

Table S1 Baseline characteristics according to stage migration status

Variable	No relevant stage migration (n=651)	Relevant upstaging (n=96)	Relevant downstaging (n=62)	P value
Age at diagnosis (years)				0.29
Mean ± SD	66±9.0	66±8.8	68±8.0	
Median [range]	67 [18–88]	67 [38–84]	70 [48–80]	
Gender				0.84
Male	321 [49]	50 [52]	32 [52]	
Female	330 [51]	46 [48]	30 [48]	
ECOG PS				0.11
0	429 [66]	63 [66]	41 [66]	
1	188 [29]	31 [32]	13 [21]	
2 or more	26 [4]	2 [2]	6 [10]	
Unknown	8 [1]	0 [0]	2 [3]	
Smoking status				0.58
Current	233 [36]	33 [34]	24 [39]	
Former	351 [54]	52 [54]	32 [51]	
Never	55 [8]	10 [11]	3 [5]	
Unknown	12 [2]	1 [1]	3 [5]	
Morphology after resection				0.22
Adenocarcinoma	361 [55]	65 [68]	35 [56]	
Squamous cell carcinoma	212 [33]	23 [24]	18 [29]	
Large cell carcinoma	13 [2]	2 [2]	4 [7]	
NSCLC NOS	17 [3]	2 [2]	1 [1]	
Other or unknown*	48 [7]	4 [4]	4 [7]	
Clinical stage at baseline				<0.001
I	370 [57]	96 [100]	0 [0]	
II	170 [26]	0 [0]	53 [85]	
III	111 [17]	0 [0]	9 [15]	
Tumor size clinical stage I				<0.001
≤1 cm	46 [12]	4 [4]	NA	
>1 to ≤3 cm	259 [70]	46 [48]	NA	
>3 to ≤4 cm	65 [18]	46 [48]	NA	
Operative procedure				0.62
Wedge or segmental resection	43 [7]	4 [4]	1 [2]	
Lobectomy	530 [81]	82 [86]	58 [93]	
Bilobectomy	28 [4]	4 [4]	2 [3]	
Pneumonectomy	48 [7]	6 [6]	1 [2]	
Other	2 [1]	0 [0]	0 [0]	
Adjuvant treatment				<0.001
Adjuvant	150 [23]	48 [50]	1 [2]	
No adjuvant treatment	501 [77]	48 [50]	61 [98]	
Type of adjuvant treatment				0.92
Chemotherapy	116 [77]	40 [83]	1 [100]	
Chemo- and radiotherapy	20 [13]	6 [13]	0 [0]	
Radiotherapy	11 [7]	2 [4]	0 [0]	
Other	3 [2]	0 [0]	0 [0]	
Charlson comorbidity index				0.56
No comorbidity (0)	16 [2]	2 [2]	0 [0]	
Mild (1–2)	150 [23]	27 [28]	14 [23]	
Moderate (3–4)	267 [41]	31 [32]	28 [45]	
Severe (≥5)	218 [34]	36 [38]	20 [32]	

Data are presented as n [%] unless otherwise specified. *, morphology after resection was only missing in 1 case (~0%). Baseline characteristics were categorized by migration status. P values were evaluated using Chi-squared tests for categorical variables and a Student's *t* test for continuous variables. SD, standard deviation; ECOG PS, Eastern Cooperative Oncology Group performance score; NSCLC NOS, non-small cell lung cancer not otherwise specified.

Table S2 Migration status in the total group of resected NSCLC patients

Clinical stage before resection	Pathological stage after resection								Total
	0/occult	IA	IB	IIA	IIB	IIIA	IIIB	IVA	
IA	6	218	78	5	32	13	0	3	355
IB	1	18	45	5	33	7	1	1	111
IIA	0	4	9	18	6	6	1	1	45
IIB	0	19	21	15	84	33	7	0	179
IIIA	0	3	6	3	24	63	16	2	117
IIIB	0	0	0	0	0	0	2	0	2
Total	7	262	159	46	179	122	27	7	809

Migration status in the total study cohort. Values accentuated in red represent upstaging; values in the red compartment represent relevant upstaging. Values accentuated in green represent downstaging; values in the green compartment represent relevant downstaging. Values accentuated in blue represent equal staging. NSCLC, non-small cell lung cancer.

Table S3 Etiological factors of relevant upstaging and downstaging

A. Total population

Etiology	Relevant upstaging	Relevant downstaging	Stage migration total
Total	96	62	158
Tumor size	22 [23]	17 [27]	39 [25]
Lymph node involvement	51 [53]	22 [36]	73 [46]
Thoracic wall invasion	1 [1]	0	1 [1]
Parietal pleura invasion	4 [4]	0	4 [3]
At least one satellite lesion	8 [8]	18 [29]	26 [16]
Combination	10 [11]	5 [8]	15 [9]

B. Present upfront pathological NSCLC diagnosis

Etiology	Relevant upstaging	Relevant downstaging	Stage migration total
Total	65	40	105
Tumor size	15 [23]	11 [27]	26 [25]
Lymph node involvement	37 [57]	12 [30]	49 [47]
Thoracic wall invasion	1 [2]	0	1 [1]
Parietal pleura invasion	2 [3]	0	2 [2]
At least one satellite lesion	3 [4]	13 [33]	16 [15]
Combination	7 [11]	4 [10]	11 [10]

Data are presented as n [%]. (A) Etiological factors regarding stage migration in the total study population. (B) Etiological factors regarding stage migration in patients with present upfront NSCLC confirmation. Combinations were formed by tumor size and lymph node involvement [1] or by parietal pleura or thoracic wall invasion or at least one satellite lesion [2]. NSCLC, non-small cell lung cancer.

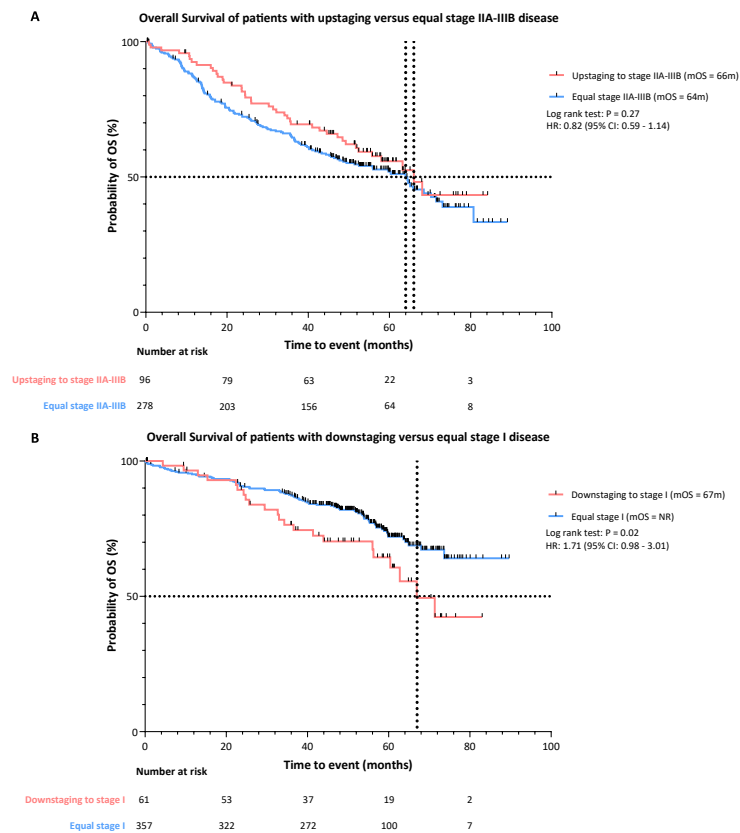


Figure S1 Survival rates in patients with relevant stage migration versus equal staging. (A) OS rates in patients with relevant upstaging versus equal stage II–IIIIB disease. (B) OS rates in patients with relevant downstaging versus equal stage I disease. Kaplan-Meier curves were generated to display OS rates with log-rank tests. Estimates in Kaplan-Meier graphics derived from Cox regression were presented as HR and 95% CI. CI, confidence interval; HR, hazard ratio; NR, not reached; OS, overall survival; mOS, median overall survival.