

The T component

IASLC new staging system in NSCLC

6th European Lung Cancer Conference
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Geneva, Switzerland

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The T component: IASLC new staging system for NSCLC
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In Compliance with UEMS/EACCME Guidelines, potential conflicts of interest or support relevant to the above presentation that might cause a bias are declared as follows:

No potential conflicts of interest to report

Timeline

7th edition

- 1996: idea
- 1998: Committee
- 1990-2000: databases
- 2001: finances, CRAB
- 2002: dataset
- 2002-2005: data registry
- 2006-2009: publications
- 2010: 7th edition

8th edition

- 2008-9: other tumours
- 2009: prospective phase & new dataset
- 2009-2013: registry of new cases (1999-2010)
- 2013-2014: data analyses
- 2015-2016: publications
- 2017: 8th edition

Database for the 8th edition

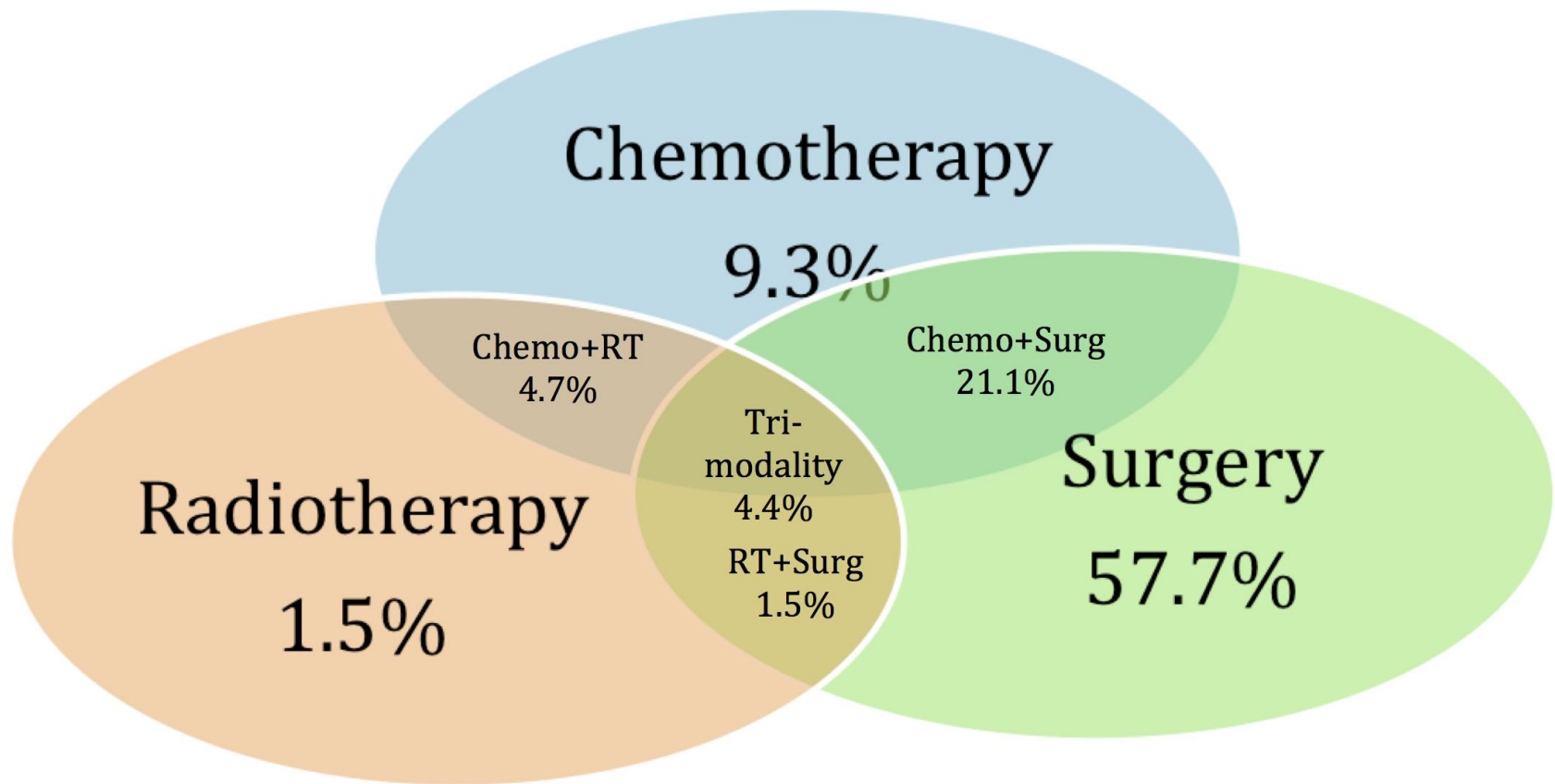
Region	Number	%
Europe	46,560	49
Asia	41,705	44
North America	4,660	5
Australia	1,593	1.7
South America	190	0.3
TOTAL	94,708	100

Data sources

Type of database	Retrospective	Prospective (EDC)	Total
Consortium	41,548	2,089	43,637
Registry	26,122		26,122
Surgical series	5,373	592	5,965
Institutional series		1,185	1,185
Institutional registries	208		208
Unknown		39	39
TOTAL	73,251	3,905	77,156

Rami-Porta R et al. J Thorac Oncol 2014; 9: 1618-1624

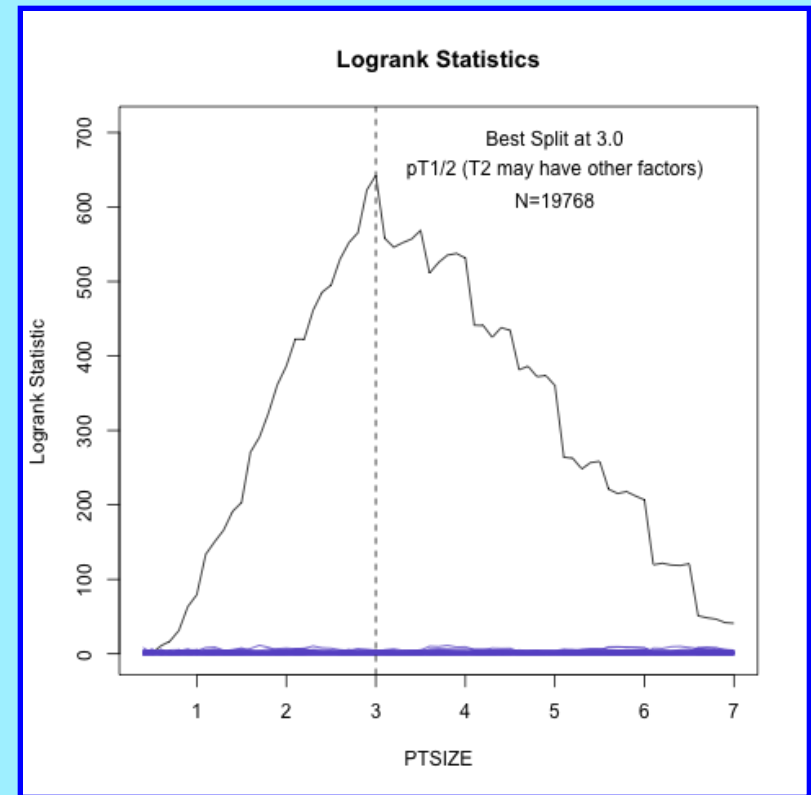
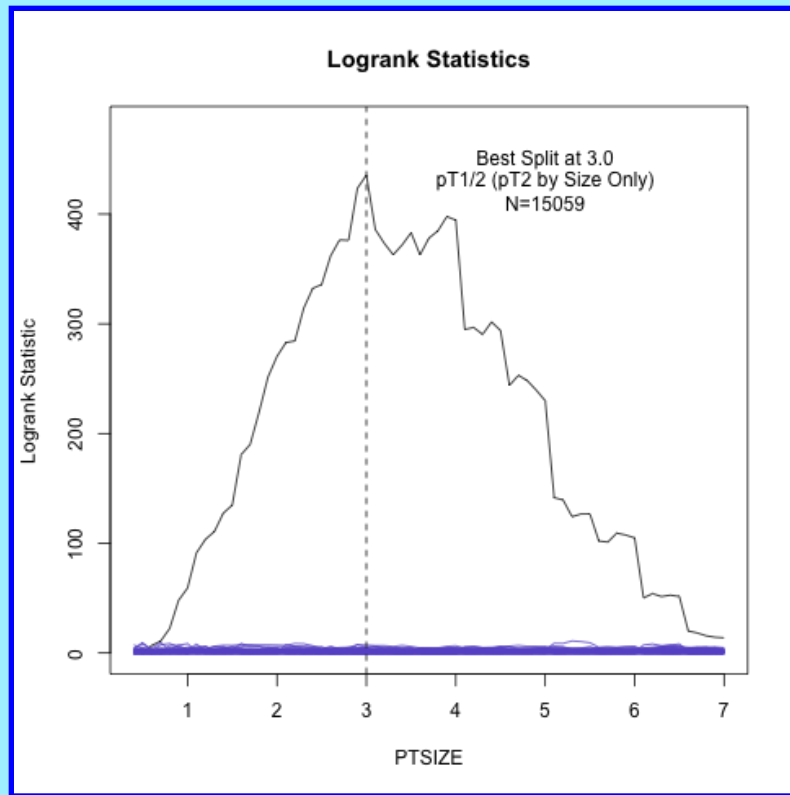
Type of treatment



T component

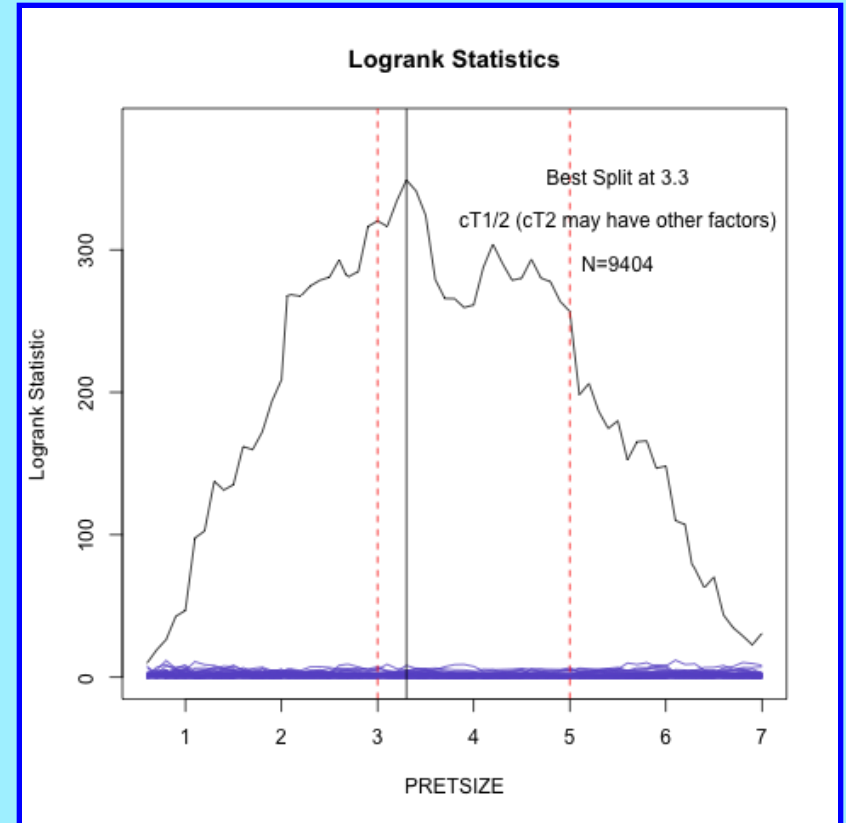
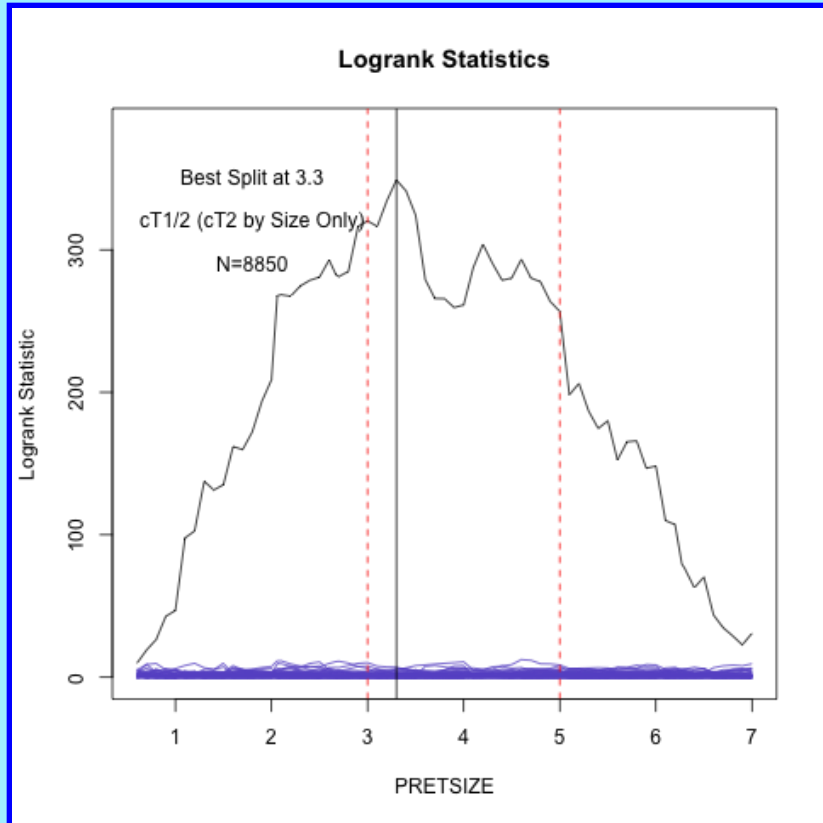
- Populations with pathological staging
 - pT1-4 N0 M0 R0
 - pT1-4 any N M0 R0
 - pT1-4 any N M0 any R
- Populations with clinical staging
 - cT1-4 N0 M0
 - cT1-4 any N M0
- Univariate and multivariate analyses
- Adjusted for histology, region, age and gender

Best split of pathologically staged T1 and T2 tumors



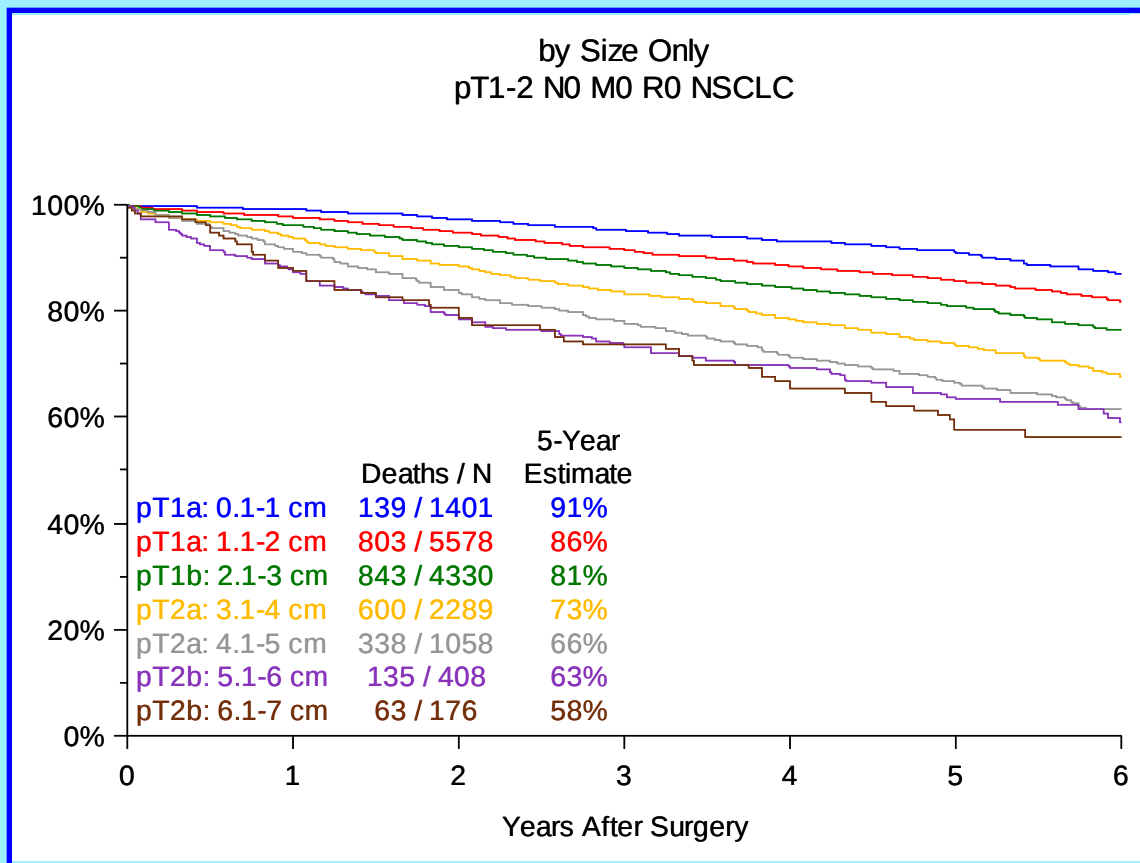
Rami-Porta R et al. J Thorac Oncol 2015; 10: 990-1003; suppl figures.

Best split of clinically staged T1 and T2 tumors



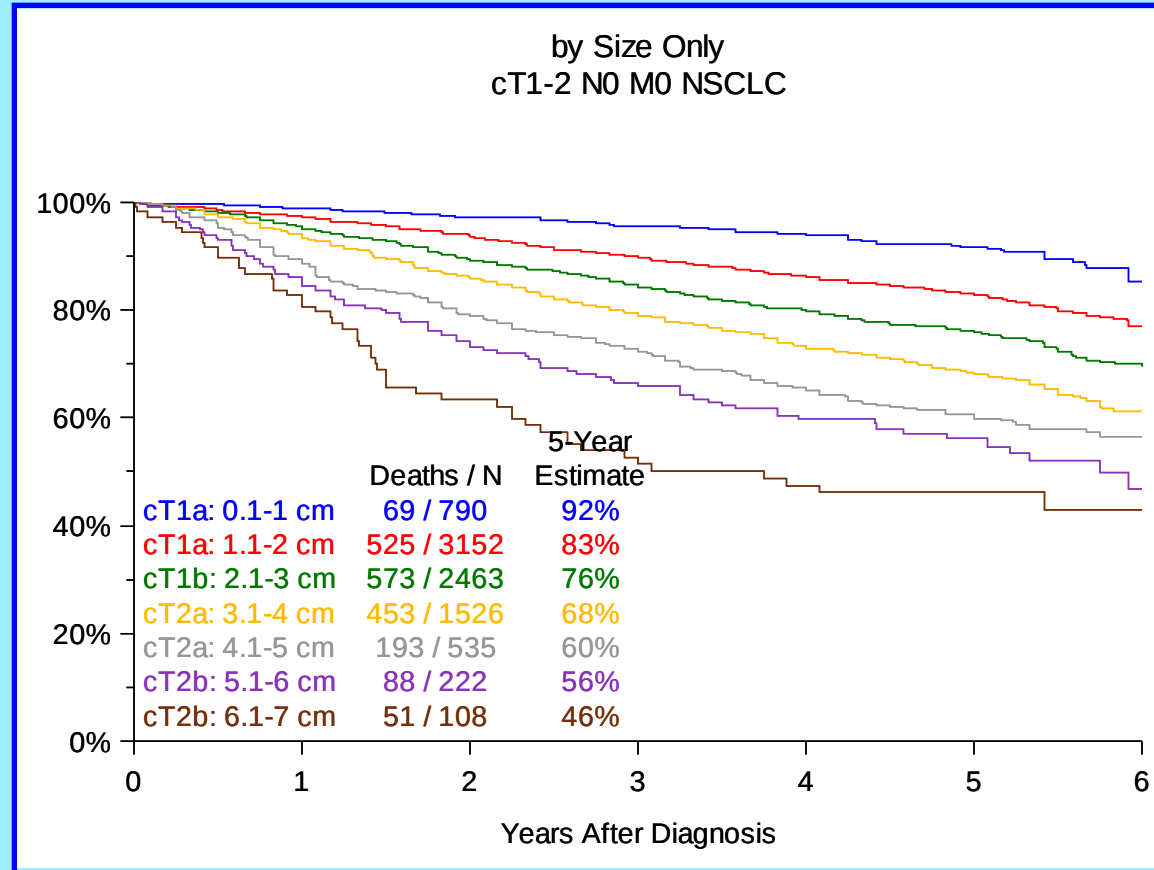
Rami-Porta R et al. J Thorac Oncol 2015; 10: 990-1003; suppl figures.

Survival of pT1 and pT2 N0 M0 R0 tumours by size only (1-cm increments)



Rami-Porta R et al. J Thorac Oncol 2015; 10: 990-1003.

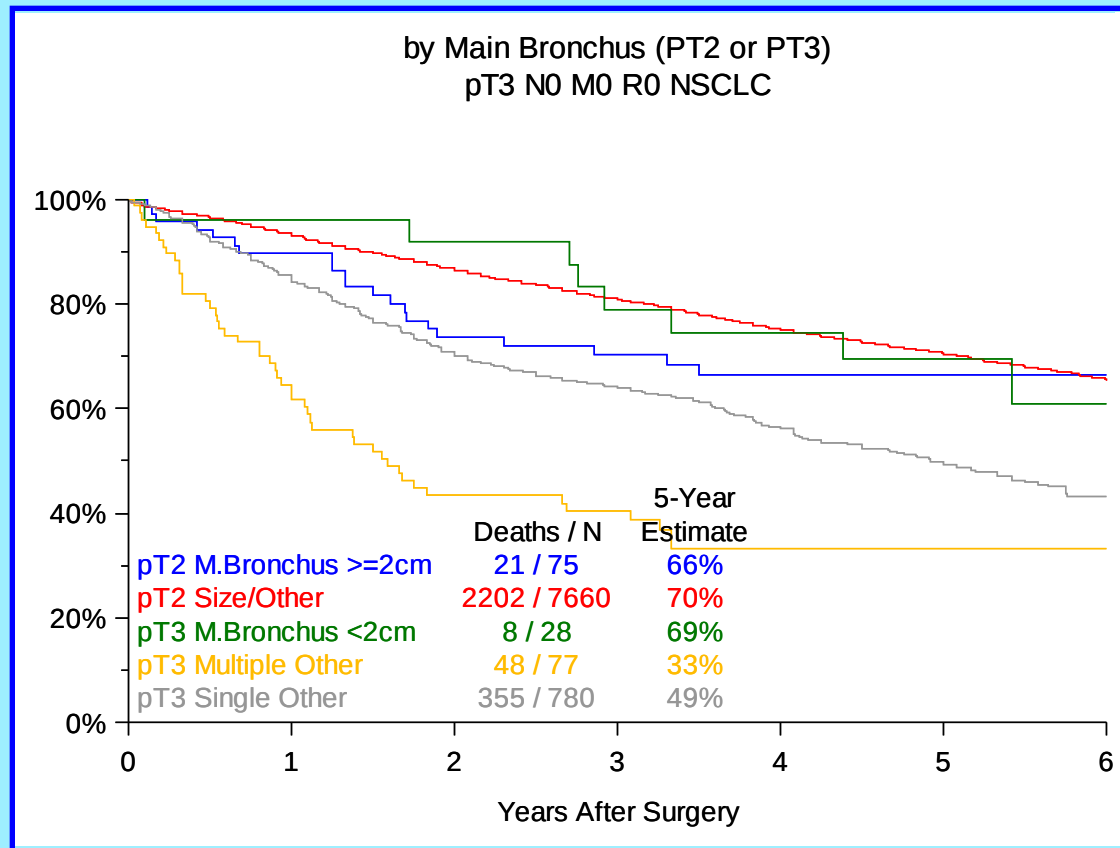
Survival of cT1 and cT2 N0 M0 tumours by size only (1-cm increments)



Tumour size by 1-cm increments

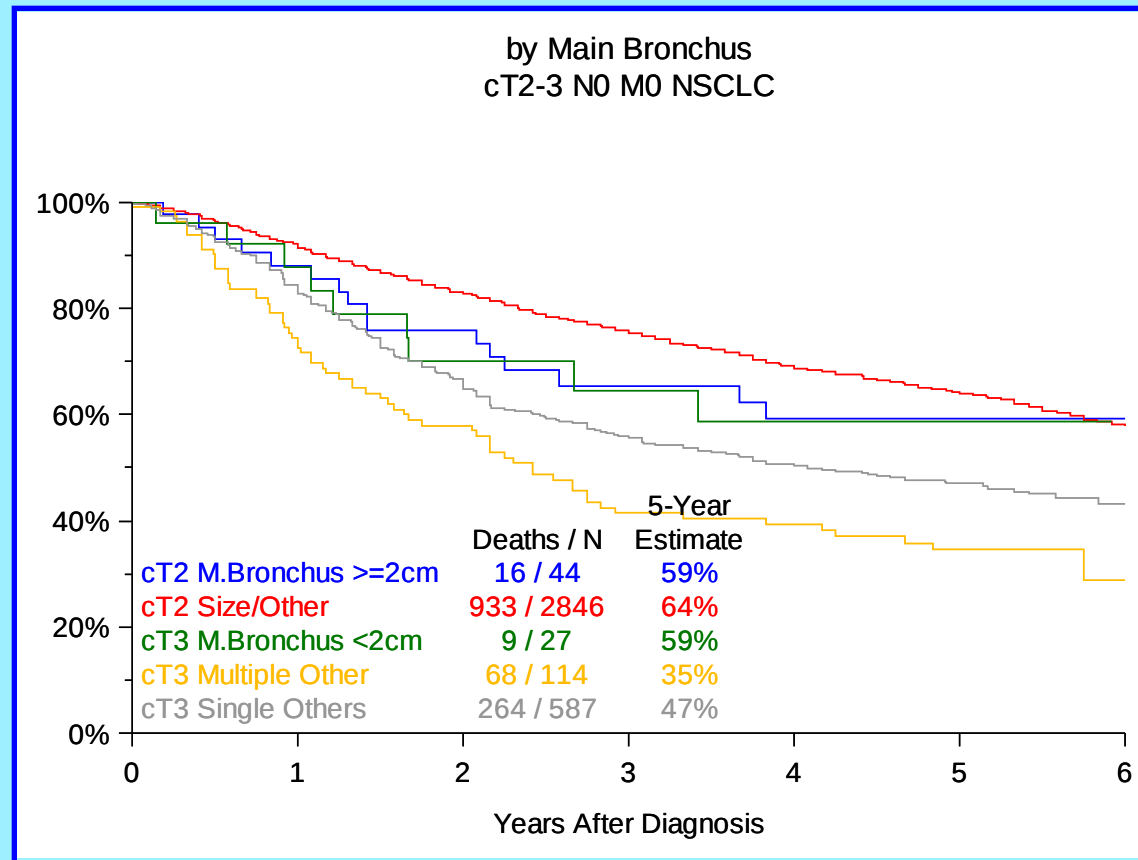
- Controlled for age, gender, cell type and geographical region
- All 1-cm cutpoints have statistical significance except for tumours > 6 cm
- The resulting cutpoints would be:
 - ≤ 1
 - >1 – 2
 - >2 – 3
 - >3 – 4
 - >4 – 5
 - >5 – 7
 - > 7

Survival of pathologically staged T2-T3 main bronchus N0 R0 tumours vs. others



Rami-Porta R et al. J Thorac Oncol 2015; 10: 990-1003; suppl figures.

Survival of clinically staged T2-T3 main bronchus N0 tumours vs. others



Rami-Porta R et al. J Thorac Oncol 2015; 10: 990-1003; suppl figures.

Endobronchial location & atelectasis

- T3 by endobronchial location has the same prognosis as T2 by endobronchial location
- T3 by total atelectasis/pneumonitis has the same prognosis as T2 by partial atelectasis/pneumonitis

T3 by diaphragm vs T4

Multivariate results - Pathologic staging

	Variable	n/N (%)	HR (95%CI)	p	p
Ref other T3	T3 diaphragm	40/1994 (2%)	1.79 (1.20-2.65)	0.004	0.02
	Any pT4	125/1994 (6%)	1.02 (0.78-1.35)	0.846	

Multivariate results - Clinical staging

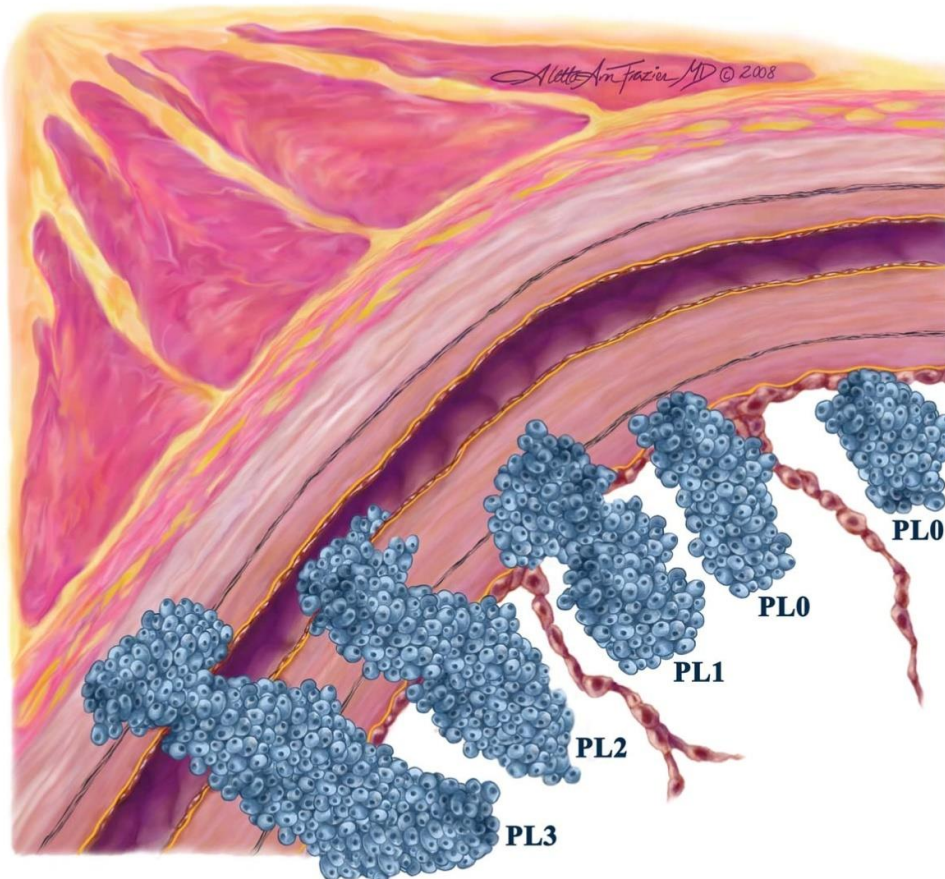
	Variable	n/N (%)	HR (95%CI)	p	p
Ref other T3	T3 diaphragm	18/864 (2%)	1.59 (0.88-2.86)	0.121	0.09
	Any pT4	148/864 (17%)	0.91 (0.69-1.21)	0.532	

Rami-Porta R et al. J Thorac Oncol 2015; 10: 990-1003; suppl tables.

T3 by diaphragm

- T3 by diaphragm has a T4 prognosis

Visceral pleura invasion



Copyright 2008 Aletta Ann Frazier, MD.

PL0:	----
PL1 y PL2:	T2
PL3:	T3

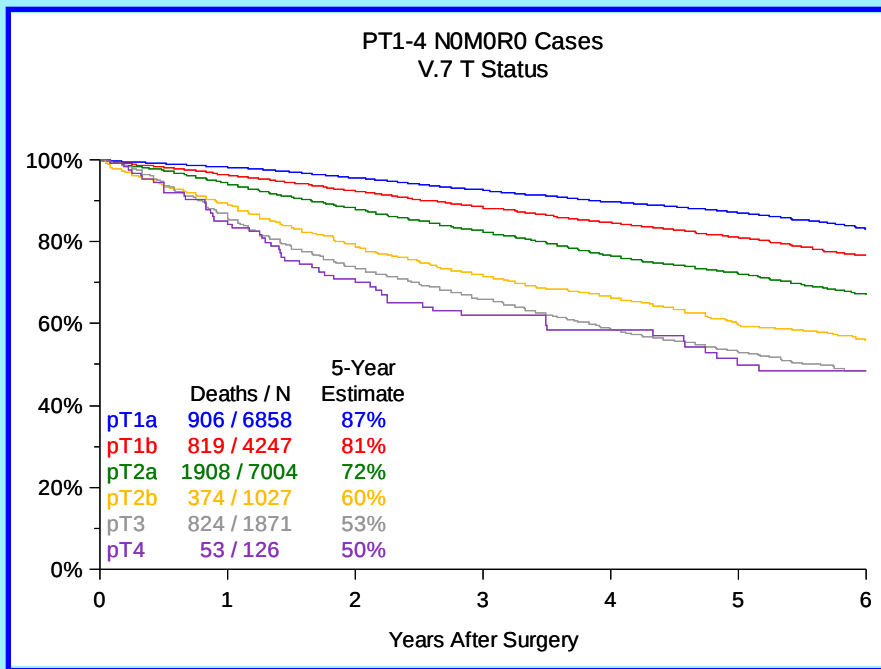
In case of doubt about the visceral pleura involvement, the use of elastic stains is recommended

T: recommendations

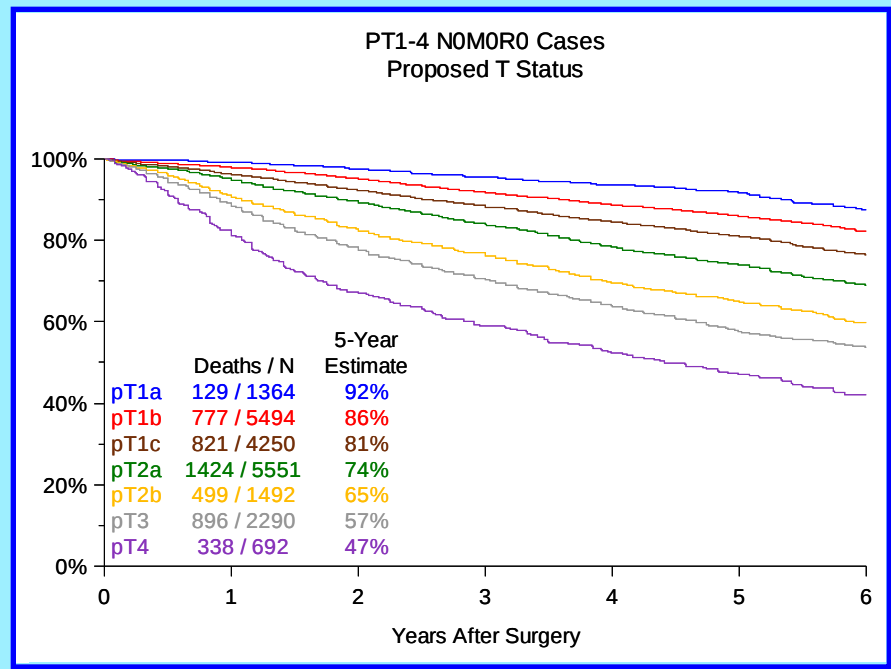
Descriptor	7th edition	Proposal for 8th edition
≤ 1 cm	T1a	T1a
$> 1 - 2$ cm	T1a	T1b
$> 2 - 3$ cm	T1b	T1c
$> 3 - 4$ cm	T2a	T2a
$> 4 - 5$ cm	T2a	T2b
$> 5 - 7$ cm	T2b	T3
> 7 cm	T3	T4
Bronchus < 2 cm	T3	T2
Complete atelectasis/pn	T3	T2
Diaphragm invasion	T3	T4
Mediastinal pleura	T3	-

Base model with size upstage, pT1-4 N0M0R0

T: 7th edition



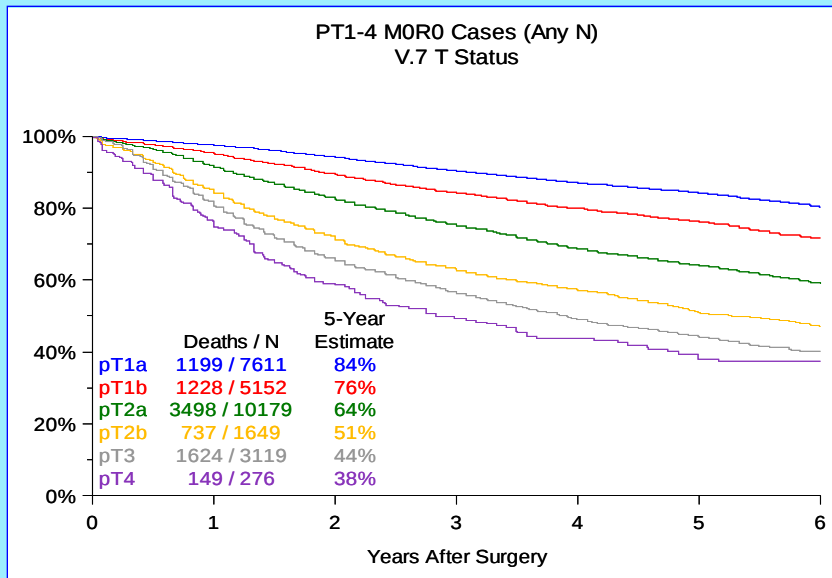
T: 8th edition



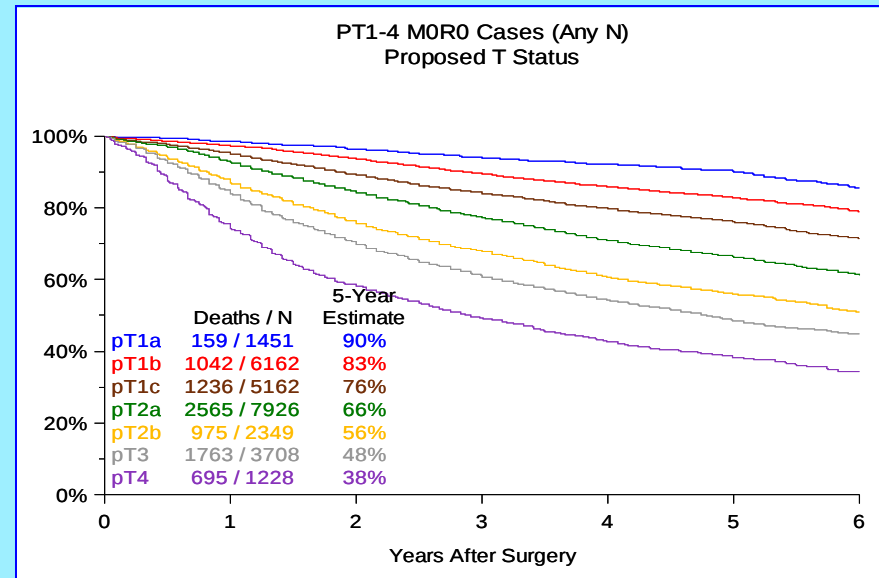
Rami-Porta R et al. J Thorac Oncol 2015; 10: 990-1003.

Base model with size upstage, pT1-4 M0R0 (any N)

T: 7th edition



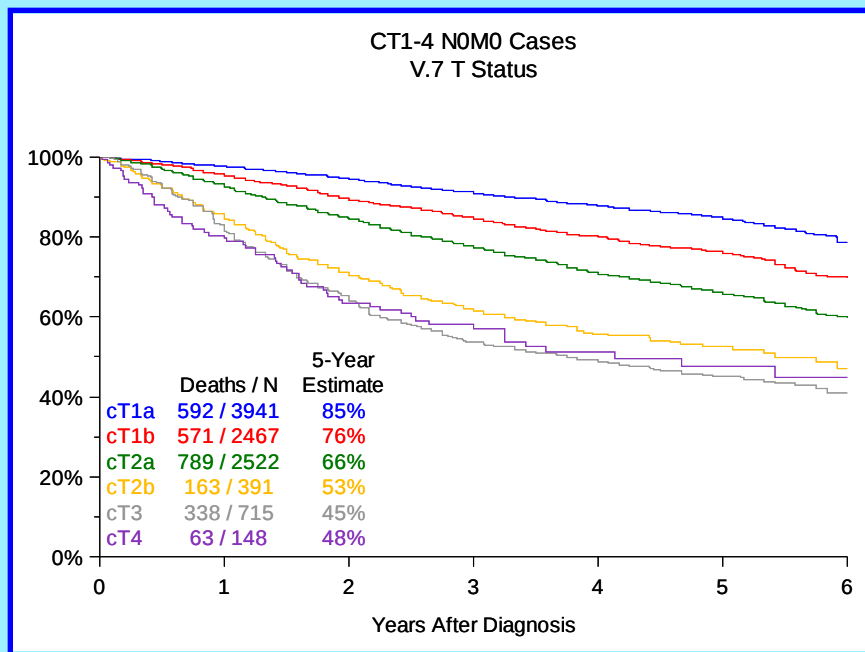
T: 8th edition



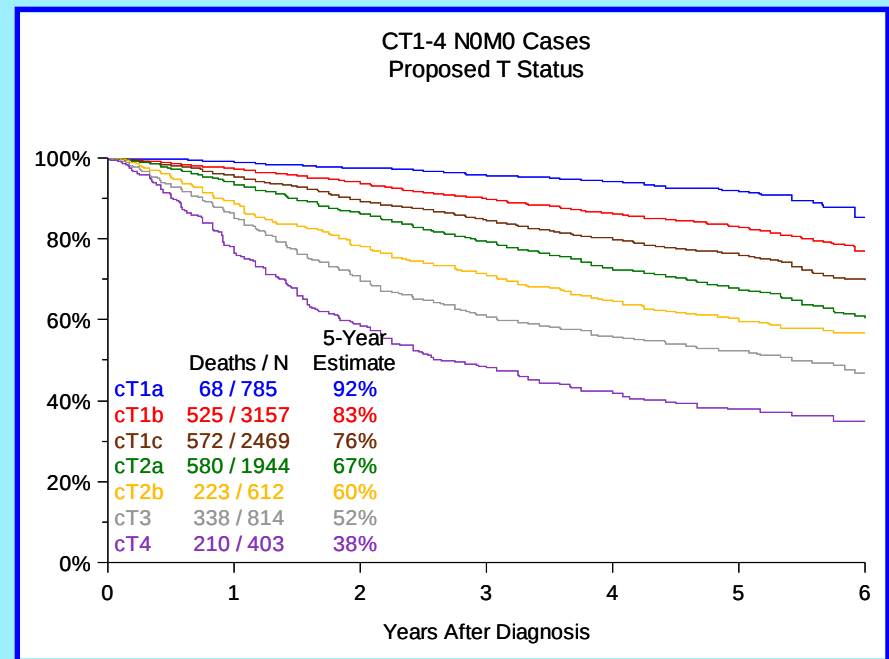
Rami-Porta R et al. J Thorac Oncol 2015; 10: 990-1003.

Base model with size upstage, cT1-4 N0 M0 R0

T: 7th edition

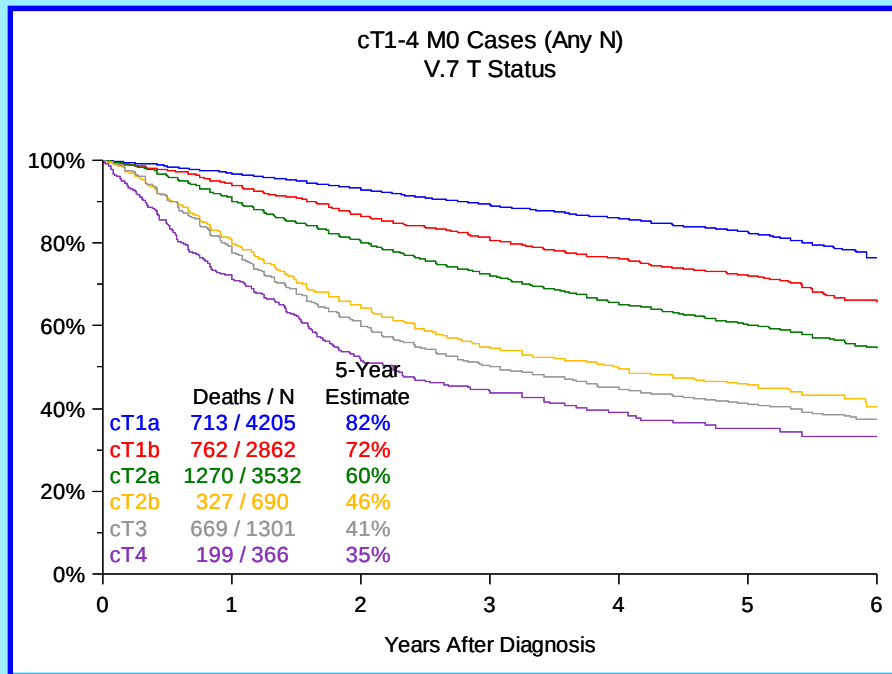


T: 8th edition

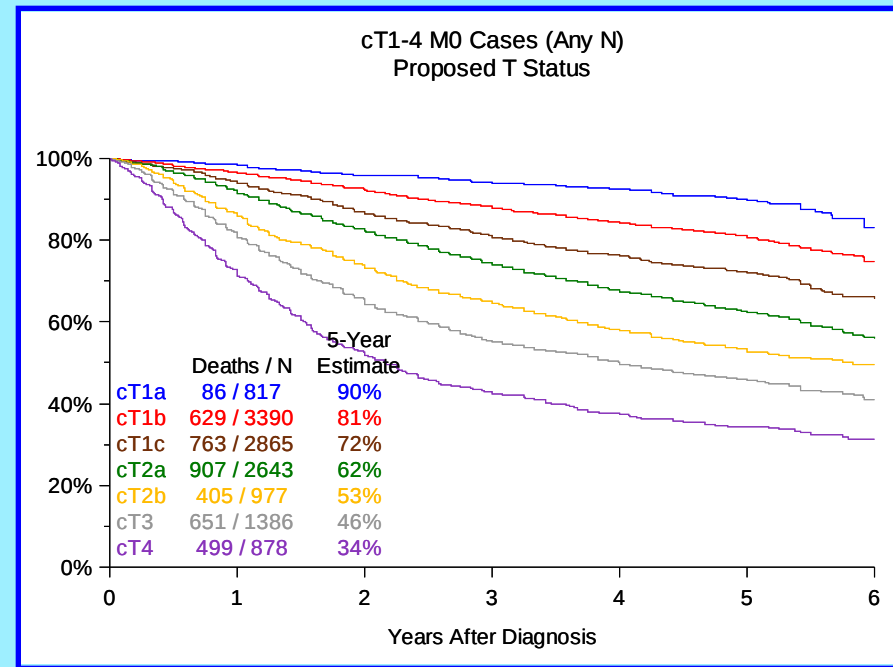


Base model with size upstage, cT1-4 any N M0

T: 7th edition



T: 8th edition



Rami-Porta R et al. J Thorac Oncol 2015; 10: 990-1003; suppl figures.

HR for pathologically staged N0M0R0 comparisons

HRs are adjusted for histology, region, age, and gender

Current V7 pT status estimates				
Contrast	HR estimate	Lower limit	Upper limit	p
T1a v T1b	1.35	1.23	1.48	<0.0001
T1b v T2a	1.43	1.32	1.55	<0.0001
T2a v T2b	1.25	1.12	1.40	0.0001
T2b v T3	1.45	1.28	1.64	<0.0001
T3 v T4	0.99	0.75	1.31	0.9695

Present status estimates				
Contrast	HR estimate	Lower limit	Upper limit	p
T1a v T1b	1.48	1.22	1.78	<0.0001
T1b v T1c	1.27	1.15	1.40	<0.0001
T1c v T2a	1.37	1.25	1.49	<0.0001
T2a v T2b	1.22	1.10	1.35	0.0159
T2b v T3	1.27	1.13	1.41	0.0026
T3 v T4	1.37	1.22	1.55	<0.0001

HR for clinically staged N0M0R0 comparisons

HRs are adjusted for histology, region, age, and gender

Current V7 pT status estimates				
Contrast	HR estimate	Lower limit	Upper limit	p
T1a v T1b	1.55	1.38	1.74	<0.0001
T1b v T2a	1.35	1.21	1.50	<0.0001
T2a v T2b	1.44	1.21	1.70	0.0001
T2b v T3	1.30	1.08	1.57	<0.0001
T3 v T4	0.89	0.68	1.17	0.9695

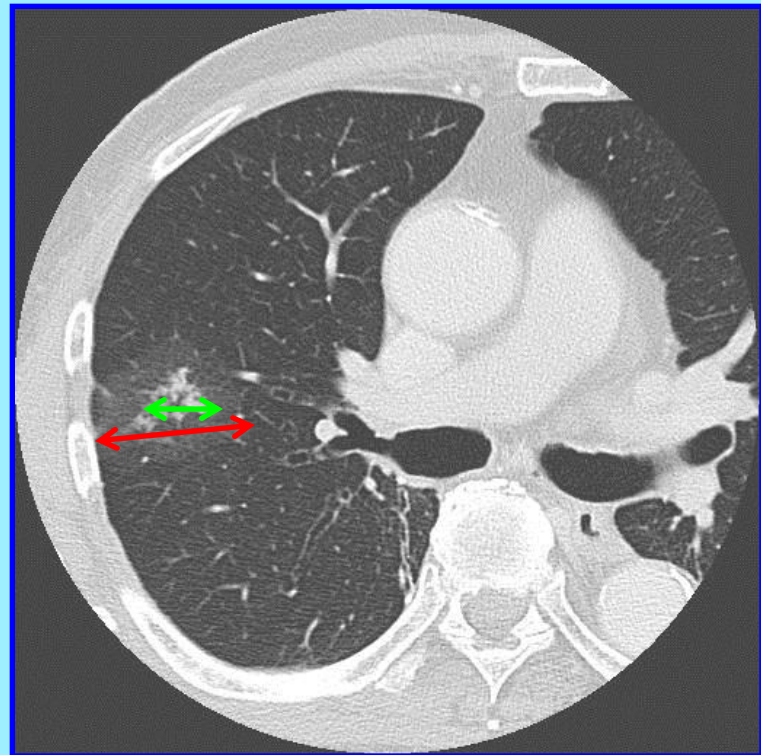
Present status estimates				
Contrast	HR estimate	Lower limit	Upper limit	p
T1a v T1b	1.81	1.41	2.33	<0.0001
T1b v T1c	1.42	1.26	1.60	<0.0001
T1c v T2a	1.28	1.14	1.44	<0.0001
T2a v T2b	1.21	1.04	1.42	0.0001
T2b v T3	1.30	1.10	1.54	<0.0001
T3 v T4	1.49	1.25	1.77	<0.0001

New T categories

- Tis (AIS), Tis (SQC)
- T1a(mi) or T1mi

Size of solid component

- Size of solid component in part-solid tumors as a T descriptor



Travis W et al. J Thorac Oncol 2016;
in press.

Cancers with multiple lesions

1. Multiple primary tumours:
 - One TNM for each tumour
2. Separate tumour nodules:
 - T3, T4, M1a
3. Multiple adenos with GGO/lepidic features:
 - Highest T (#/m) N M
4. Pneumonic type adenocarcinoma:
 - T3, T4, M1a

Detterbeck F et al. J Thorac Oncol 2016;
4 papers in press.

Conclusions

- More relevance of tumor size
- Improved assignment of certain T descriptors
- More prognostic groups based on the primary tumour
- Clear recommendations to classify new varieties of adenocarcinoma and lung cancers with multiple lesions