1)	2 (100)		176 (84.2)	12 (75.0)	
Smoke	No	3 (5.5)	34 (19.3)	**0.0144**	13 (14.0)	24 (18.3)	0.3885	37 (16.5)	0	1*	32 (15.4)	5 (31.3)	0.1519*
	Yes	52 (94.5)	142 (80.7)		80 (86.0)	107 (81.7)		187 (83.5)	2 (100)		176 (84.6)	11 (68.7)	
Resection	Lob/Bilob	45 (80.4)	143 (81.3)	0.882	74 (79.6)	109 (82.6)	0.5688	183 (81.3)	2 (100)	1*	170 (81.3)	13 (81.3)	1*
	other	11 (19.6)	33 (18.7)		19 (20.4)	23 (17.4)		42 (18.7)	0		39 (18.7)	3 (18.7)	
Histology	Squamous	8 (14.3)	25 (14.2)	0.6477	10 (10.8)	21 (15.9)	0.2691	31 (13.8)	0	1*	180 (86.1)	14 (87.5)	1*
	Other	48 (85.7)	151 (85.8)		83 (89.2)	111 (84.1)		194 (86.2)	0		29 (13.9)	2 (12.5)	
		LCDS		pvalue	LCPN		pvalue	LCHR		pvalue	LCPC		pvalue
		0	>0		0	>0		0	>0		0	>0	
Age	<65	85 (42.9)	6 (21.4)	**0.0299**	66 (41.0)	24 (37.5)	0.6294	76 (38.6)	15 (50.0)	0.2344	67 (39.4)	24 (43.6)	0.579
	≥65	113 (57.1)	22 (78.6)		95 (59.0)	40 (62.5)		121 (61.4)	15 (50.0)		103 (60.6)	31 (56.4)	

Sex	F	33 (16.7)	4 (14.3)	1*	27 (16.8)	10 (15.6)	0.8344	29 (14.7)	9 (30.0)	**0.0368**	30 (17.7)	8 (14.6)	0.5936
	M	165 (8.33)	24 (85.7)		134 (83.2)	54 (84.4)		168 (85.3)	21 (70.0)		140 (82.3)	47 (85.4)	
Smoke	No	35 (17.7)	2 (7.4)	0.2678*	25 (15.69	12 (18.8)	0.5694	30 (15.2)	7 (24.1)	0.2792*	32 (18.9)	5 (9.1)	0.0877
	Yes	163 (82.3)	25 (92.6)		135 (84.4)	52 (81.2)		167 (84.8)	22 (75.9)		137 (81.1)	50 (90.9)	
Resection	Lob/Bilob	162 (81.8)	22 (78.6)	0.6793	128 (79.5)	55 (85.9)	0.2638	160 (81.2)	25 (83.3)	0.7811	140 (82.4)	43 (78.2)	0.4901
	other	36 (18.2)	6 (21.4)		33 (20.5)	9 (14.1)		37 (18.8)	5 (16.7)		30 (17.6)	12 (21.8)	
Histology	Squamous	26 (13.1)	5 (17.9)	0.5555*	18 (11.2)	13 (20.3)	0.0730	28 (14.2)	3 (10.0)0	0.7756	21 (12.4)	8 (14.6)	0.6732
	Other	172 (86.9)	23 (82.1)		143 (88.8)	51 (79.7)		169 (85.8)	27 (90.0)		149 (87.6)	47 (85.4)	
		LCPA		pvalue	LCPO		pvalue	LCPM					
		0	>0		0	>0		0	>0				
Age	<65	63 (41.2)	28 (38.9)	0.7443	57 (43.9)	26 (38.2)	0.4474	75 (40.3)	16 (34.8)	0.4908			
	≥65	90 (58.8)	44 (61.1)		73 (56.1)	42 (61.8)		111 (59.7)	30 (65.2)				
Sex	F	21 (13.7)	16 (22.2)	0.1087	22 (16.9)	9 (13.2)	0.4977	29 (15.6)	10 (21.7)	0.3181			
	M	132 (86.3)	56 (77.8)		108 (83.1)	59 (86.8)		157 (84.4)	36 (78.3)				
Smoke	No	24 (15.7)	13 (18.3)	0.6227	20 (15.4)	11 (16.4)	0.8503	27 (14.5)	10 (22.2)	0.2060			
	Yes	129 (84.3)	58 (81.7)		110 (84.6)	56 (83.6)		159 (85.5)	35 (77.8)				
Resection	Lob/Bilob	129 (84.3)	55 (76.4)	0.1509	109 (83.9)	53 (77.9)	0.3063	153 (82.3)	35 (76.1)	0.3391			
	other	24 (15.7)	17 (23.6)		21 (16.1)	15 (22.1)		33 (17.7)	11 (23.9)				

Histology	Squamous	20 (13.1)	10 (13.9)	0.8665	13 (10.0)	14 (20.6)	**0.0392**	29 (15.6)	4 (8.7)	0.2306			
	Other	133 (86.9)	62 (86.1)		117 (90.0)	54 (79.4)		157 (84.4)	42 (91.3)				

LCDY – Dyspnoea
LCCO – Coughing
LCHA – Haemoptysis
LCSM – Sore mouth
LCDS – Dysphagia
LCPN – Peripheral neuropathy
LCHR – Alopecia
LCPC – Pain in chest
LCPA – Pain in arm or shoulder
LCPO – Pain in other parts
LCPM – Pain medication use

Supplementary Table 5. Univariate analysis of clinical and patient-reported variables associated with relapse

Relapse	No Relapse (N=197)	Relapse (N=35)	p-value
Age			**0.0003**
<65	87 (44.2)	4 (11.4)	
≥65	110 (55.8)	31 (88.6)	
Sex			0.2992
F	31 (15.7)	8 (22.9)	
M	166 (84.3)	27 (77.1)	
Smoker			0.7617
No	32 (16.2)	5 (14.3)	
Yes	164 (83.2)	30 (85.7)	
Resection			0.8655
Lobectomy/Bilobectomy	160 (81.2)	28 (80.0)	
Segmentectomy/Wedge resection	37 (18.8)	7 (20.0)	
Histology			0.4320
Squamous Cell Carcinoma	30 (15.2)	3 (8.6)	
Other	167 (84.8)	32 (91.4)	
QL2			**0.0399**
< 66.7	99 (50.3)	11 (31.4)	
≥ 66.7	98 (49.7)	24 (68.6)	
FA			0.0880
< 22.2	104 (52.8)	13 (37.1)	
≥ 22.2	93 (47.2)	22 (62.9)	
DY			**0.0059**
0	80 (40.6)	23 (65.7)	

> 0	117 (59.4)	12 (34.3)	

QL2 – Global health status

FA – Fatigue

DY – Dyspnea

Supplementary Table 6. Sensitivity analyses of patient-reported outcome domains modeled as continuous variables

Endpoint	Parameter	Bootstrap median HR/sHR (95% CI)*
Recurrence	Age ≥65 years	6.42 (3.50–20.53)
	QL2, per 10-point increase	1.01 (0.89–1.40)
	FA, per 10-point increase	1.21 (1.02–1.40)
	DY, per 10-point increase	0.81 (0.62–0.95)
Overall survival	Age ≥65 years	4.48 (2.14–18.68)
	FA, per 10-point increase	1.29 (1.07–1.67)
	DY, per 10-point increase	0.80 (0.50–1.02)

*Estimates and confidence intervals derive from sensitivity analyses conducted using Fine–Gray models for recurrence and Firth-penalized Cox models for overall survival, with PRO variables modeled continuously per 10-point increase and internally validated by bootstrap.

Supplementary Table 7. Univariate analysis of clinical variables and patient-reported outcomes for overall survival (OS)

Variable	OS No Death (N=217)	OS Death (N=15)	p-value
Age			0.0337
<65	89 (41.0)	2 (13.3)	
≥65	128 (59.0)	13 (86.7)	
Sex			1.0000
Female	37 (17.1)	2 (13.3)	
Male	180 (82.9)	13 (86.7)	
Smoking status			1.0000
No	35 (16.2)	2 (13.3)	
Yes	181 (83.8)	13 (86.7)	
Resection type			1.0000
Lobectomy/Bilobectomy	176 (81.1)	12 (80.0)	
Segmentectomy/ Wedge resection	41 (18.9)	3 (20.0)	

Histology			1.0000
Squamous cell carcinoma	31 (14.5)	2 (11.1)	
Other	186 (85.5)	13 (88.9)	
QL2			0.5521
<66.7	104 (47.9)	6 (40.0)	
≥66.7	113 (52.1)	9 (60.0)	
Fatigue (FA)			0.1709
<22.2	112 (51.6)	5 (33.3)	
≥22.2	105 (48.4)	10 (66.7)	
Dyspnea (DY)			0.0727
0	93 (42.9)	10 (66.7)	
>0	124 (57.1)	5 (33.3)	

Supplementary Table 8. Multivariable Firth-penalized Cox regression model for overall survival (OS)

Variable	**Primary model HR (95% CI)***	**Bootstrap median HR (95% CI)****
Age ≥65 years	4.90 (1.19–20.05)	4.48 (2.14–18.68)
Fatigue ≥22.2	2.94 (0.96–9.02)	2.88 (1.38–7.31)
Dyspnea >0	0.26 (0.09–0.81)	0.27 (0.10–0.59)
Model discrimination		
C-index	0.73 (0.58–0.88)	0.73 (0.64–0.88)

*Primary estimates were derived from the multivariable Firth-penalized Cox proportional hazards model fitted on the original dataset. **Internal validation estimates were derived from 1,000 non-parametric bootstrap resamples (median HR and 2.5th–97.5th percentile CI). CI, confidence interval; HR, hazard ratio.

Supplementary Table 9. Proportional-hazards diagnostics

Endpoint	**Predictor**	**P value***
Recurrence	Age	0.633
	QL2	0.897
	FA	0.648

	DY	0.763
Overall survival	Age	0.242
	FA	0.198
	DY	0.800

*Proportionality of hazards was formally assessed using time-dependent interaction terms for each covariate. All P values >0.05 indicate no significant violation of the proportional-hazards assumption.

Supplementary Table 10. Incremental prognostic analysis using the Akaike Information Criterion (nested models)

Endpoint	Variables	AIC
Recurrence	Age (baseline)	342.852
	Age + FA	342.077
	Age + QL2	338.911
	Age + DY	337.257
	Age + DY + FA	330.921
	Age + DY + QL2	336.770
	Age + QL2 + FA	333.605
	Age + QL2 + FA + DY (full)	327.511
Overall survival	Age (baseline)	141.927
	Age + FA	141.243
	Age + DY	139.150
	Age + DY + FA (full)	136.039

Lower AIC values indicate better relative model fit.

Supplementary Table 11. Longitudinal patient-reported outcome trajectories, questionnaire availability, compiled values, and median scores across postoperative follow-up

Timepoint	PRO domain	Questionnaires collected	Compiled values	Median
6m	QL2	253	249	75
1y		236	232	75

18m		194	189	83.33
2y		181	177	75
3y		168	163	75
4y		131	127	75
5y		108	104	75
6y		81	79	75
7y		75	74	75
6m	FA	253	253	22.22
1y		236	235	22.22
18m		194	193	11.11
2y		181	178	22.22
3y		168	168	22.22
4y		131	131	22.22
5y		108	108	11.11
6y		81	81	22.22
7y		75	75	11.11
6m	DY	253	253	33.33
1y		236	235	33.33
18m		194	193	0
2y		181	179	33.33
3y		168	166	33.33
4y		131	130	16.67
5y		108	107	33.33
6y		81	81	33.33
7y		75	75	33.33

QL2, global health status; FA, fatigue; DY, dyspnea.

Supplementary Table 12. Absolute recurrence risks by patient-reported outcome category at 3 and 5 years

PRO category	3-year absolute recurrence risk, % (95% CI)	5-year absolute recurrence risk, % (95% CI)
QL2 <66.7	4.9 (1.8–10.4)	10.7 (5.4–18.0)

QL2 ≥66.7	12.1 (6.9–18.8)	18.1 (11.5–26.0)
DY = 0	14.1 (8.1–21.7)	20.0 (12.6–28.7)
DY >0	4.2 (1.6–9.0)	10.1 (5.3–16.7)
FA <22.2	6.3 (2.8–11.9)	9.5 (4.8–16.1)
FA ≥22.2	11.2 (6.1–18.1)	20.0 (12.7–28.4)

Absolute recurrence risks were estimated using cumulative incidence functions with death without recurrence treated as a competing event. QL2, global health status; DY, dyspnea; FA, fatigue.