ORIGINAL ARTICLE

The International Association for the Study of Lung Cancer Lung Cancer Staging Project: Proposals for the Revision of the Clinical and Pathologic Staging of Small Cell Lung Cancer in the Forthcoming Eighth Edition of the TNM Classification for Lung Cancer

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ABSTRACT

Introduction: Small cell lung cancer (SCLC) is commonly classified as either limited or extensive, but the Union for International Cancer Control *TNM Classification of Malignant Tumours* seventh edition (2009) recommended tumor, node, and metastasis (TNM) staging based on analysis of the International Association for the Study of Lung Cancer (IASLC) database.

Methods: Survival analyses were performed for clinically and pathologically staged patients presenting with SCLC from 1999 through 2010. Prognosis was compared in relation to the TNM seventh edition staging to serve as validation and analyzed in relation to proposed changes to the T descriptors found in the eighth edition.

Results: There were 5002 patients: 4848 patients with clinical and 582 with pathological stages. Among these, 428 had both. Survival differences were confirmed for T and N categories and maintained in relation to proposed revisions to T descriptors for seventh edition TNM categories and proposed changes in the eighth edition. There were also survival differences, notably at 12 months, in patients with brain-only single-site metastasis (SSM) compared to SSM at other sites, and SSM without a pleural effusion showed a better prognosis than other patients in the M1b category.

Conclusion: We confirm the prognostic value of clinical and pathological TNM staging in patients with SCLC, and recommend continued usage for SCLC in relation to proposed changes to T, N, and M descriptors for NSCLC in the eighth edition. However, for M descriptors, it remains uncertain whether survival differences in patients with SSM in the brain simply reflect better treatment options rather than better survival based on anatomic extent of disease.

Keywords: Lung cancer; Lung cancer staging; Small cell lung cancer; TNM classification

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Introduction

Lung cancer remains the leading cause of cancer related mortality in the Western world.[1] Small cell lung cancer (SCLC) continues to represent around 15% of lung cancers, with the incidence declining in men but continuing to rise in women.[2] Despite recent advances in patient management for non–small cell carcinomas, management has remained largely unchanged in the past decade for SCLC, and survival rates for both localized and advanced disease have also remained relatively constant.

Staging remains a key factor in both the prognostication and management of patients with lung cancer, both for non–small cell and small cell types. Early staging systems for SCLC divided cases into two subgroups: limited and extensive.[3,4] Limited disease was characterized by tumors confined to one hemithorax, although local extension and ipsilateral or supraclavicular nodes could also be present if they could be encompassed in the same radiation portal as the primary tumor. All other cases were classified as extensive disease. This remained the predominant method of staging, independent of the rare cases when surgical resection could be undertaken, although the tumor, node, and metastasis (TNM) classification was also applicable to SCLC. However, when the seventh edition of the TNM classification was published in 2009, it was recommended to favor the TNM classification for staging of patients with SCLC, and to stratify by stages I, II, and III when designing clinical trials of early stage disease.[5] This was based on a cohort of 12,620 eligible cases with small cell histology, of whom 8088 had TNM staging available for analysis, and of whom there were 3215 with full clinical staging and 128 with pathological staging.[5] This cohort was a subset of an overall database created by the International Association to the Study of Lung Cancer (IASLC) that contained 100,869 patients.[6]

Despite the magnitude of the database, not all descriptors could be validated.[7] The limitations of the retrospective database prompted the IASLC to launch a call for the collection of new data.[8] The call resulted in a new database of 77,156 evaluable patients diagnosed with lung cancer between 1999 and 2010.[9] This new database is being used to inform the eighth edition of the TNM classification of lung cancer, which is scheduled to be published in 2016, and the purpose of this paper is to report on the analysis of the clinical and pathological TNM staging for SCLC and propose refinements for the upcoming eighth revision of the TNM staging system in relation to this particular subgroup of tumors.[9–12]

Methods

The database upon which analyses herein are based was originally created by the IASLC to inform revisions for the Union for International Cancer Control *TNM Classification of Malignant Tumours* seventh edition staging manual for lung cancer, with additional cases that had an initial presentation between 1999 and the end of 2010. These latter cases form the basis of this study. Cases analyzed for survival according to seventh edition stage categories were required to have adequate TNM staging information at baseline and adequate follow-up for survival. Analyses focusing on proposed changes for the eighth edition were applied to the subset of SCLC cases that had sufficient descriptors to reclassify according to the proposed eighth edition T categories. This required, at minimum, detail on the size of the primary tumor (for cases T1–T3) and the anatomical basis for classification of T2 to T4 cases.

Overall survival was defined as the time between date of entry (e.g., date of diagnosis for clinically staged cases, date of surgery for pathologically staged cases) and the date of death. Patients alive at last contact were censored at the last contact date. Survival was estimated using the Kaplan–Meier method, with an overall p value based on the log-rank test. Formal comparisons between adjacent stage categories were generated via Cox proportional hazards regression. An ordered log-rank test was applied to proposed eighth edition overall stage categories.[13] This is a global test to evaluate against the possibility that categories are ordered differently than expected. All analyses were performed using SAS software (version 9.4; SAS Institute, Inc, Cary, NC).

Table 1. Source of Staging and Type of Database Submission for the 5002 Cases in the Small Cell Lung Cancer Database

	Available TNM Staging			Geographic Region				
Type of Database Submission	Clinical TNM	Pathological TNM	Clinical and Pathological TNM	Asia	Australia	Europe	North/South America	Total
Consortium	1688	97	417	1400	0	802	0	2202
Registry	2645	46	7	0	15	2683	0	2698
Series	87	11	4	31	9	31	31	102
Total	4420	154	428	1431	24	3516	31	5002

TNM, tumor, node, and metastasis.

Table 2. Type of Management by Clinical Stage, from the Small Cell Lung Cancer Clinically Staged Database

	Treatment				
Clinical Stage (7th ed)	Surgery (%)	Chemotherapy/Radiotherapy, Nonsurgical (%)	No Treatment (%)	Missing Rx Data, Nonsurgical (%)	Total
IA	273 (100)	0	0	0	273
IB	81 (93)	5 (6)	1 (1)	0	87
IIA	60 (95)	2 (3)	0	1 (2)	63
IIB	35 (32)	48 (44)	0	27 (25)	110
IIIA	84 (17)	290 (57)	2 (<1)	128 (26)	504
IIIB	14 (2)	602 (70)	5 (<1)	245 (28)	866
IV	30 (1)	1984 (67)	38 (1)	893 (31)	2945
Total	577 (12)	2931 (60)	46 (1)	1294 (27)	4848

Rx, prescription.

Results

Population

In total, there were 5002 retrospective cases, of which 4848 were clinically staged, 582 were pathologically staged, and 428 both clinically and pathologically staged (Table 1). All patients presented between 1999 and 2010; there was no overlap with the database collected to inform the recommendations for the seventh edition. The majority of cases were from multiple-site consortia and registry databases, primarily from Asia and Europe. Among the 4848 patients considered in the analyses of clinical stage, 577 (12%) were

Table 3. Formal Comparisons between T and N Anatomical Categories, Seventh Edition and Proposed Eighth Edition

Comparison	Unadjusted HR	*p* Value	Adjusted HR[a]	*p* Value
Clinical T categories				
T2 vs. T1	1.64	0.0002	1.53	0.0016
T3 vs. T2	2.25	<0.0001	1.51	0.0046
T4 vs. T3	1.29	0.0001	1.21	0.0049
Pathological T categories				
T2 vs. T1	1.40	0.0159	—	—
T3 vs. T2	1.16	0.4541	—	—
T4 vs. T3	2.59	0.0012	—	—
Clinical N categories				
N1 vs. N0	1.55	<0.0001	1.13	0.27
N2 vs. N1	1.48	0.0003	1.15	0.20
N3 vs. N2	1.24	0.0013	1.11	0.12
Clinical N categories, nonsurgical cases only				
N1 vs. N0	0.89	0.39	—	—
N2 vs. N1	1.21	0.13	—	—
N3 vs. N2	1.14	0.06	—	—
Clinical N categories, surgical cases only				
N1 vs. N0	1.76	0.0031	—	—
N2 vs. N1	1.34	0.19	—	—
N3 vs. N2	1.08	0.88	—	—
Proposed 8th edition				
cT categories				
T2 vs. T1	1.51	0.05	1.35	0.16
T3 vs. T2	1.62	0.07	1.43	0.18
T4 vs. T3	2.01	0.0005	1.54	0.04
pT categories				
T2 vs. T1	1.48	0.0061	—	—
T3 vs. T2	0.78	0.2431	—	—
T4 vs. T3	3.18	<0.0001	—	—

[a]Adjusted for surgery.
HR, hazard ratio.

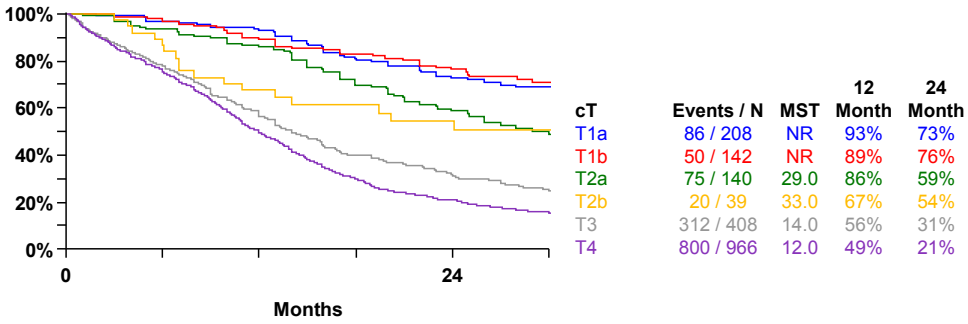


Figure 1. Survival according to clinical T categories, seventh edition. c, clinical; N, number of cases; MST, median survival time.

surgically managed, and the majority of nonsurgically managed patients (among those for whom there was adequate information on both systemic and radiation therapy) received chemotherapy with or without radiation therapy (Table 2). A small minority (1%) received best supportive care only. Among 2931 nonsurgical patients known to have received systemic therapy or radiation, the details of therapy were obtainable in just 309 records. Among the 309, 103 patients received both systemic and radiation therapy, 205 patients received systemic therapy only, and one received radiation only.

Cases originating from the electronic data capture database included information regarding the staging method used to obtain clinical stage. Among 380 clinically staged cases with this information, 376 were staged using standard radiology along with at least one other method. One hundred fifty-eight patients (41%) received a bone scan, 373 patients (98%) received a computed tomography scan of the upper chest or abdomen along with other methods, 89 patients (23%) received a positron emission tomography or computed tomography scan, 357 patients (94%) underwent bronchoscopy, and 30 patients (8%) underwent mediastinoscopy. One hundred six patients (26%) underwent all of these except for a positron emission tomography scan and mediastinoscopy.

The median follow-up time for patients that were alive at last contact was 27 months for the clinically staged group and 61 months for the pathologically staged group.

T Component

Application of the T component categories from the seventh edition, independent of nodal status, showed significantly better survival for clinical T1 compared to T2, T2 to T3, and T3 to T4 (Table 3). The significance of these comparisons persisted after adjusting for surgical management versus not adjusting for surgical management. There seemed to be little difference between T1a and T1b and T2a and T2b (Fig. 1). Similar trends were seen in cases clinically staged but without resection (data not shown), as well as in pathological staging, though there was no difference between pT3 and pT2 (Supplementary Fig. 1).

N Component

Application of the N component categories from the seventh edition, independent of T category, showed better survival trends for clinical N0 through to N3 (Table 3; Fig. 2); however, the differences were not statistically significant after adjusting for surgical management. There was evidence of an interaction

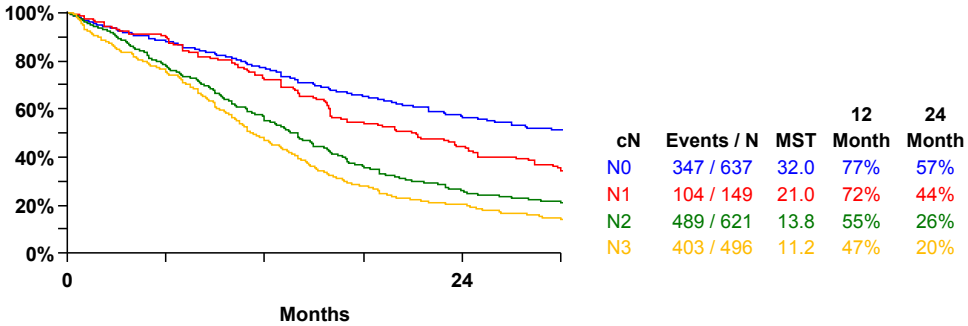
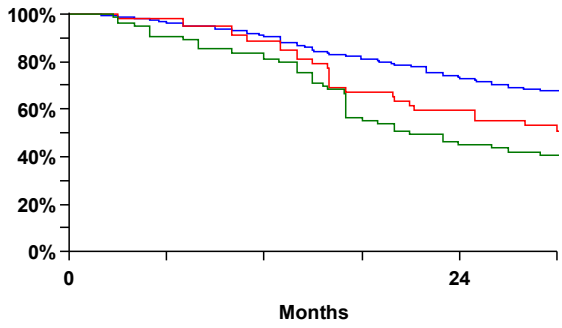


Figure 2. Survival according to clinical N categories, seventh edition. c, clinical; N, number of cases; MST, median survival time.



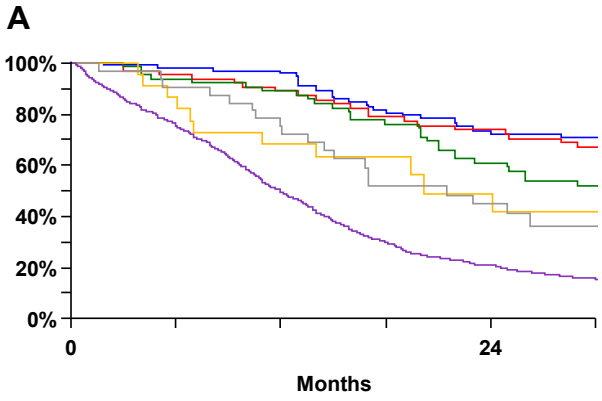
cN	Events / N	MST	12 Month	24 Month
N0	161 / 405	NR	91%	73%
N1	33 / 60	33.0	89%	59%
N2	51 / 76	21.0	81%	45%

Figure 3. Survival according to clinical N categories, surgically resected cases. Note that six cases with N3 disease were omitted. c, clinical; N, number of cases; MST, median survival time.

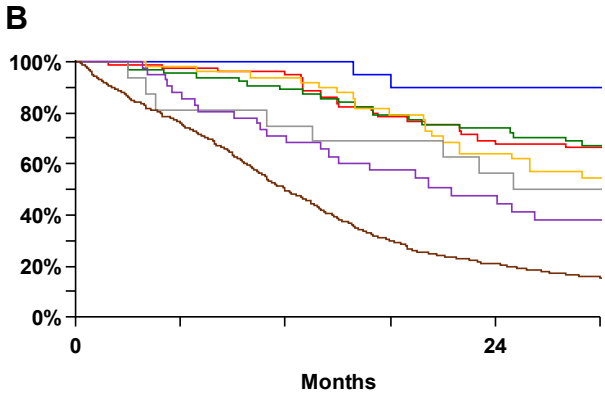
between treatment (surgery versus no surgery) and clinical N categories, for its impact on survival. In cases that underwent surgery, independent of T category, there was a significant difference between N0 patients and those with node-positive disease for both clinical and pathological staging (Fig. 3; Supplementary Fig. 2). However, in cases that were nonsurgically managed, these survival trends were not apparent (Supplementary Fig. 3). There were insufficient data to subdivide N descriptors further in relation to, for example, the relevance of ipsilateral supraclavicular versus contralateral mediastinal nodal involvement in N3 disease.

Assessment of Proposed Changes to T Categories for NSCLC

Analyses for the eighth edition of cases with NSCLC have proposed changes to criteria for various T categories,[12] these being endobronchial location regardless of distance from carina becoming uniformly T2, with size >4 cm being T2b and with size >5 cm becoming T3. Those with size >7 cm become T4. Tumors with

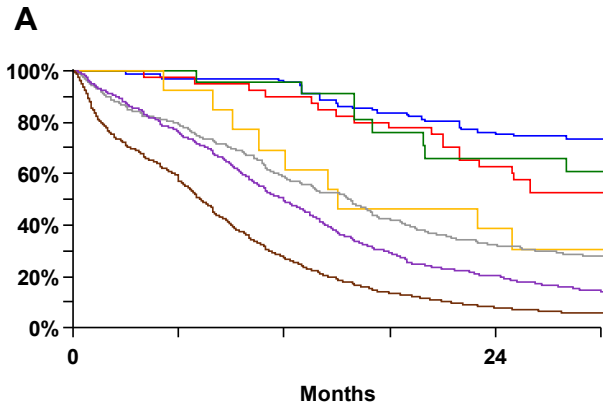


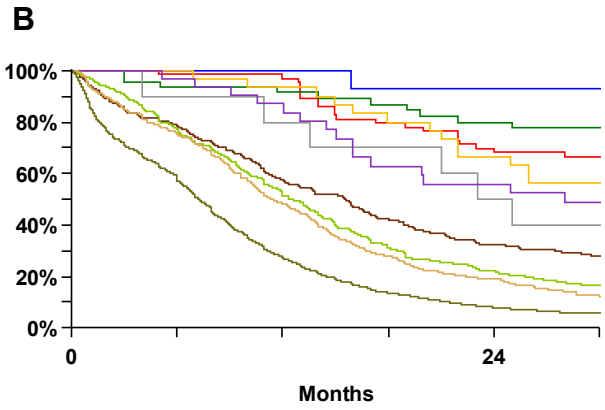
cT 7th Ed.	Events / N	MST	12 Month	24 Month
T1a	39 / 104	NR	96%	72%
T1b	25 / 68	NR	89%	74%
T2a	34 / 68	33.0	89%	61%
T2b	12 / 24	20.2	68%	49%
T3	21 / 35	21.5	75%	45%
T4	800 / 966	12.0	49%	21%



cT Proposed	Events / N	MST	12 Month	24 Month
T1a	5 / 20	NR	100%	90%
T1b	34 / 84	NR	95%	68%
T1c	25 / 68	NR	89%	74%
T2a	26 / 53	33.0	94%	64%
T2b	8 / 17	NR	75%	56%
T3	26 / 44	21.5	71%	48%
T4	807 / 979	12.0	50%	21%

Figure 4. Survival according to (*A*) seventh edition clinical T categories and (*B*) proposed eighth edition clinical T categories in the subset of cases where tumor descriptor data were sufficient to classify according to the proposed eighth edition. c, clinical; N, number of cases; MST, median survival time.





cTNM 7th Ed.	Events / N	MST	12 Month	24 Month
IA	45 / 129	NR	95%	75%
IB	22 / 42	32.4	90%	63%
IIA	10 / 28	41.0	96%	66%
IIB	10 / 14	15.0	69%	38%
IIIA	203 / 270	15.7	59%	32%
IIIB	641 / 782	12.0	49%	20%
IV	2620 / 2926	7.3	27%	8%

cTNM Proposed	Events / N	MST	12 Month	24 Month
IA1	3 / 14	NR	100%	93%
IA2	27 / 67	NR	97%	68%
IA3	15 / 48	NR	91%	80%
IB	16 / 32	33.0	93%	67%
IIA	6 / 10	24.1	80%	50%
IIB	17 / 38	28.0	87%	56%
IIIA	191 / 254	15.6	58%	32%
IIIB	326 / 402	12.6	52%	22%
IIIC	330 / 400	11.4	48%	19%
IV	2620 / 2926	7.3	27%	8%

Figure 5. Survival according to (*A*) seventh edition clinical TNM stages and (*B*) proposed eighth edition clinical TNM stages in cases where tumor descriptor data were sufficient to classify according to the proposed eighth edition. ed., edition; N, number of cases; MST, median survival time.

diaphragmatic involvement also become T4. There is additional subdivision within the T1 according to size, with cut points at 1-cm increments (1 and 2 cm), resulting in three groups within the T1. Comparison between T categories in the seventh edition compared to proposed changes in the eighth revision show similar discrimination between categories, although greater discrimination between T3 and T4 (Fig. 4*A* and *B*).

Assessment of Proposed Changes to TNM Stage

Revisions to TNM stage categories have been proposed based on the proposed revisions to T, N, and M categories.[10–12] For M0 cases, stage I is subdivided into three categories based on the 1-cm size increments of the T1N0 category. Cases in T1 and T2 categories with N1 disease are amalgamated into IIB. The T3N2 move to IIIB, and a new category, IIIC, contains the N3 cases with T3 or T4 disease. Stage IV is subdivided based upon whether or not there is distant disease at multiple sites. Figure 5 shows the proposed stage groupings applied to the subset of the SCLC database that had adequate information to stage according to this proposal. A difference in prognosis is apparent between stages II and III, which is not seen in the analysis of the same dataset by seventh edition staging (Table 4). In this database, some stage categories are underrepresented in SCLC. It is unclear whether the subdivisions of stages I and II would result in different prognoses in a larger database. Differences between stage groupings were significant between IIIA and IIB and between IIIB and IIIA (Table 4). After adjusting for surgical resection versus no surgical resection, these differences were no longer significant. However, the ordered log-rank test was significant for the trend of decreasing survival with higher stage ($p < 0.0001$).

Assessment of Pathological T2 Descriptors—Visceral Pleural Invasion

The seventh edition of the TNM classification recommended assessment of the depth of visceral pleural invasion. Cases were categorized as PL0 (i.e., no invasion or invasion beneath the elastic layer), PL1 (i.e., invasion of the visceral pleura beyond the elastic layer), and PL2 (i.e., invasion through the visceral pleura with extension

Table 4. Formal Comparisons between Clinical TNM Stages (Seventh Edition and Proposed Eighth Edition)

Comparison	Unadjusted HR	*p* Value	Adjusted HR[a]	Adjusted *p* Value
Clinical TNM stages (7th ed)				
IB vs. IA	1.67	0.05	1.49	0.13
IIA vs. IB	0.82	0.60	0.87	0.70
IIB vs. IIA	2.30	0.06	2.17	0.08
IIIA vs. IIB	1.22	0.54	0.75	0.40
IIIB vs. IIIA	1.36	<0.0001	1.23	0.01
IV vs. IIIB	1.68	<0.0001	1.68	<0.0001
Clinical TNM stages (proposed 8th ed)				
IA2 vs. IA1	2.33	0.16	2.33	0.16
IA3 vs. IA2	0.75	0.36	0.75	0.36
IB vs. IA3	1.73	0.13	1.55	0.22
IIA vs. IB	1.36	0.52	1.30	0.59
IIB vs. IIA	0.87	0.77	0.93	0.88
IIIA vs. IIB	2.11	<0.0001	1.24	0.42
IIIB vs. IIIA	1.26	0.01	1.17	0.09
IIIC vs. IIIB	1.12	0.16	1.08	0.30
IV vs. IIIC	1.61	<0.0001	1.62	<0.0001

[a]Adjusted for surgery.
HR, hazard ratio; TNM, tumor, node, metastasis.

to the visceral pleural surface), with a view to informing the eighth revision. Data show no significant difference between PL0, PL1, or PL2, independent of T category (Supplementary Fig. 4).

M Component

Analyses of patients with clinical stage M1b showed no significant difference between patients who had either a SSM or multiple site disease (Fig. 6*A*). However, when SSMs were subdivided into those with brain involvement only, there was an apparent difference between this group and other sites of SSM and multiple site disease at 12 months (36% versus 23% and 20%, respectively; Fig. 6*B*). However, this reduced at 24 months and the difference did not reach significance at either time point ($p = 0.13$, with a hazard ratio of 0.78), likely because of the small number of cases. In addition, patients with a SSM and no pleural effusion showed an improved survival when compared with patients who had either pleural effusions or multiple metastatic sites or both ($p = 0.02$, with a hazard ratio of 0.71; Fig. 6*C*). There were insufficient data to assess the prognostic significance of the presence or absence of tumor cells within pleural and pericardial effusions (N = 59 and N = 2, respectively). There were also insufficient data to assess specific sites of N3 nodal involvement (n = 34 clinical N3 cases with N3 supraclavicular versus contralateral location).

Discussion

The management of SCLC differs significantly from that of NSCLC, in that nearly all patients will not be amenable to complete resection and surgery will seldom be offered. Instead, patients are typically treated with systemic chemotherapy with or without radiation, a treatment strategy that has remained essentially unchanged over the past decade, despite the era of targeted therapy for some NSCLC subgroups. However, a significant minority of patients with SCLC are amenable to surgical resection, as evidenced by the numbers collected within this database. In this study, there were a total of 5002 patients, of whom 4848 were clinically staged, 582 were pathologically staged, and 428 both clinically and pathologically staged. This compares to numbers originally analyzed in 2007 of 3215 patients with clinical TNM staging and 128 patients with pathological TNM staging.[5] These numbers validate the earlier IASLC publication proposing the uptake of TNM staging for patients with early SCLC[5] and show that further proposed revisions to T categories for NSCLC in the eighth edition of the TNM classification can equally be applied to patients with SCLC. However, our data showed no significant survival difference in relation to visceral pleural invasion. Numbers were too small to compare the effect of visceral pleural invasion in individual T categories where significant prognostic differences between categories (i.e., PL0, PL1, and PL2) were seen in patients with NSCLC.[12]

In addition, these greater numbers showed refinements in the survival data for patients with M1b disease, with SSM patients without pleural effusions, and those with brain metastases only having a better prognosis than patients with either multiple site disease or SSM with a pleural effusion. This may reflect the ability to undertake more localized radiotherapy, not least of all

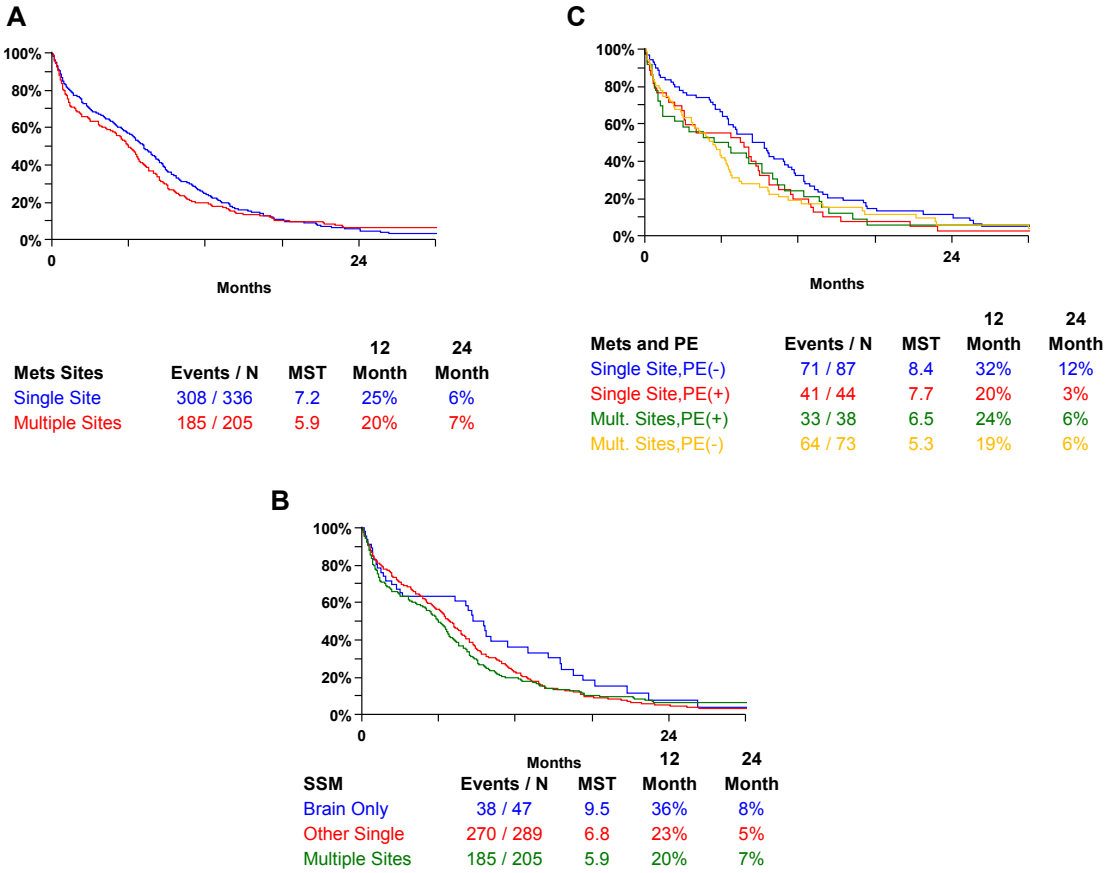


Figure 6. Evaluation of metastatic sites. (*A*) Single site metastases versus multiple sites, M1 cases. (*B*) Single-site metastases to the brain versus other sites. (*C*) Single versus multiple site metastases with or without pleural effusion. N, number of cases; MST, median survival time; PE, pleural effusion; SSM, single-site metastasis.

because the survival difference in patients with brain-only SSM is reduced at 24 months (when compared to 12 months). It remains uncertain if this should warrant a separate M1b category; this may reflect a treatment effect rather than a true survival difference based on extent of anatomic spread of disease. Nevertheless, for future revisions of the TNM staging system we recommend documenting prospectively for patients with metastases: (1) the number of extrathoracic metastatic sites; (2) the exact number and locations of metastatic organs involved; (3) the diameter as surrogate for volume of individual metastatic sites, including involved lymph nodes beyond the nodal stations shown in the IASLC lymph node map; (4) investigations performed to undertake staging; and (5) whether presentation with brain metastases was symptomatic or asymptomatic. With higher patient numbers within individual subgroups and available longer follow-up of patients, a more valid evaluation of these important questions might be possible.

Table 5. Concordance between Clinical and Pathological T Categories

T Category Concordance (M0 Cases)	Pathological T Category						Percent Agreement	
	T1A	T1B	T2A	T2B	T3	T4		
cT1A	121	5	22	0	8	1	77	69
cT1B	5	59	30	0	9	1	56	
cT2A	0	3	82	1	8	2	85	82
cT2B	0	0	2	12	4	0	67	
cT3	0	1	8	3	15	3	50	50
cT4	0	2	0	0	1	6	67	67

Seventy-one percent of cases (295/414) show agreement; 6% (25/414) are overstaged and 23% (94/414) are understaged clinically.

Table 6. Concordance between Clinical and Pathological N Categories

N Category Concordance (M0 Cases)	Pathological N Category				Percent Agreement
	N0	N1	N2	N3	
cN0	253	37	32	0	79
cN1	14	24	8	0	52
cN2	16	3	23	0	55
cN3	0	1	2	1	25

Seventy-three percent of cases (301/414) show agreement; 9% (36/414) are overstaged and 18% (77/414) are understaged clinically.

In relation to the N component, data again confirm the seventh edition recommendation for determining the N category in patients with limited disease, in particular highlighting the prognostic significance of N0 disease independent of the T component. This finding, together with the fact that survival differences in relation to the N categories were lost in nonsurgical cases independent of the T component (Supplementary Figs. 2 and 3; Supplementary Digital Content 1) highlights the importance of systematic nodal dissection in resected cases. Indeed, patients with pN2 disease have a 2-year survival rate of 37%. It also highlights the importance of confirmation of nodal disease in inoperable patients when appropriate, in order to obtain the most accurate staging data. This is emphasized by reviewing the agreement between clinical and pathological staging (Tables 5–7), with N category agreement being 73% and overall agreement being 57%, and a greater extent of clinical under- rather than over-staging. These data have not shown improvement when compared to data from the seventh TNM staging cohort,[14] and it was not possible to assess any further subdivision based on the advent of the bronchoscopic ultrasound-guided fine-needle aspiration biopsy. However, with the advent of this practice, there should be greater facility for assessment of mediastinal nodal involvement, and it will be interesting to see if agreement improves in future cohorts.

In the paper discussing proposals for the seventh revision of the TNM staging system, comments were made on the need for additional studies in relation to the importance of M1a disease—in particular, whether there was prognostic significance to the presence or absence of tumor cells within pleural effusions, and the relevance of ipsilateral supraclavicular versus contralateral mediastinal nodal involvement in patients with N3 disease. Unfortunately, there were not enough data within the cohort, even with the additional patients, to assess these areas, and there is a need for specific targeting of these pathological and clinical parameters in any future collection, especially in relation to SCLC.

We acknowledge that there are limitations to this analysis in that there are sources of bias to interpretation of these analyses. For example, 12% of patients were surgically managed—a much higher proportion than routinely seen—and only 1% of patients received best supportive care, while this is closer to 40% in routine care. Outcomes will have been biased by therapy received, and treatment administered data were available for only 11% of the nonsurgical patients. Nevertheless, we believe that the analyses herein are robust in terms of forming the basis for a TNM staging system for SCLC. As above, refinements in future data collection will hopefully obviate some of these limitations.

In conclusion, this study confirms the prognostic value of both clinical and pathologic TNM staging in patients with SCLC who have limited disease. It also supports its continued usage for SCLC in relation to proposed changes to T categories for NSCLC in the eighth edition. These data also show survival differences in patients with SSM, in that those with brain involvement only or with SSM without pleural effusion have a better prognosis than other patients in the M1b category. Although it remains uncertain whether this reflects ability to treat rather than true survival differences

Table 7. Concordance between Clinical and Pathological TNM Stage, in Cases where Both Clinical and Pathological Stage Data were Available

Stage Concordance	Pathological TNM Stage							Percent Agreement
	IA	IB	IIA	IIB	IIIA	IIIB	IV	
cIA	129	34	26	10	18	1	1	59
cIB	1	49	5	3	12	0	1	69
cIIA	6	5	24	5	7	1	0	50
cIIB	0	4	7	8	5	0	1	32
cIIIA	6	4	1	6	28	2	1	58
cIIIB	1	0	1	0	3	2	1	25
cIV	1	1	1	0	2	0	4	44

Fifty-seven percent of cases (244/428) show agreement; 12% (50/428) are overstaged and 31% (134/428) understaged clinically.

based on disease extent, we recommend that M categories for SCLC are the same as those for NSCLC: namely, M1a, M1b (single metastatic lesions in a single distant organ), and M1c (multiple lesions in a single organ or multiple lesions in multiple organs).[11] This will allow both consistency in future data collection and specific data collection that may provide greater details for patients with metastatic disease.

Appendix 1

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Supplementary Data

Note: To access the supplementary material accompanying this article, visit the online version of the *Journal of Thoracic Oncology* at www.jto.org and at http://dx.doi.org/10.1016/j.jtho.2015.10.008.

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