

AKCIĞER KANSERİ VE CERRAH TEDAVİ



DOÇ. DR. CELAL BUĞRA SEZEN
SAĞLIK BİLİMLERİ ÜNİVERSİTESİ
YEDİKULE GÖĞÜS HASTALIKLARI VE GÖĞÜS CERRAHİSİ
EĞİTİM VE ARAŞTIRMA HASTANESİ



SUNUM PLANI

- 8. Evreleme ve Eksiklikleri
- Evrelere Göre Akciğer Kanseri Tedavisi
- Senkron ve Metakron Akciğer Kanseri
- 9. Evrelemeden Beklentiler



8. EVRELEME (2015)

> J Thorac Oncol. 2015 Jul;10(7):990-1003. doi: 10.1097/JTO.0000000000000559.

The IASLC Lung Cancer Staging Project: Proposals for the Revisions of the T Descriptors in the Forthcoming Eighth Edition of the TNM Classification for Lung Cancer

Ramón Rami-Porta ¹, Vanessa Bolejack, John Crowley, David Ball, Jhingook Kim, Gustavo Lyons, Thomas Rice, Kenji Suzuki, Charles F Thomas Jr, William D Travis, Yi-Long Wu; IASLC Staging and Prognostic Factors Committee, Advisory Boards and Participating Institutions

Collaborators, Affiliations + expand

PMID: 26134221 DOI: 10.1097/JTO.0000000000000559

[Free article](#)

Abstract

Introduction: An international database was collected to inform the 8 edition of the anatomic classification of lung cancer. The present analyses concern its primary tumor (T) component.

Methods: From 1999 to 2010, 77,156 evaluable patients, 70,967 with non-small-cell lung cancer, were collected; and 33,115 had either a clinical or a pathological classification, known tumor size, sufficient T information, and no metastases. Survival was measured from date of diagnosis or surgery for clinically and pathologically staged tumors. Tumor-size cutpoints were evaluated by the running log-rank statistics. T descriptors were evaluated in a multivariate Cox regression analysis adjusted for age, gender, histological type, and geographic region.



T FAKTÖRÜNDE DEĞİŞENLER

Table 1. Proposed T, N, and M descriptors for the eighth edition of TNM classification for lung cancer

T: Primary tumor

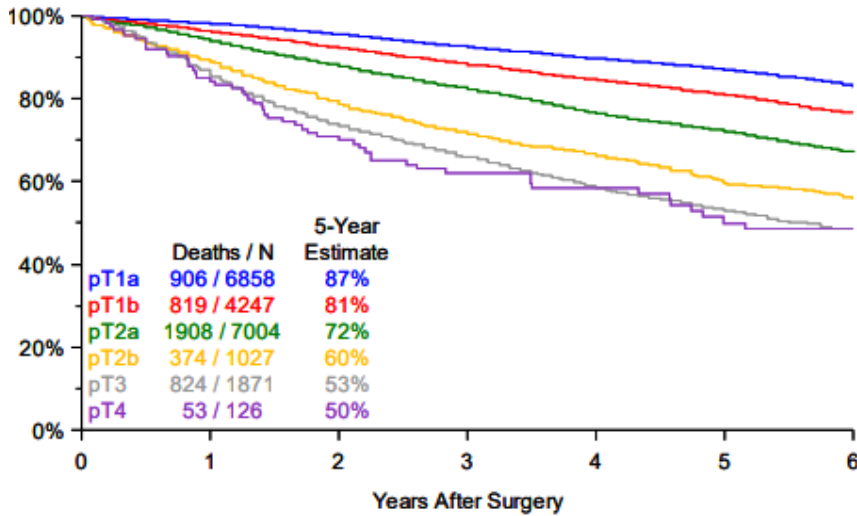
Tx	Primary tumor cannot be assessed or tumor proven by presence of malignant cells in sputum or bronchial washings but not visualized by imaging or bronchoscopy
T0	No evidence of primary tumor
Tis	Carcinoma in situ
T1	Tumor ≤ 3 cm in greatest dimension surrounded by lung or visceral pleura without bronchoscopic evidence of invasion more proximal than the lobar bronchus (i.e., not in the main bronchus) ^a
T1a(mi)	Minimally invasive adenocarcinoma ^b
T1a	Tumor ≤ 1 cm in greatest dimension ^a
T1b	Tumor >1 cm but ≤ 2 cm in greatest dimension ^a
T1c	Tumor >2 cm but ≤ 3 cm in greatest dimension ^a
T2	Tumor >3 cm but ≤ 5 cm or tumor with any of the following features ^c : - Involves main bronchus regardless of distance from the carina but without involvement of the carina - Invades visceral pleura - Associated with atelectasis or obstructive pneumonitis that extends to the hilar region, involving part or all of the lung
T2a	Tumor >3 cm but ≤ 4 cm in greatest dimension
T2b	Tumor >4 cm but ≤ 5 cm in greatest dimension
T3	Tumor >5 cm but ≤ 7 cm in greatest dimension or associated with separate tumor nodule(s) in the same lobe as the primary tumor or directly invades any of the following structures: chest wall (including the parietal pleura and superior sulcus tumors), phrenic nerve, parietal pericardium
T4	Tumor >7 cm in greatest dimension or associated with separate tumor nodule(s) in a different ipsilateral lobe than that of the primary tumor or invades any of the following structures: diaphragm, mediastinum, heart, great vessels, trachea, recurrent laryngeal nerve, esophagus, vertebral body, and carina



SAĞKALIM SONUÇLARI

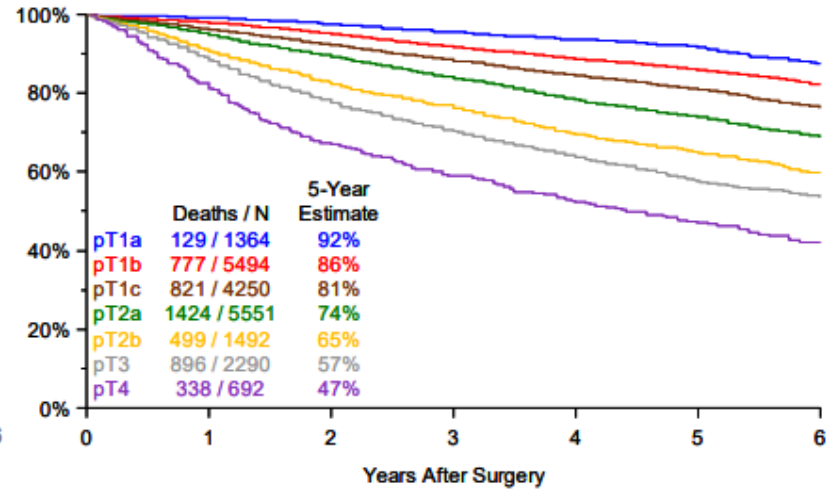
7th Edition T Categories

PT1-4 NOMORO Cases
V.7 T Status



Proposed T Categories

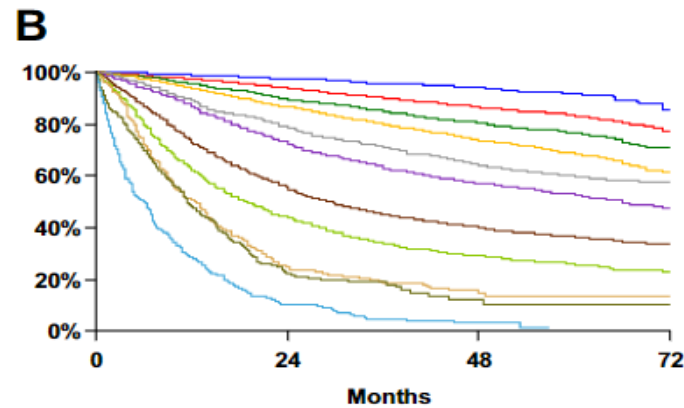
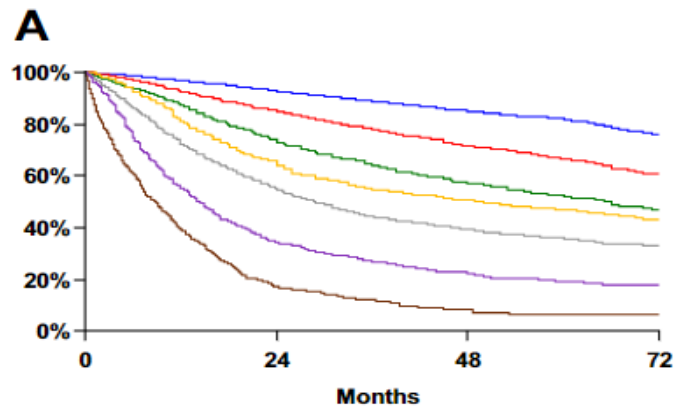
PT1-4 NOMORO Cases
Proposed T Status



The IASLC Lung Cancer Staging Project: Proposals for Revision of the TNM Stage Groupings in the Forthcoming (Eighth) Edition of the TNM Classification for Lung Cancer

Peter Goldstraw FRCS^a, Kari Chansky MS^b, John Crowley PhD^b, Ramon Rami-Porta MD^c, Hisao Asamura MD^d, Wilfried E.E. Eberhardt MD^e, Andrew G. Nicholson FRCP^f, Patti Groome PhD^g, Alan Mitchell MS^b, Vanessa Bolejack MPH^b

International Association for the Study of Lung Cancer Staging and Prognostic Factors Committee, Advisory Boards, and Participating Institutions



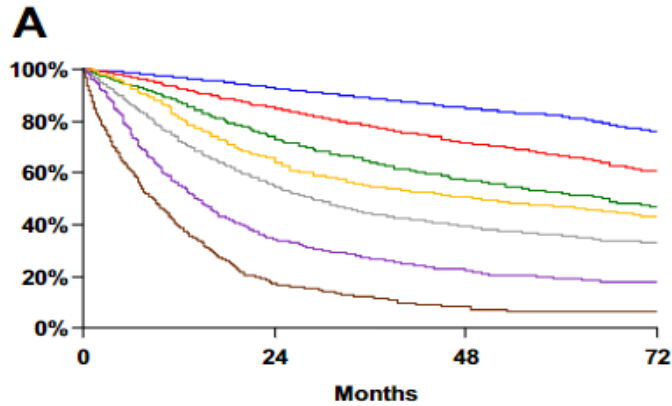
7 th Ed.	Events / N	MST	24 Month	60 Month
IA	1119 / 6303	NR	93%	82%
IB	768 / 2492	NR	85%	66%
IIA	424 / 1008	66.0	74%	52%
IIB	382 / 824	49.0	64%	47%
IIIA	2139 / 3344	29.0	55%	36%
IIIB	2101 / 2624	14.1	34%	19%
IV	664 / 882	8.8	17%	6%



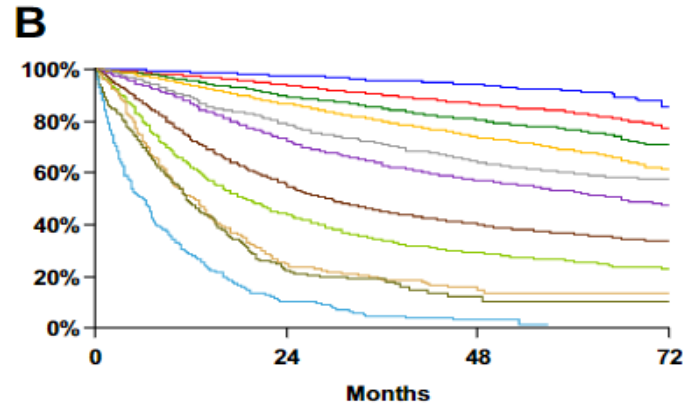
Proposed	Events / N	MST	24 Month	60 Month
IA1	68 / 781	NR	97%	92%
IA2	505 / 3105	NR	94%	83%
IA3	546 / 2417	NR	90%	77%
IB	560 / 1928	NR	87%	68%
IIA	215 / 585	NR	79%	60%
IIB	605 / 1453	66.0	72%	53%
IIIA	2052 / 3200	29.3	55%	36%
IIIB	1551 / 2140	19.0	44%	26%
IIIC	831 / 986	12.6	24%	13%
IVA	336 / 484	11.5	23%	10%
IVB	328 / 398	6.0	10%	0%



SAĞKALIMDA DEĞİŞEN NE?



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EVRE I AKCIĞER KANSERİ

- Evre 1 KHDAK'lerinde cerrahi tedavi altın standart yöntemdir. Günümüzde evre 1 tümörlerde oldukça başarılı sağkalım sonuçları mevcuttur.

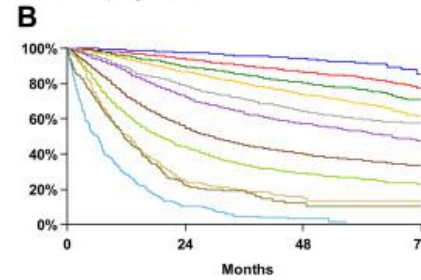
Original Article

IASLC Staging Committee Article

The IASLC Lung Cancer Staging Project: Proposals for Revision of the TNM Stage Groupings in the Forthcoming (Eighth) Edition of the TNM Classification for Lung Cancer

Peter Goldstraw FRCS^{a, b, c}, Kari Chansky MS^b, John Crowley PhD^b, Ramon Rami-Porta MD^c, Hisao Asamura MD^d, Wilfried E.E. Eberhardt MD^e, Andrew G. Nicholson FRCP^f, Patti Groome PhD^g, Alan Mitchell MS^h, Vanessa Bolejack MPH^b

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CERRAHİ TEDAVİ YAKLAŞIMI

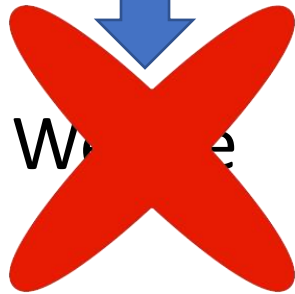


Non-Anatomik

Anatomik



W...e



Segmentektomi

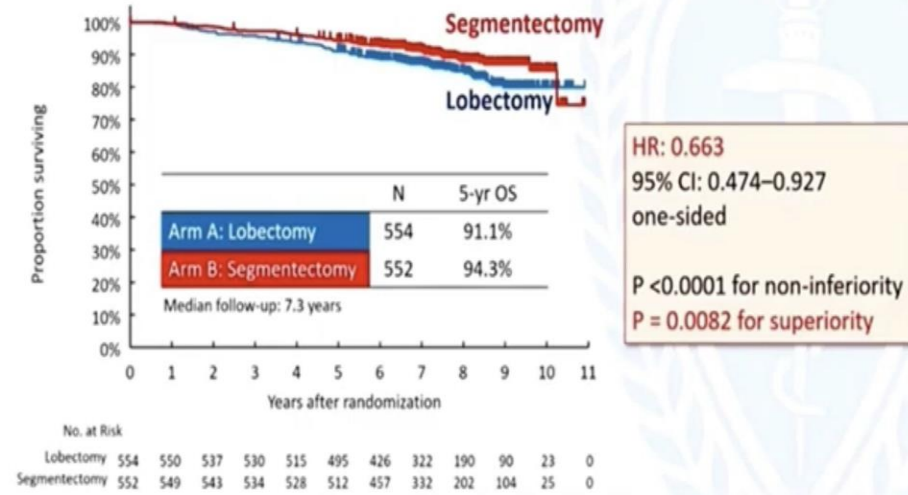
Lobektomi



JCOG0802/WJOG4607L

- Evre 1a/b Tümörlerde
 - Genel sağkalım Segmentektomi > Lobektomi
 - Segmentektomi için nodal negatifliğin sağlanması (f/s çalışması)
 - Radikal LN diseksiyonu

Result 1. Overall survival (primary endpoint)



CALGB 14503

ELSEVIER

Summary Sli... » CALGB 140503: Sub-L...

CALGB 140503 (Alliance): Phase III Trial of Lobar or Sublobar Resection for Peripheral Clinical Stage IA NSCLC With Tumor Size ≤ 2 cm

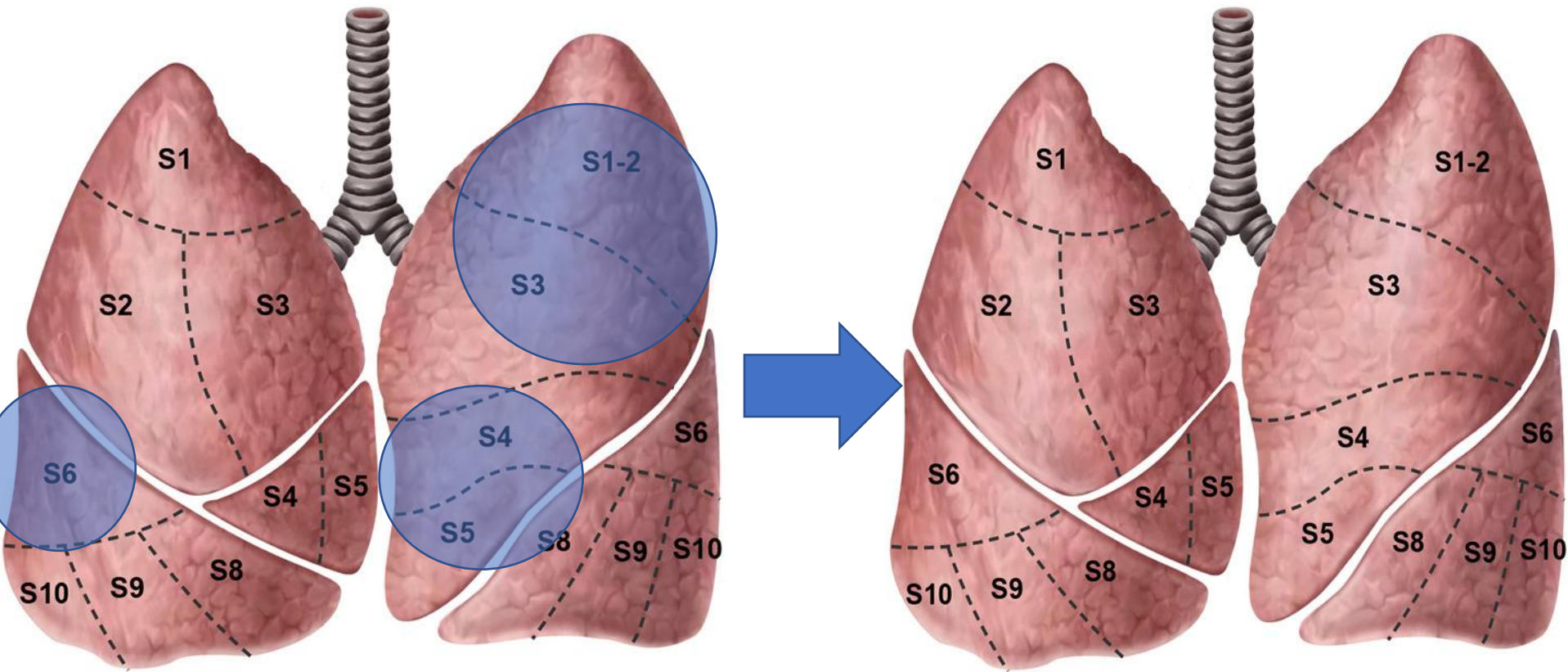
 Slideset Download  Conference Coverage

Sublobar resection resulted in noninferior DFS and OS compared with lobectomy for patients with peripheral cT1aN0 NSCLC and tumor size ≤ 2 cm without metastases to major hilar and mediastinal lymph nodes.

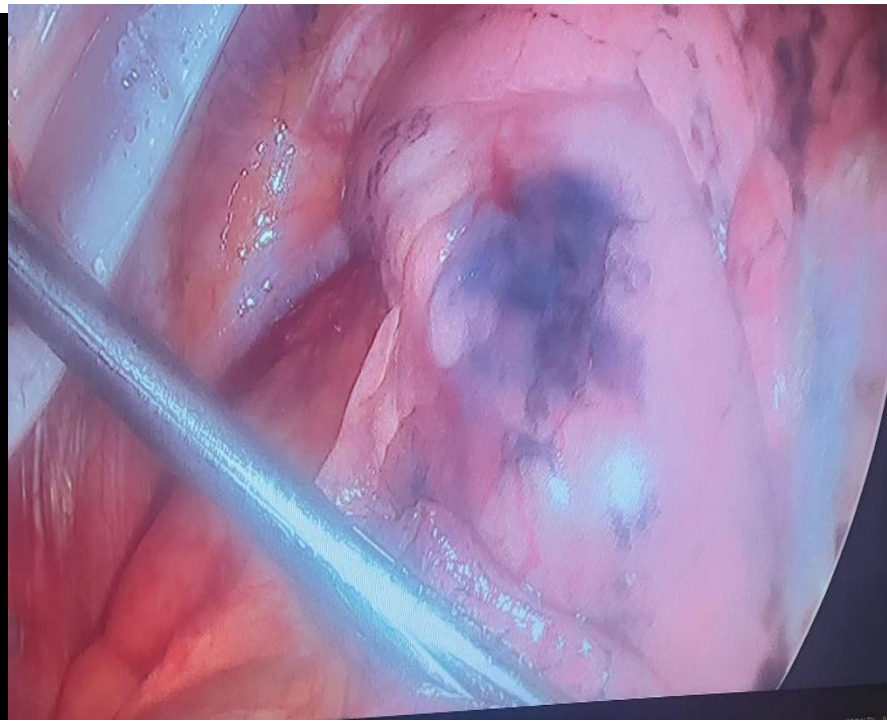


BASİT

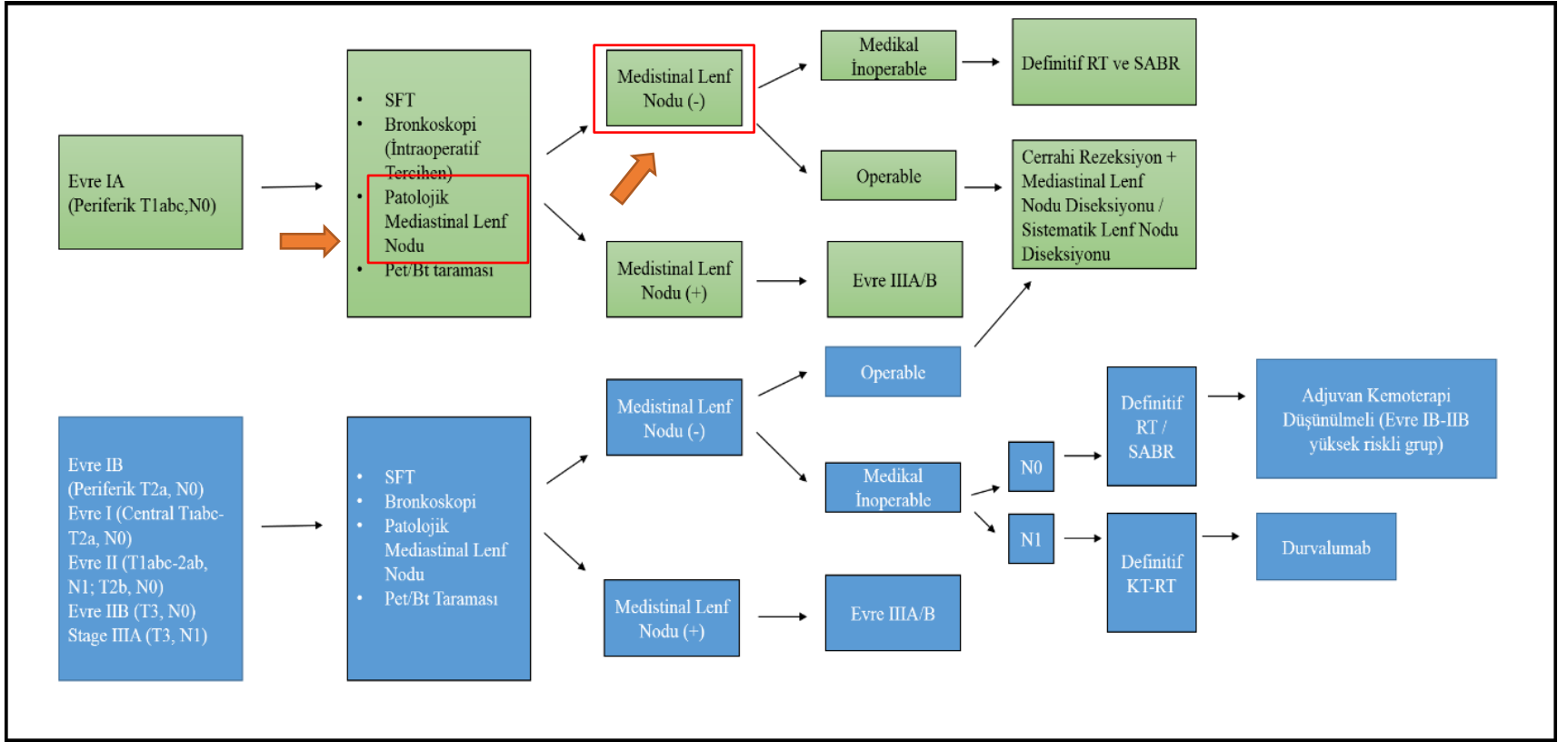
KOMPLEKS



SEGMENTEKTOMI



EVRE I AKCIGER KANSERI



LENF NODU DİSEKSIYON YÖNTEMLERİ

- **Lenf bezi örnekleme** Sadece anormal görünümdeki lenf bezlerinin çıkarılması
- **Sistemik lenf nodu örnekleme** Önceden belirlenmiş olan lenf bezlerinden rutin biyopsi alınmasıdır
- **Sistemik mediastinal lenf nodu diseksiyonu** İpsilateral tüm lenf bezlerinin, etrafındaki yağlı doku ile birlikte çıkarılması
- **Komplet ve Radikal MLND** Sağ taraf tümörler için lenf nodu içeren tüm mediastinal dokuların rezeke edilmesi, sol taraf tümörleri için duktus arteriozus'un divize edilerek arkus aorta'nın mobilize edilmesiyle üst ve alt paratrakeal lenf nodlarının rezeke edilmesidir.

- ▶ **Cerrah İsteddiğini Alır**
- ▶ **Görüdüğünü ya Göremediği?**
- ▶ **Evremelede Hata ?**
- ▶ **Lob Spesifik**
- ▶ **Sistemik**
- ▶ **Overstaging ?**
- ▶ **Morbidite ?**



LENF NODU SINIFLAMASI



LENF NODU SINIFLAMASI



European Journal of Cardio-thoracic Surgery 32 (2007) 1–8



ESTS guidelines for preoperative lymph node staging for non-small cell lung cancer

Paul De Leyn^{a,*}, Didier Lardinois^b, Paul E. Van Schil^c, Ramon Rami-Porta^d, Bernward Passlick^e, Marcin Zielinski^f, David A. Waller^g, Tony Lerut^a, Walter Weder^b

^aDepartment of Thoracic Surgery, University Hospitals Leuven, Belgium

^bDepartment of Thoracic Surgery, University Hospital of Zurich, Switzerland

^cDepartment of Thoracic Surgery, University Hospital of Antwerp, Belgium

^dDepartment of Thoracic Surgery, Hospital Mutua de Terrasa, Spain

^eDepartment of Thoracic Surgery, Albert-Ludwigs-University Freiburg, Germany

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Received 12 November 2006; received in revised form 28 January 2007; accepted 29 January 2007; available online 19 April 2007



European Journal of Cardio-thoracic Surgery 30 (2006) 787–792

EUROPEAN JOURNAL OF
CARDIO-THORACIC
SURGERY

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Invited paper

ESTS guidelines for intraoperative lymph node staging in non-small cell lung cancer[☆]

Didier Lardinois^a, Paul De Leyn^b, Paul Van Schil^c, Ramon Rami Porta^d, David Waller^e, Bernward Passlick^f, Marcin Zielinski^g, Klaus Junker^h, Erino Angelo Rendinaⁱ, Hans-Beat Ris^j, Joachim Hasse^k, Frank Detterbeck^l, Toni Lerut^b, Walter Weder^{a,*}

^aDepartment of Thoracic Surgery, University Hospital, Zurich, Switzerland

^bDepartment of Thoracic Surgery, University Hospital, Leuven, Belgium

^cDepartment of Thoracic and Vascular Surgery, University Hospital, Antwerp, Belgium

^dDivision of Thoracic Surgery Hospital, Mutua de Terrasa, Spain

^eDepartment of Thoracic Surgery, University Hospitals Leicester NHS Trust, Glenfield Hospital, Leicester, United Kingdom

^fDepartment of Thoracic Surgery, University Hospital, Freiburg, Germany

^gDepartment of Thoracic Surgery, Pulmonary Hospital, Zakopane, Poland

^hDepartment of Pathology, University Hospital, Bochum, Germany

ⁱDivision of Thoracic Surgery, University Hospital La Sapienza, Roma, Italy

^jDivision of Thoracic and Vascular Surgery, University Hospital, Lausanne, Switzerland

^kDepartment of Thoracic Surgery, University Hospital, Freiburg, Germany

^lDivision of Cardiothoracic Surgery, University of North Carolina, Chapel Hill, USA

Available online 12 September 2006



EVRE II AKCİĞER KANSERİ

Evre 2 KHDAK lokalize hastalık olarak tanımlanabilir.

Evre 2 kanserlerde hastalık mediastinal lenf bezlerine geçmemiştir.

Evre 2 KHDAK hastaları, lob bronşlarını aşmış veya 3 cm'den büyük fakat 7 cm'den küçük veya viseral plevraya invaze olmuş veya bölgesel lenf nodlarına metastaz yapmış tümörlerdir.



LOBEKTOMI

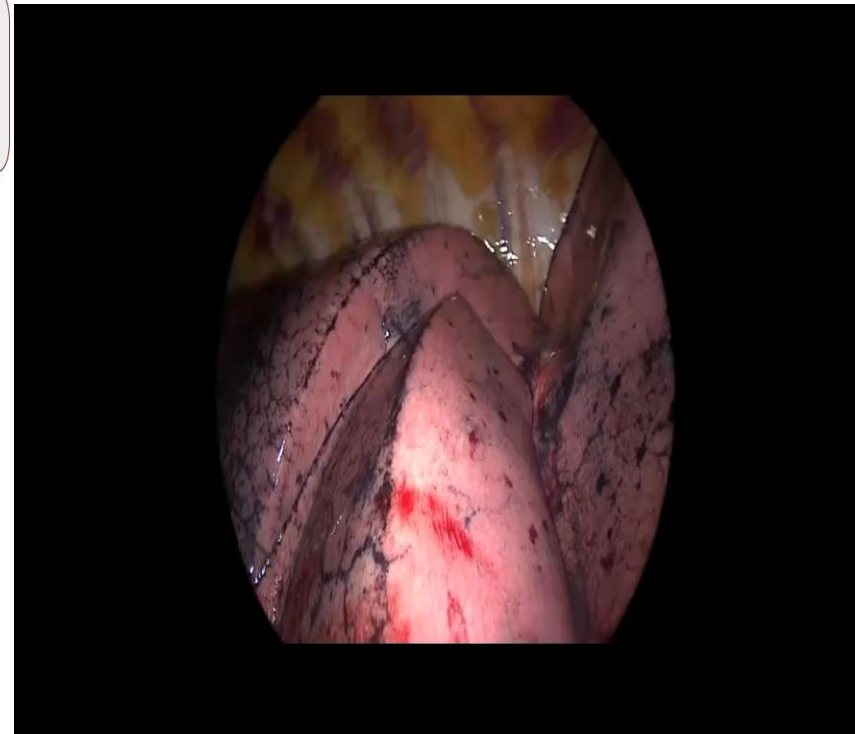


Uniportal versus multiportal thoracoscopic lobectomy

Ergonomic evaluation and perioperative outcomes from a randomized and controlled trial

Jie Yao, MD¹, Zhibo Chang, MD, Lin Zhu, MS, Junqiang Fan, MD*

UNIPORTAL



Surgical and postoperative data.

Characteristic	UVATS (n=35)	MVATS (n=34)	P value
Surgical time, min	96.77 ± 24.38	95.41 ± 20.11	.810
Blood loss, mL	34.14 ± 25.01	51.47 ± 40.84	.048
ICU, d	0	0	
Hospital stay, d	3.80 ± 0.90	4.65 ± 2.33	.144
Chest tube duration, d	2.71 ± 0.83 (2-6)	3.26 ± 1.96 (1-11)	.343
Lymph nodes harvested	31.97 ± 9.18 (17-53)	30.50 ± 9.35 (15-56)	.512
Positive lymph nodes (%)	8 (0.71)	50 (4.82)	.547
Total drainage in 24hours, mL	227.94 ± 117.69	308.24 ± 145.13	.018
Conversion rate	0	0	
Mortality	0	0	
Complications (%)	4 (11.4)	9 (26.5)	.276
Air leak (> 6 days)	0	4 (11.8)	
Atrial fibrillation	0	0	
Bleeding	0	0	
Atelectasis	0	0	
Bronchopleural fistula	0	0	
Death	0	0	
Pneumonia	0	0	
Chylothorax	0	1 (2.9)	
Reoperation	0	0	
Reinsertion of chest tube	4 (11.4)	3 (8.8)	
Hoarseness	0	1 (2.9)	
Lung function			
FEV ₁ , L (3 wks)	1.87 ± 0.42	1.89 ± 0.45	.866
FEV ₁ (%) (3 wks)	72.39 ± 14.41	72.80 ± 13.02	.901
FEV ₁ , L (3 mo)	2.11 ± 0.49	2.17 ± 0.52	.659
FEV ₁ (%) (3 months)	82.20 ± 16.47	82.14 ± 14.14	.988

FEV₁ (%) = first second forced expiratory volume accounts for the percentage of FVC (forced vital capacity). FEV₁ (L) = forced expiratory volume in 1 second, ICU = intensive care unit, MVATS = multiple-portal video assisted thoracoscopic surgery, UVATS = uniportal video assisted thoracoscopic surgery.

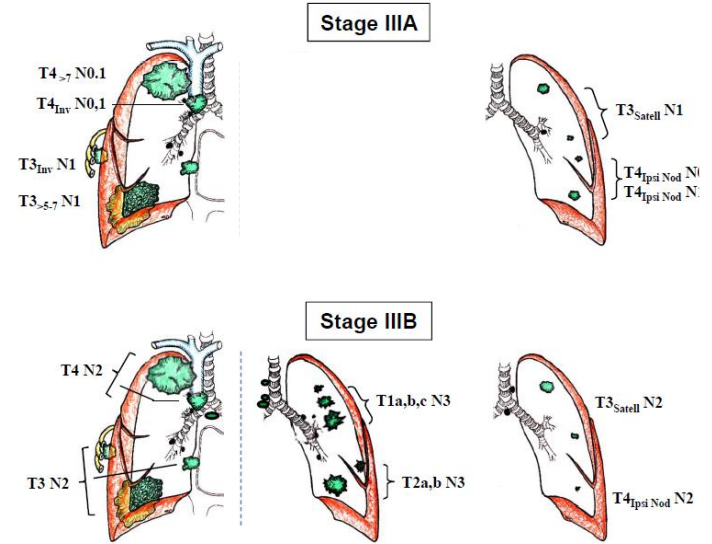
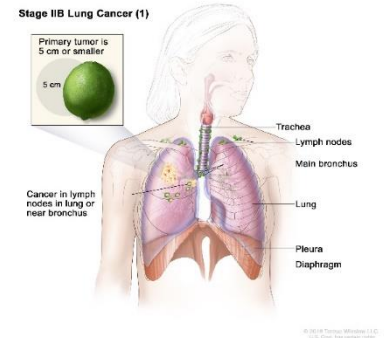
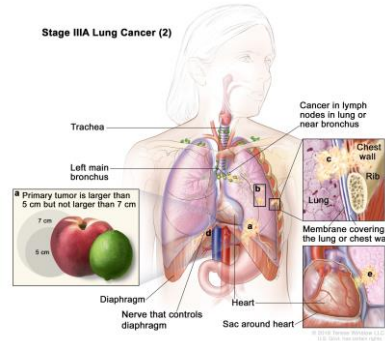


LOKAL İLERİ EVRE KHDK (EVRE IIIA VE IIIB)

- IIIA
 - Lokal ileri evre akciğer kanserleri olması nedeniyle daha zor olarak tedavi edilirler
 - Heterojen bir kanser fenotipine sahiptir.

Sadece seçilmiş hastalara bu evrede cerrahi tedavi uygulanmaktadır.

- IIIB
 - Lokal invazyon ve mediastinal lenf nodu tutulum olasılığı
 - Definitif kemoterapi ve radyoterapi verilmesidir.



PNÖMONEKTOMİ

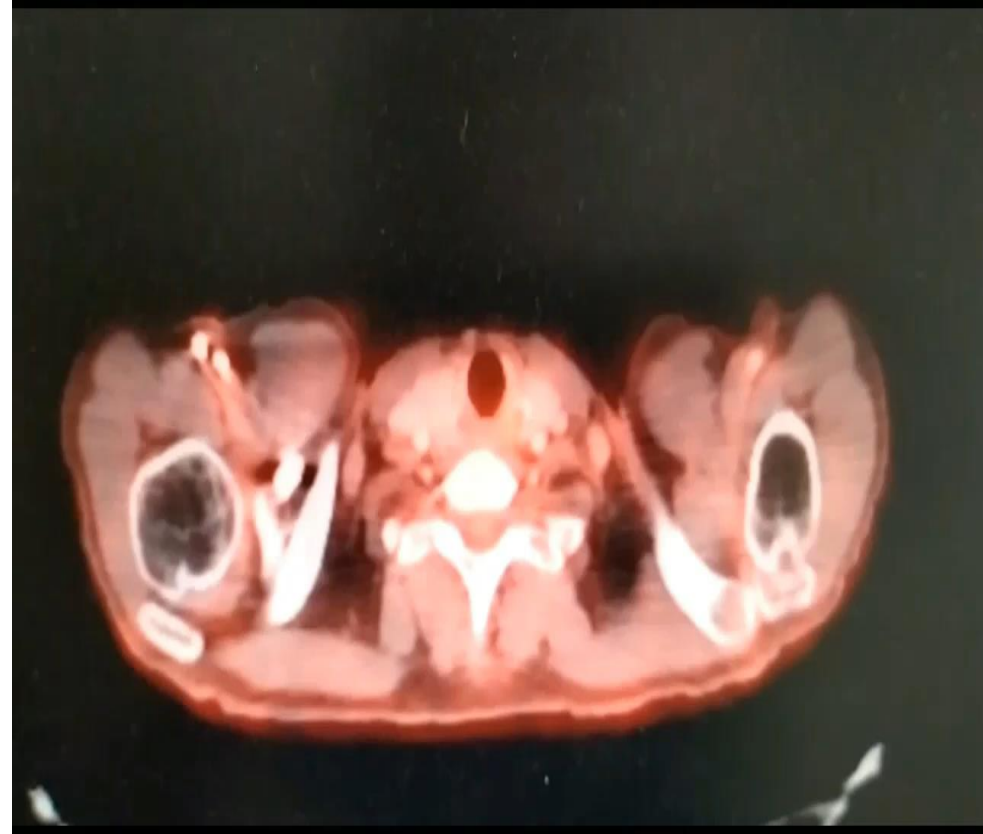
Pneumonectomy for lung cancer: Contemporary national early morbidity and mortality outcomes

Pascal A. Thomas, MD, FECTS,^a Julie Berbis, MD,^b Jean-Marc Baste, MD,^c
Françoise Le Pimpec-Barthes, MD,^d François Tronc, MD,^e Pierre-Emmanuel Falcoz, MD,^f

- İlk 30 günde mortaliteyi %5.7
- Komplikasyon oranını ise %33

Mortalite Riskinin

- >65 Yaş
- İndüksiyon tedavisi
- ASA skorunun >3
- Sağ Rezeksiyon
- Ekstended akciğer rezeksiyonu



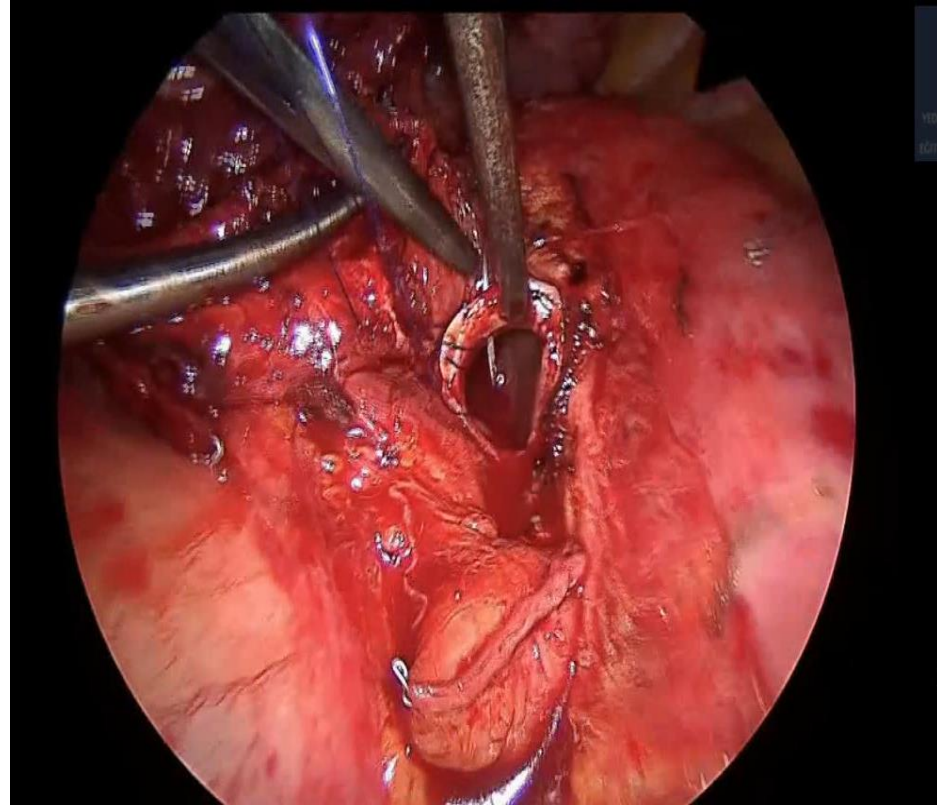
Ne Kadar Agresif Olmalıyız?

Original Article

Sleeve lobectomy compared with pneumonectomy for operable centrally located non-small cell lung cancer: a meta-analysis

Zhengjun Li¹, Wei Chen², Mozhu Xia³, Hongxu Liu², Yongyu Liu¹, Ilhan Inci⁴, Fabio Davoli⁵, Ryuichi Waseda⁶, Pier Luigi Filosso⁷, Abby White⁸

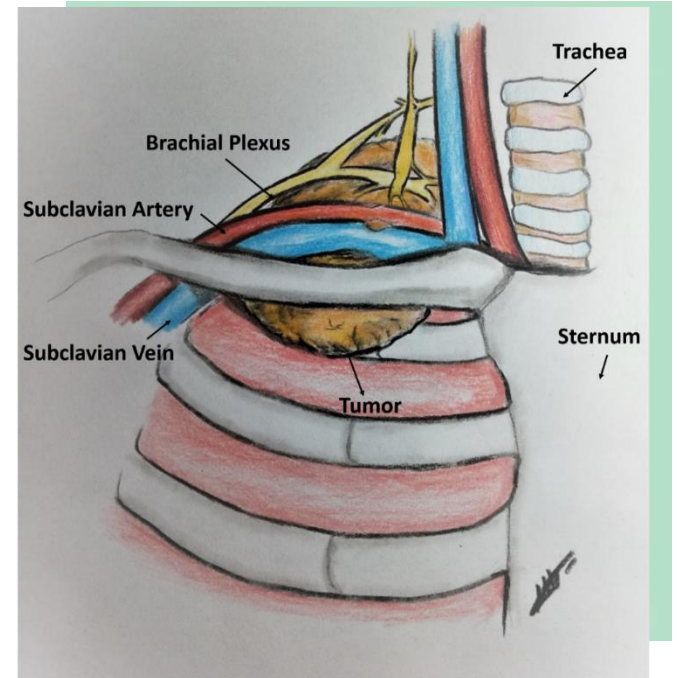
Variables	No. of studies furnishing data	Results, %		OR (95% CI)	P value	I ² , %
		SL	PN			
Operative mortality	13 (8,10,11,17-19,23-28,30)	2.62	6.30	0.40 (0.25–0.63)	<0.0001	0
30-day mortality	12 (14-16,20-22,29,32-36)	2.78	5.86	0.55 (0.32–0.96)	0.04	55
Local recurrence	15 (8,10,13,16,17,19,21,25,27,28,30-34)	15.65	22.81	1.09 (0.72–1.64)	0.69	50
Distant recurrence	9 (10,21,27,28,30-34)	19.81	30.64	0.61 (0.45–0.82)	0.001	0
Complication	15 (10,13,14,16-21,24,28,29,31-33)	29.39	30.58	1.07 (0.87–1.31)	0.55	27
Overall survival						
1-year	8 (11,14,15,20,21,28,29,35)	38.00	18.26	1.53 (1.31–1.80)	<0.00001	4
3-year	11 (11,13,17,20,21,27-30,32,35)	27.80	10.95	1.78 (1.47–2.17)	<0.00001	30
5-year	20 (8,11,13,14,16-22,25-29,32-35)	25.77	7.34	1.96 (1.70–2.27)	<0.00001	43
Subgroup overall survival (N0, N1 and N2 patients)						
3-year (N2 patients)	3 (13,17,22)	29.78	19.51	1.12 (0.47–2.68)	0.79	35
5-year (N2 patients)	3 (8,13,18)	19.77	18.69	1.27 (0.65–2.45)	0.48	44
5-year (N0 and N1 patients)	5 (8,13,17,18,22)	57.77	37.29	2.14 (1.66–2.78)	<0.00001	13



SUPERIOR SULCUS TÜMÖRLERİNDE CERRAHI

- İlk olarak 1924 yılında radyolog Henry Pancoast tarafından tanımlanmıştır.

Akciğerin apikal bölgesinden kaynaklanan ve 2. kosta ve üzerindeki yapılardan herhangi birini invaze eden

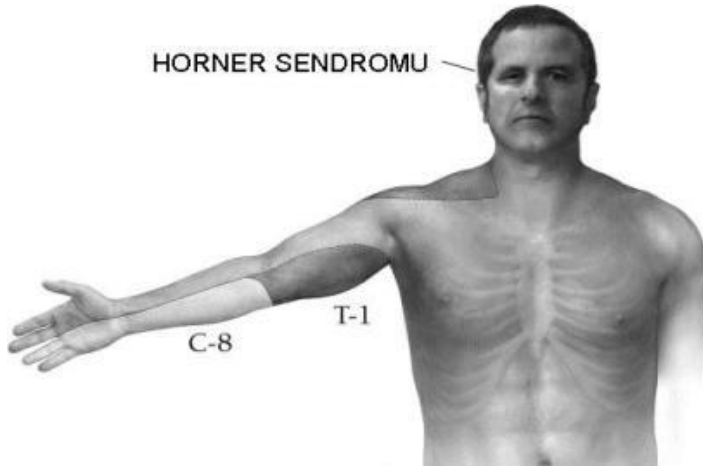


KLINİK



- Ağrı (C8, T1, T2)
- Horner Sendromu (Ptoz, Miosis, Anhidroz)
- Ellerde intrinsik kasta zayıflık/atrofi
- Yüzde şişlik ve boyundaki damarların şişmesi

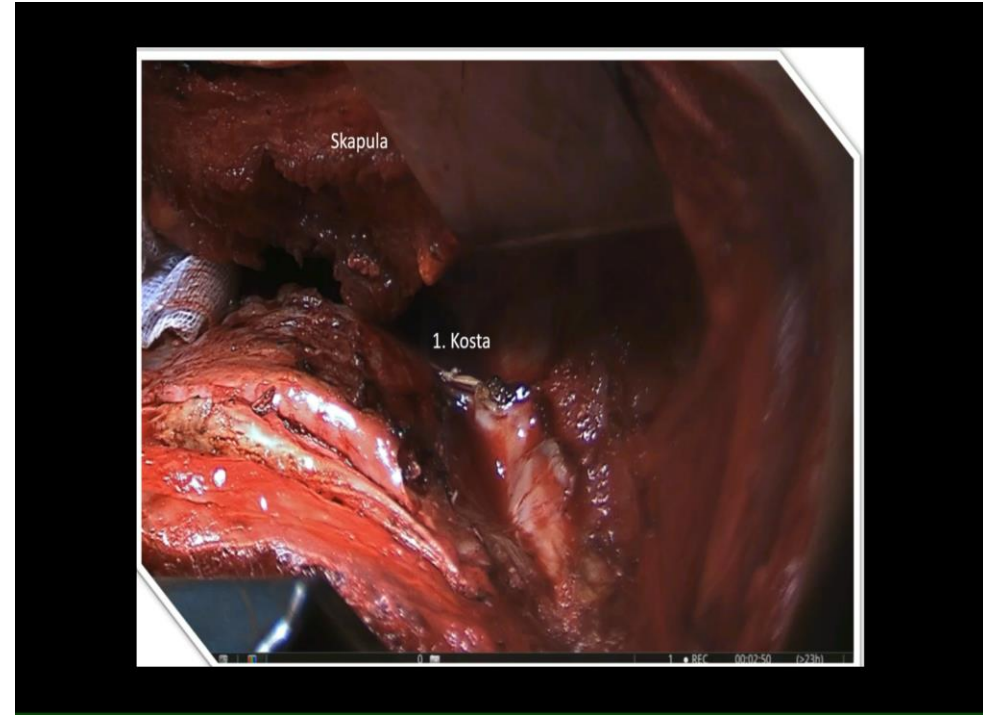
Pancoast Sendromu



KONTRAENDİKASYON

Shaw-Paulson

- Uzak Metastazlar
- N2 (mediastinal) veya N3 (kontralateral supraklaviküler) nodal hastalık
- >%50 vertebra gövdesi tutulumu
- T1 siniri üzerinde brakiyal pleksus tutulumu
- Özefagus veya Trakea Invazyonu



Induction Chemoradiation and Surgical Resection for Superior Sulcus Non–Small-Cell Lung Carcinomas: Long-Term Results of Southwest Oncology Group Trial 9416 (Intergroup Trial 0160)

Valerie W. Rusch, Dorothy J. Giroux, Michael J. Kraut, John Crowley, Mark Hazuka, Timothy Winton, David H. Johnson, Lawrence Shulman, Frances Shepherd, Claude Deschamps, Robert B. Livingston, and David Gandara

Phase II Trial of Preoperative Chemoradiotherapy Followed by Surgical Resection in Patients With Superior Sulcus Non–Small-Cell Lung Cancers: Report of Japan Clinical Oncology Group Trial 9806

Hideo Kumitoh, Haruhumi Kato, Masahiro Tsuboi, Taro Shibata, Hisao Asamura, Yukito Ichinose, Nobuyuki Katakami, Kanji Nagai, Tetsuya Mitsudomi, Akihide Matsumura, Ken Nakagawa, Hirohito Tada, and Nagahiro Saijo

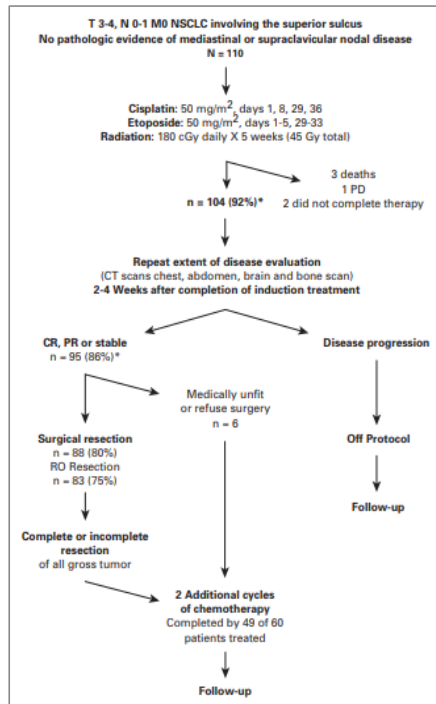


Fig 1. Study schema of Southwest Oncology Group (SWOG) 9416. *Percentages calculated based on the total number of eligible patients. Reprinted with

5 YS 54%
T3 =T4
Sağkalım
Benzer

■ Komple Rezeksiyon

5 yıllık sağkalım oranı %70

■ Inkomplet Rezeksiyonda ise

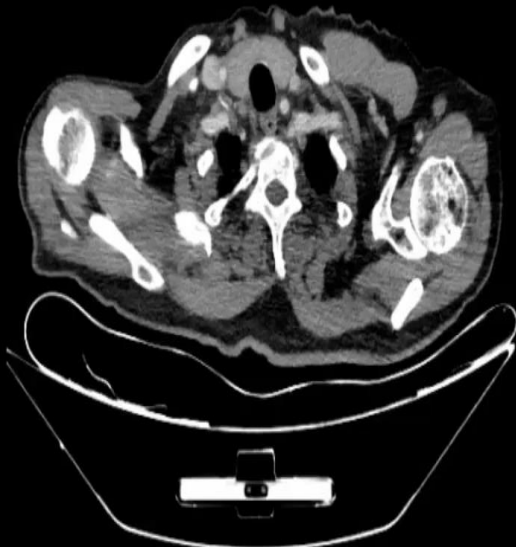
■ 5 yıllık sağkalım oranı %24

Overall survival of all eligible patients and by T status.

Table A2. Data on Surgical Resections Performed on Patients Entered onto SWOG 9416 (N = 88)



İMMUNOTERAPİ SONRASI REZEKSİYONLAR

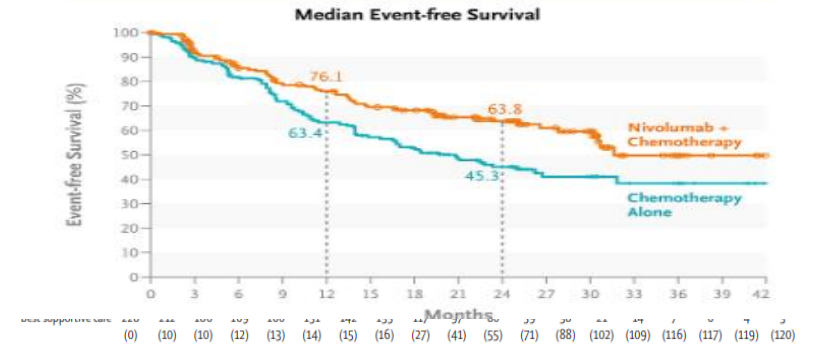


Resectable Non-Small-Cell Lung Cancer



Median Event-free Survival

Stratified hazard ratio: 0.66 (95% CI 0.50-0.88), p=0.0039



MULTIPLE PRIMER AKCIĐER KANSERLERİ

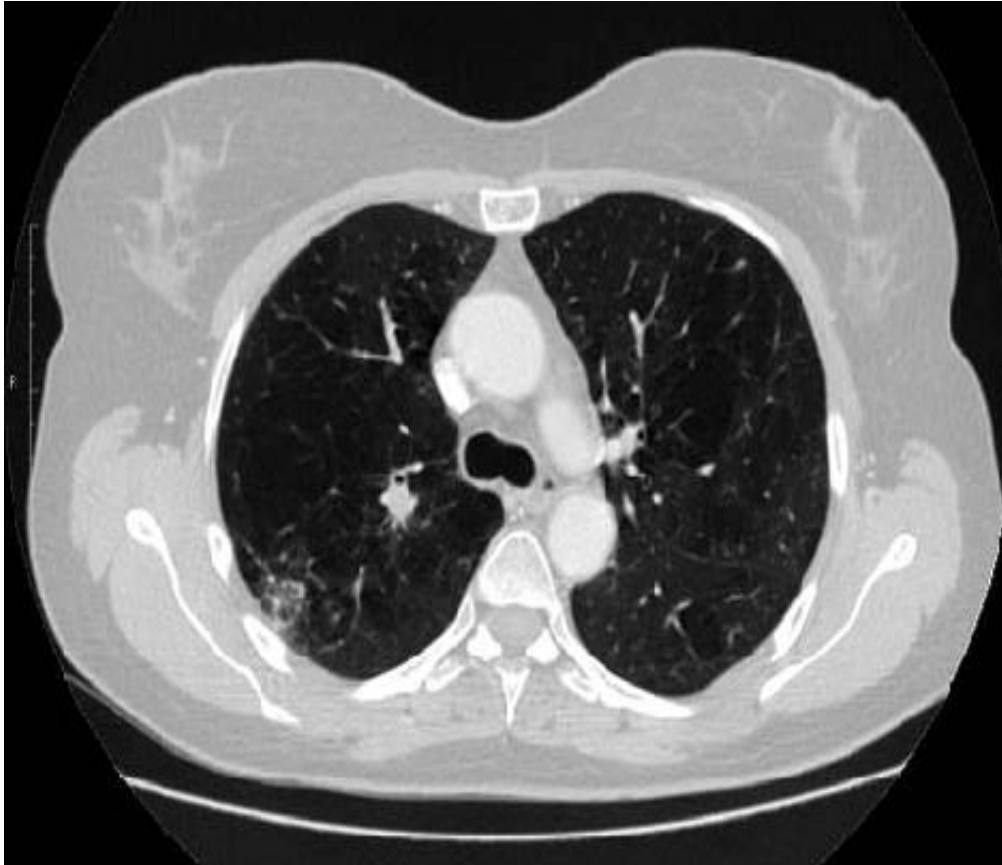
Satellit Akciđer Kanseri

Senkron Akciđer Kanseri

Metakron Akciđer Kanseri:



SATELLIT TÜMÖR SAĞKALIM?

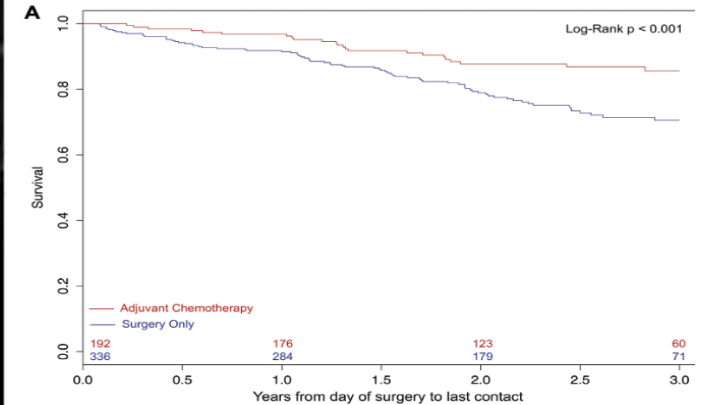


Adjuvant Chemotherapy for T3 Non-Small Cell Lung Cancer with Additional Tumor Nodules in the Same Lobe



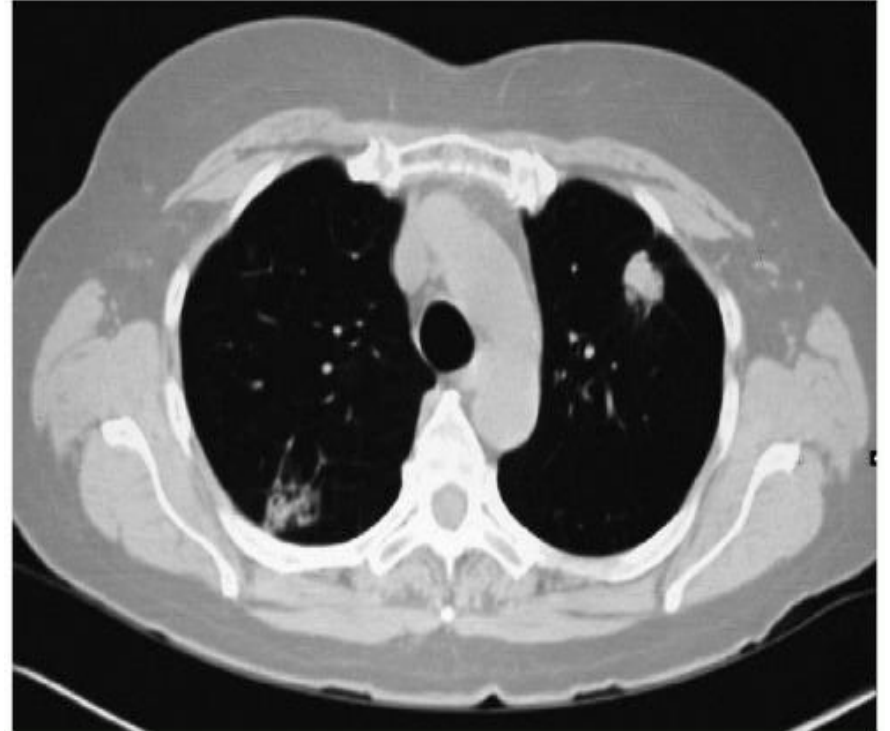
Michelle C. Salazar, MD, Joshua E. Rosen, BSc, Brian N. Arnold, MD, Daniel C. Thomas, MD, Anthony W. Kim, MD, Frank C. Detterbeck, MD, Justin D. Blasberg, MD, Daniel J. Boffa, MD*

Section of Thoracic Surgery, Department of Surgery, Yale School of Medicine, New Haven, Connecticut



SENKRON TUMORLER

Akciğer kanserli bir olguda tanı anında* ikinci primer akciğer kanseri varlığına senkron akciğer kanseri denilmektedir



İki operasyon arası bekleme süresi 4-6 hafta önerilmektedir.



Yazar	5ySK
Zhang 2016	%77.6
Yang 2015	%75
Hattori 2014	%71.7
Liu 2015	%40.5
Yu 2013	%69.6
Fabian 2011	%53
Voltolini 2010	%34
DeLeyn 2008-bilateral	%38
Chang 2007	%37
Trousse 2007	%34
Feng 2005	%20
Aziz 2002	%10
Rea 2001	%20
vanRens 2001	%19
Pommier 96	%45

AYNI VS FARKLI HISTOPATOLOJİ?

First Author	Year	N	Definition	% incidental ^a	% resected	% limited resection ^b	% Op mort	% 5- year Survival		% 5-year Survival by Histotype		
								All	pI	same	diff	p
Yu ⁶⁶	2013	97	Girard	-	100	51	0	70	70 ^c	65	74	.3
Zuin ¹⁰⁶	2013	23	M&M?	-	100	-	-	40	-	-	-	-
Shah ^{d 59}	2012	47	- ^d	0	100	83	2	29	-	23	40	.9
Fabian ⁶⁰	2011	67	-	-	100	60	2	53	-	49	42	.9
Jung ⁷⁰	2011	32	M&M	3	100	50	9	61	69	100	36	.003
Kocaturk ⁶²	2011	26	unclear	-	92	38	8	50	-	25	78	.2
Finley ⁶¹	2010	175	Girard	42	100	27	1	52	64 ^e	(67) ^f	(50) ^f	>.05
Voltolini ⁶⁵	2010	50	-	0	>90	65	7	31	57	34	33	.6
Riquet ⁵⁷	2008	118	unclear	-	100	16	5	26	-	33	20	.4
Rostad ⁵⁸	2008	94	unclear	79	100	16	9	33	-	No diff		.3
De Leyn ^{d 55}	2008	36	- ^d	-	100	72	3	38	-	31	45	.3
Trousse ¹⁰⁷	2007	125	M&M?	-	100	14	11	34	51	-	-	-
Chang ¹⁰⁸	2007	92	-	-	100	11	1	35	53	-	-	-
Vansteenkiste ¹⁰⁹	2001	35	unclear	-	100	23	9	33	-	-	-	-
Van Rens ¹¹⁰	2000	85	M&M?	32	100	13	14	20	23	No diff		-
Okada ⁵⁰	1998	28	M&M?	39	96	7	0	70	79 ^g	-	-	-
Antakli ⁵¹	1995	26	Antakli	19	92	42	-	5	-	-	-	-
Average ^h				27		37	5	40	58	45	46	



- Senkron Akciğer Kanseri

- Farklı histolojik tip

- Aynı histoloji
 - Moleküler genetik çalışmalar
 - Bir taraf in situ CA
 - Farklı lob veya akciğer ve ortak lenfatik yolda tümör yok
 - Ekstrapulmoner metastaz olmaması

- Metakron Akciğer Kanseri

- Farklı histolojik tip

- < 2 yıl metastaz
- 2-4 yıl Gri bölge
 - Aynı taraf ise = lokal nüks = cerrahi
 - Karşı taraf ise sistemik met = olguya göre hareket et
- >4 yıl

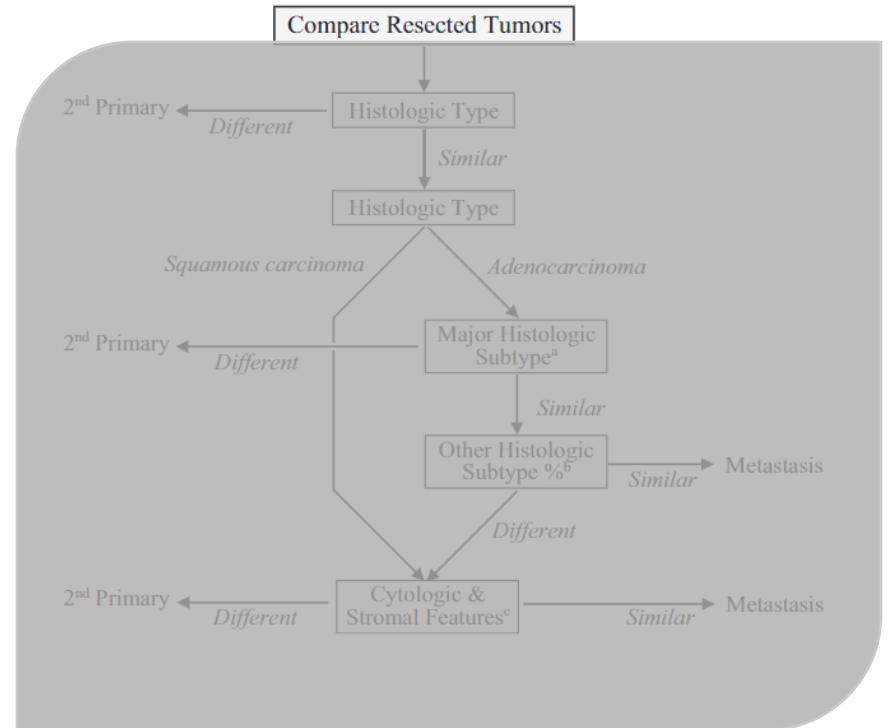


MULTIPLE PRIMER AKCIĞER KANSERLERİ

ORIGINAL ARTICLE

The IASLC Lung Cancer Staging Project: Background Data and Proposed Criteria to Distinguish Separate Primary Lung Cancers from Metastatic Foci in Patients with Two Lung Tumors in the Forthcoming Eighth Edition of the TNM Classification for Lung Cancer

Frank C. Detterbeck, MD,^{a,*} Wilbur A. Franklin, MD,^b Andrew G. Nicholson, MD, Nicolas Girard, MD,^d Douglas A. Arenberg, MD,^e William D. Travis, MD,^f Peter J. Mazzone, MD,^g Edith M. Marom, MD,^h Jessica S. Donington, MD,ⁱ Lynn T. Tanoue, MD,^j Valerie W. Rusch, MD,^k Hisao Asamura, MD,^l Ramón Rami-Porta, MD,^{m,n} on behalf of the IASLC Staging and Prognostic Factor Committee, Advisory Boards, and the Multiple Pulmonary Sites Workgroup**

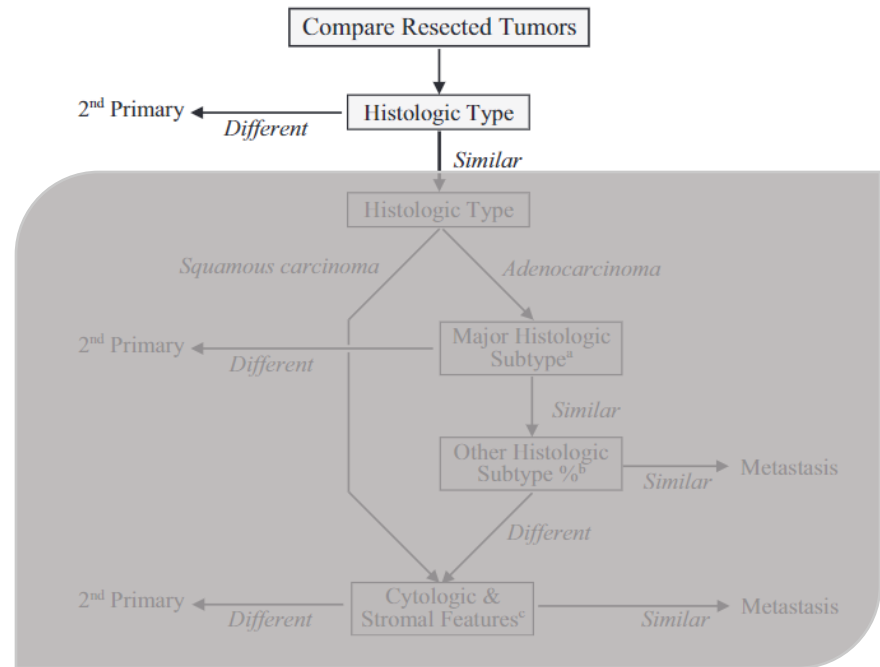


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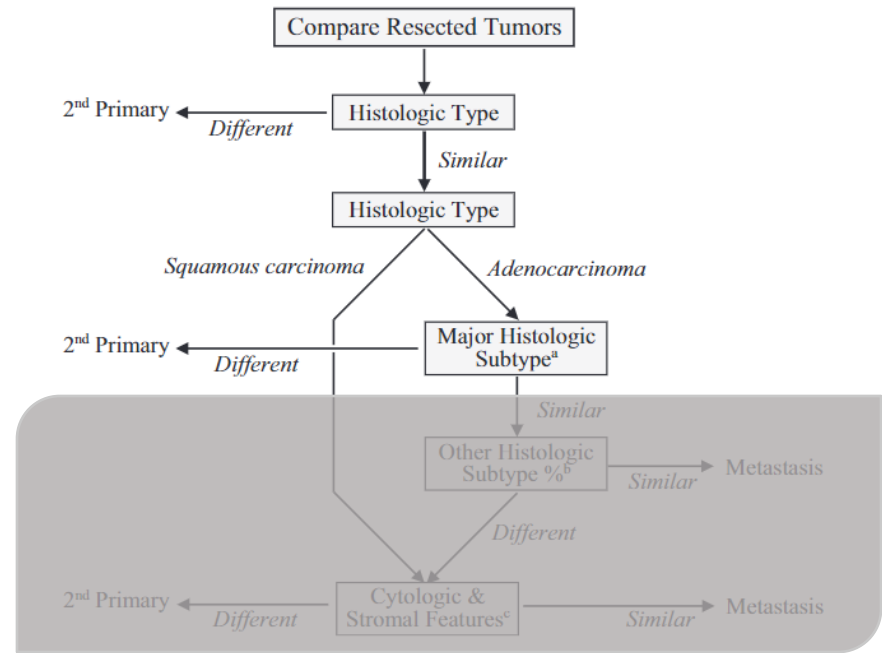


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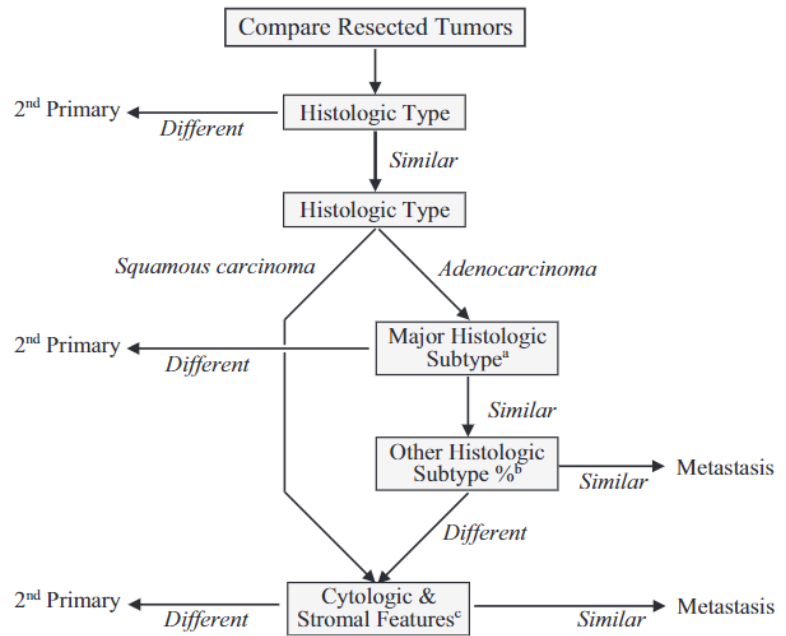


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MULTIPLE PRIMER AKCIĞER KANSERLERİ



The Journal of Thoracic and Cardiovascular
Surgery

Volume 70, Issue 4, October 1975, Pages 606-612



The Annals of Thoracic Surgery

Volume 59, Issue 4, April 1995, Pages 863-867



Multiple primary lung cancers

Nael Martini M.D. (Attending Surgeon, Chief, Thoracic Service)

, Myron R. Melamed M.D. (by invitation) (Attending Pathologist, Chief, Cytology Service)

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MD Tamim Antakli

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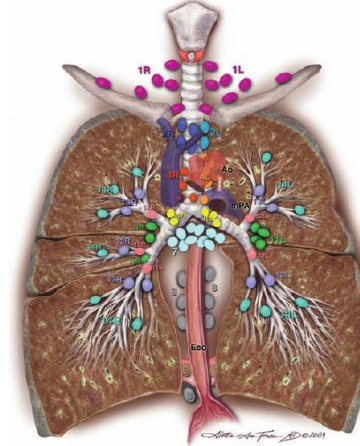
[https://doi.org/10.1016/S0022-5223\(19\)40289-4](https://doi.org/10.1016/S0022-5223(19)40289-4)



(9. EVRELEMEDEN BEKLENTİ)

N Faktörü

- Skip Metastazlar?
- Lenf Nodu Sayıları
- Metastatik İstasyonlar
- Oranlamalar/Volumetrik Değerlendirme
- Mikrometastaz



Supraclavicular zone
1 Low cervical, supraclavicular, and sternal notch nodes

Superior mediastinal nodes

Upper zone
2R Upper paratracheal (right)
2L Upper paratracheal (left)
3a Prevascular
3p Retrotracheal
4R Lower paratracheal (right)
4L Lower paratracheal (left)

Aortic nodes

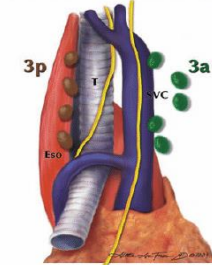
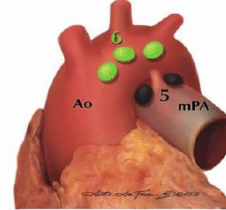
AP zone
5 Subaortic
6 Para-aortic (ascending aorta or phrenic)

Inferior mediastinal nodes

Subcarinal zone
7 Subcarinal
Lower zone
8 Paraesophageal (below carina)
9 Pulmonary ligament

N1 nodes

Hilar/interlobar zone
10 Hilar
11 Interlobar
Peripheral zone
12 Lobar
13 Segmental
14 Subsegmental



The International Association for the Study of Lung Cancer Lung Cancer Staging Project

Proposals for the Revision of the N Descriptors in the Forthcoming 8th Edition of the TNM Classification for Lung Cancer

Hisao Asamura, MD,* Kari Chansky, MS,† John Crowley, PhD,† Peter Goldstraw, MBChB, FRCS,‡
Valerie W. Rusch, MD,§ Johan F. Vansteenkiste, MD,|| Hirokazu Watanabe, MD,¶ Yi-Long Wu, MD,#
Marcin Zielinski, MD,** David Ball, MD,†† and Ramon Rami-Porta, MD,‡‡§§ On behalf of the
International Association for the Study of Lung Cancer Staging and Prognostic Factors Committee,
Advisory Board Members, and Participating Institutions|||



LENF NODU DEĞERLENDİRMESİ VE BEKLENTİLER

Skip Metastazlar

Lenf Nodu Sayıları

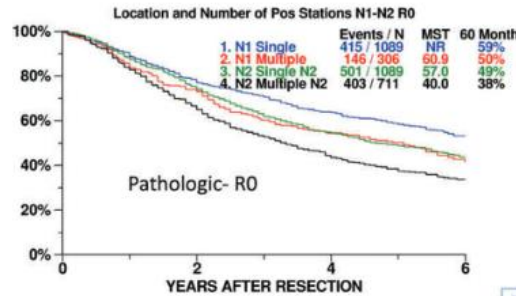
Metastatik

İstasyonlar

Volumetrik

Değerlendirme

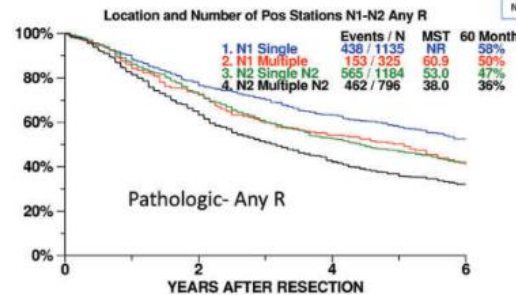
Oranlama



N1a vs N1b vs N2a vs N2b
Comparisons
Adjusted for Histology (adeno vs others), Sex, Age 60+, and Region.
(Cox PH regression on R0 cases)

comparison	HR	P
N1b vs N1a	1.40	0.0005
N2a vs N1b	1.04	0.6798
N2b vs N2a	1.47	<.0001

N1 Single = N1a
N1 Multiple = N1b
N2 Single N2 = N2a
N2 Multiple N2 = N2b



N1a vs N1b vs N2a vs N2b
Comparisons
Adjusted for Histology (adeno vs others), Sex, Age 60+, R0 resection, and Region.
(Cox PH regression on All cases)

comparison	HR	P
N1b vs N1a	1.38	0.0005
N2a vs N1b	1.08	0.4133
N2b vs N2a	1.41	<.0001



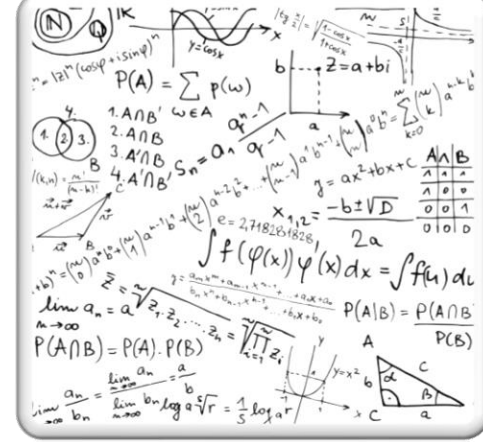
N DURUMUN ÖZETİ

- **pN1a** tek N1 istasyon tutulumu.
- **pN1b** multiple N1 istasyonu katılımı.
- **pN2a1** tek "skip" N2 istasyon katılımı.
- **pN2a2** pN1 + tek N2 istasyonu.
- **pN2b** çoklu N2 istasyonu katılımı.



LENF NODU ORANLARI

■ Pozitif Lenf Nodu / Total Lenf Nodu



LENF NODU DEĞERLENDİRMESİ VE BEKLENTİLER

Skip Metastazlar

Lenf Nodu Sayıları

Metastatik

İstasyonlar

Volumetrik

Değerlendirme

Oranlama

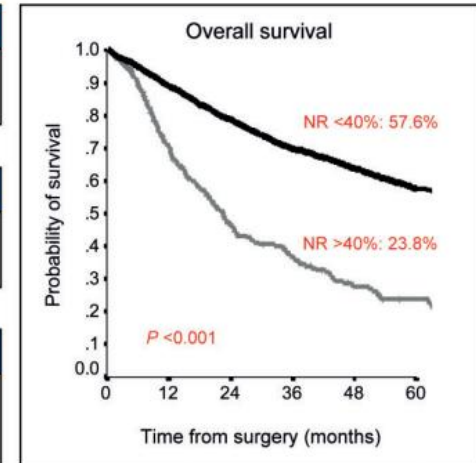
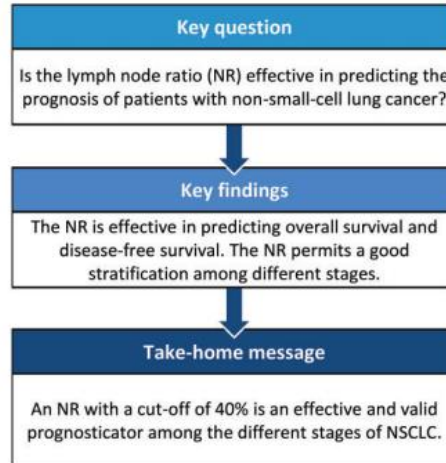
European Journal of Cardio-Thoracic Surgery 55 (2019) 405–412
doi:10.1093/ejcts/ezy311 Advance Access publication 6 September 2018

ORIGINAL ARTICLE

Cite this article as: Chiappetta M, Leuzzi G, Sperduti I, Bria E, Mucilli F, Lococo F et al. Lymph-node ratio predicts survival among the different stages of non-small-cell lung cancer: a multicentre analysis. Eur J Cardiothorac Surg 2019;55:405–12.

Lymph-node ratio predicts survival among the different stages of non-small-cell lung cancer: a multicentre analysis†

Marco Chiappetta^{a,b,*}, Giovanni Leuzzi^c, Isabella Sperduti^d, Emilio Bria^{b,e}, Felice Mucilli^f,
Filippo Lococo^g, Lorenzo Spaggiari^h, Giovanni Battista Rattoⁱ,
Dier Luini Filosso^j and Francesco Esposito^a





LENF NODU ORANLARI METASTATİK İSTASYON SAYISI

Interactive Cardiovascular and Thoracic Surgery 33 (2021) 541–549
doi:10.1093/icvts/ivab119 Advance Access publication 17 May 2021

ORIGINAL ARTICLE

Cite this article as: Aksoy Y, Çitak N, Obuz C, Metin M, Sayar A. Does anatomical location-based metastatic lymph node density affect prognosis in lung cancer patients? *Interact CardioVasc Thorac Surg* 2021;33:541–9.

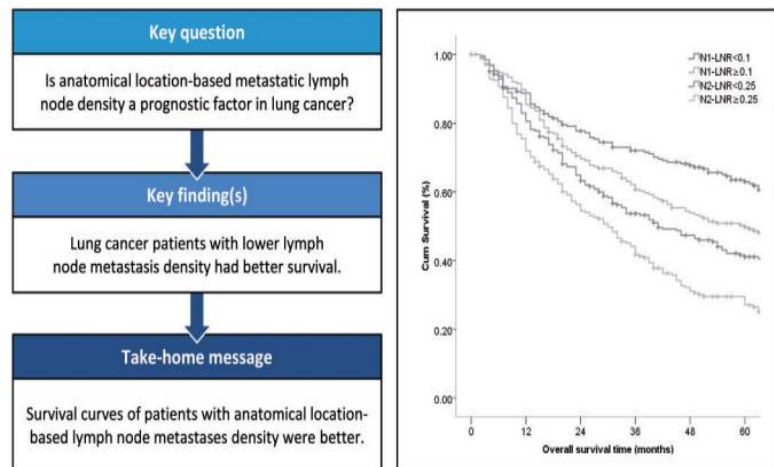
Does anatomical location-based metastatic lymph node density affect prognosis in lung cancer patients?

Yunus Aksoy^{a,1}, Necati Çitak^{b,*,1}, Cigdem Obuz^a, Muzaffer Metin^a and Adnan Sayar^b

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^b Thoracic Surgery, Bakirkoy Dr Sadi Konuk Training and Research Hospital, Istanbul, Turkey

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ACTA CHIRURGICA BELGICA
<https://doi.org/10.1080/00015458.2021.1932181>



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ORIGINAL PAPER

The effect of lymph node ratio on survival in non-small-cell lung cancer

Celal Bugra Sezen^a, Cem Emrah Kalafat^a, Mustafa Vedat Doğru^a, Cemal Aker^a, Volkan Erdogu, Ozkan Saydam^a and Muzaffer Metin^a

Department of Thoracic Surgery, Science of Health University, Yedikule Chest Diseases and Thoracic Surgery Education and Research Hospital, Istanbul, Turkey

ABSTRACT

Background: The aim of this study was to evaluate the effect of prognostic factors and lymph node ratio (LNR) on survival in patients with resected non-small-cell lung cancer (NSCLC).

Methods: Data from 421 patients with NSCLC who underwent complete resection between 2009 and 2015 were evaluated retrospectively. LNR was defined as the ratio of positive lymph nodes to the total number of lymph nodes removed. Associations between overall survival (OS) and LNR, node (N) status, and histopathologic status were evaluated.

Results: The 5-year survival rate was 42.5% among all patients and 26.6% for patients aged 65 years or older. In the multivariate analysis, age ≥ 65 years, advanced-stage disease, non-squamous cell carcinomas, pN status, and having multiple-station pN2 and multiple-station pN1 disease were found to be poor prognostic factors ($p < 0.05$). There was no statistical difference in survival between patients with LNR (hazard ratio: 1.04, $p = 0.45$).

Conclusion: The results of our study indicate that pN stage, histopathologic type, pT stage, and geriatric age were the most important poor prognostic factors associated with survival after NSCLC resection. Although LNR is a factor associated with survival in gastrointestinal cancers, it did not impact survival in our study.

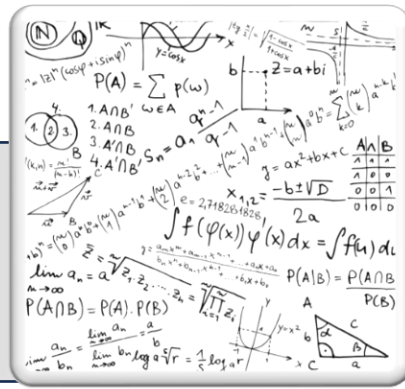
ARTICLE HISTORY

Received 9 March 2021
Accepted 15 May 2021

KEYWORDS

Lung cancer staging; lymph node ratio; survival; non-small cell lung cancer





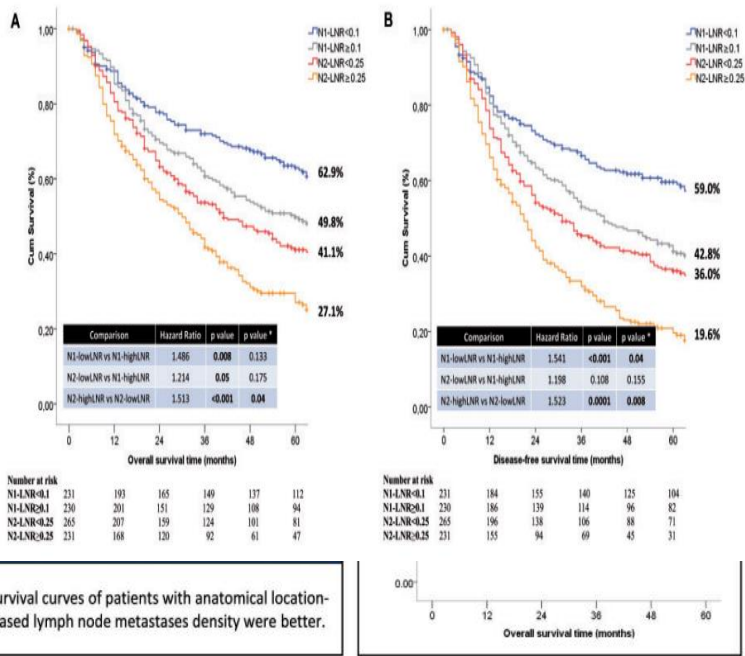
LENF NODU ORANLARI

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Y. Aksoy et al. / Interactive CardioVascular and Thoracic Surgery



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Table 3. Multivariate analysis of factor affecting survival.

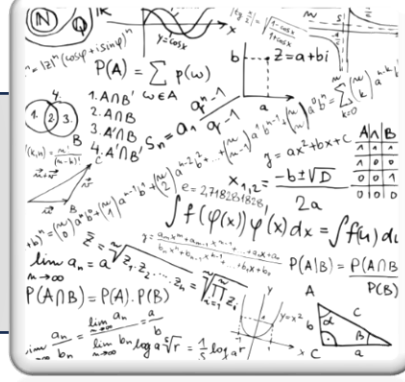
Variable	HR (95% CI)	p-Value
Age (years)		
<65	1.6 (1.2–2.1)	<0.001
>65		
Pathology		
Adeno Ca		<0.001
SqCC	0.6 (0.5–0.8)	0.006
Other*	2.1 (1.2–3.9)	0.008
pT stage		
1		0.005
2	1.3 (0.9–1.8)	0.133
3	1.8 (1.2–2.7)	0.002
4	1.7 (1.2–2.6)	0.004
pN status		
pN1	1.6 (1–2.6)	0.02
pN2		
N1 status		
Single pN1	0.72 (0.5–0.9)	0.03
Multiple pN1		
N2 status		
Single pN2	0.65 (0.4–1.01)	0.05
Multiple pN2		
Lymph node ratio	1.04 (0.9–1.01)	0.45

CI: confidence interval; HR: hazard ratio; OS: overall survival; Adeno Ca: adenocarcinoma; SqCC: squamous cell carcinoma.
*Other: adenosquamous cell carcinoma, large cell carcinoma.

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cancer



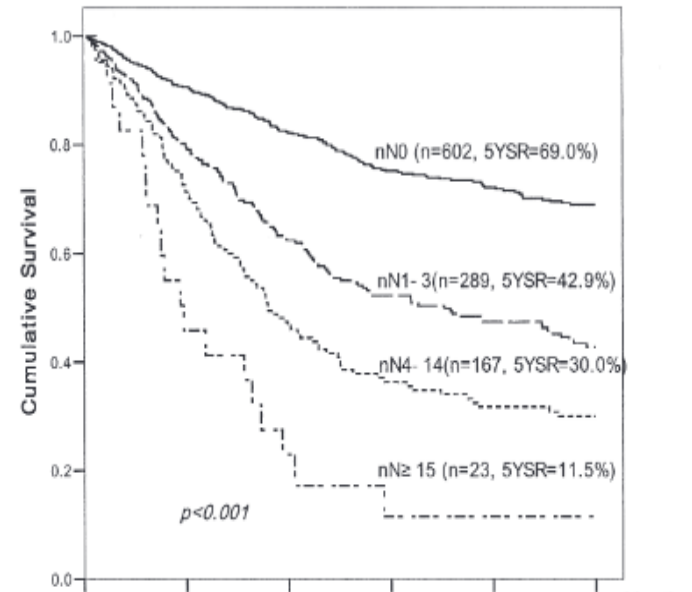
LENF NODU SAYILARI



► Table 1b Survival analyses for per station metastases and per node metastases.

	Comparison for the number of LN stations metastases			
	No. of patients	5-year survival rate	p value	HR (95% CI)
One LN station metastases vs. two LN stations metastases	191 vs. 128	54.1% vs. 42.6%	0.04 ^a	1.392 (0.989–1.959)
Two LN stations metastases vs. three LN stations metastases	128 vs. 56	42.6% vs. 40.8%	0.573	1.112 (0.727–1.754)
Three LN stations metastases vs. Four LN stations metastases	56 vs. 26	40.8% vs. 17.6%	0.04 ^a	1.647 (0.985–2.752)
Four stations metastases vs. Five stations metastases*	26 vs. 13	17.6% vs. 0%	0.153	1.689 (0.741–3.851)
	Comparison for the number of LNs metastases			
	No. of patients	5-year survival rate	p value	HR (95% CI)
One LN metastases vs. two LNs metastases	122 vs. 95	56.4% vs. 47.3%	0.156	1.339 (0.884–2.030)
Two LNs metastases vs. three LNs metastases	95 vs. 64	47.3% vs. 53.3% [#]	0.699	1.091 (0.566–1.463)
Three LNs metastases vs. four LNs metastases	64 vs. 60	53.3% [#] vs. 36.5%	0.07 ^a	1.388 (0.900–2.140)
Four LNs metastases vs. Five LNs metastases	60 vs. 23	36.5% vs. 34.8% [£]	0.493	1.213 (0.653–2.320)
Five LNs metastases vs. Six LNs metastases	23 vs. 23	34.8% [£] vs. 37.1%	0.579	0.808 (0.380–1.719)
Six LNs metastases vs. Seven LNs metastases	23 vs. 14	37.1% vs. 10.5%	0.06 ^a	1.797 (0.926–3.488)
Seven LNs metastases vs. Eight or more LNs metastases [§]	14 vs. 15	10.5% vs. 9.5%	0.204	1.655 (0.726–3.771)

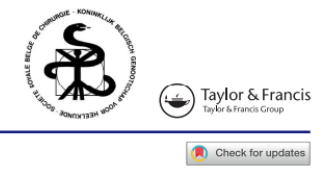
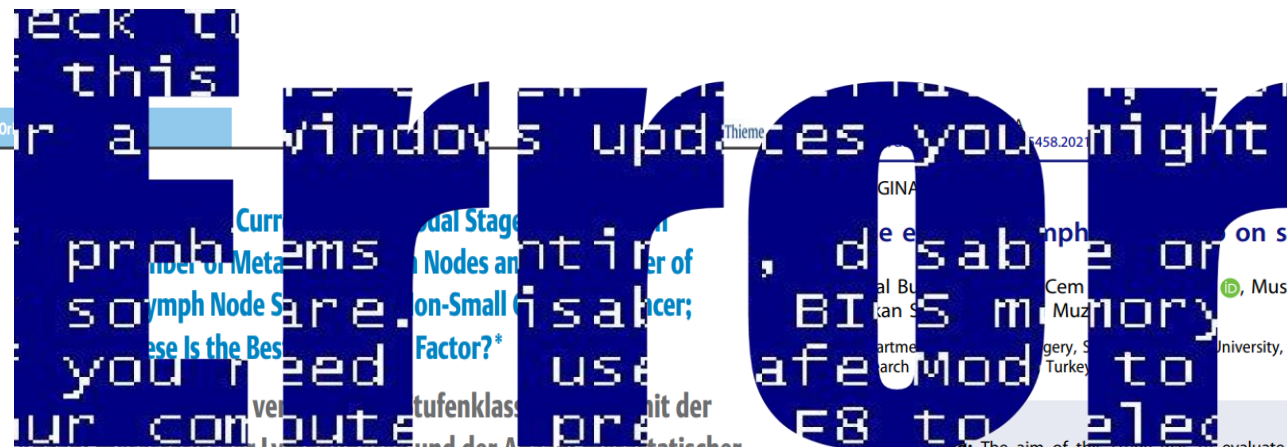
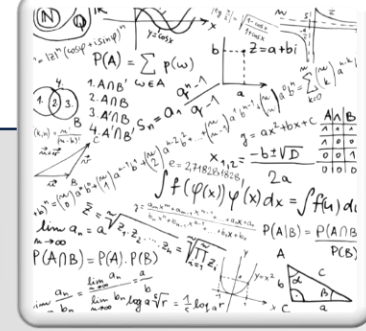
LN; lymph node, LNs; lymph nodes, HR; hazard ratio, ^a Cutpoints (thresholds) for station(s) metastases or node(s) metastases. * There were only two patients who had six or seven different LN stations metastases. Therefore these two patients weren't included for that calculation. [#] Four year survival rate, [£] Three year survival rate, [§] Six patients had eight LNs metastases, five patients had nine LNs metastases, the remaining four patients had ten or over LNs metastases



At risk	0	12	24	36	48	60
nN0	602	473	378	305	253	202
nN1-3	289	207	144	108	86	70
nN4-14	167	105	64	47	39	29
nN≥15	23	10	4	2	1	1



LENF NODU ORANLARI



Anzahl metastatischer Lymphknoten und der Anzahl metastatischer Lymphknoten für nichtkleinzelligen Lungenkrebs; welcher ist der beste Prognosefaktor?

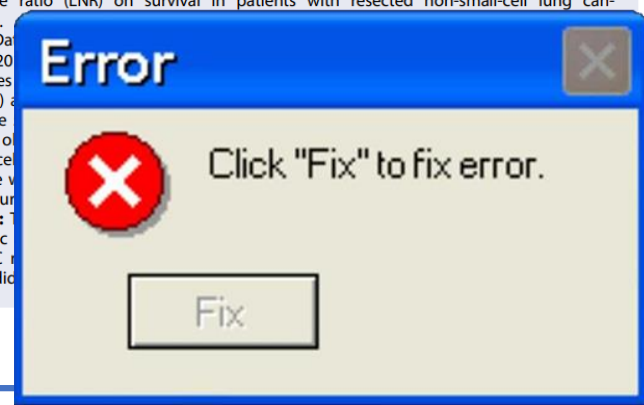
Objective: The aim of this study was to evaluate the effect of prognostic factors and lymph node ratio (LNR) on survival in patients with resected non-small-cell lung cancer (NSCLC).
Methods: Data from 2009 and 2010 were analyzed. The number of lymph nodes resected and survival (OS) were recorded.
Results: The median age was 65 years or older. The most common histology was squamous cell carcinoma. There was no significant difference in survival between the two groups.
Conclusion: The number of lymph nodes resected and geriatric assessment were not significant after NSCLC resection. In lung cancers, it did not affect survival.

on survival in non-small-cell lung cancer
 Mustafa Vedat Doğru, Cemal Aker, Volkan Erdogdu,
 University, Yedikule Chest Diseases and Thoracic Surgery Education and

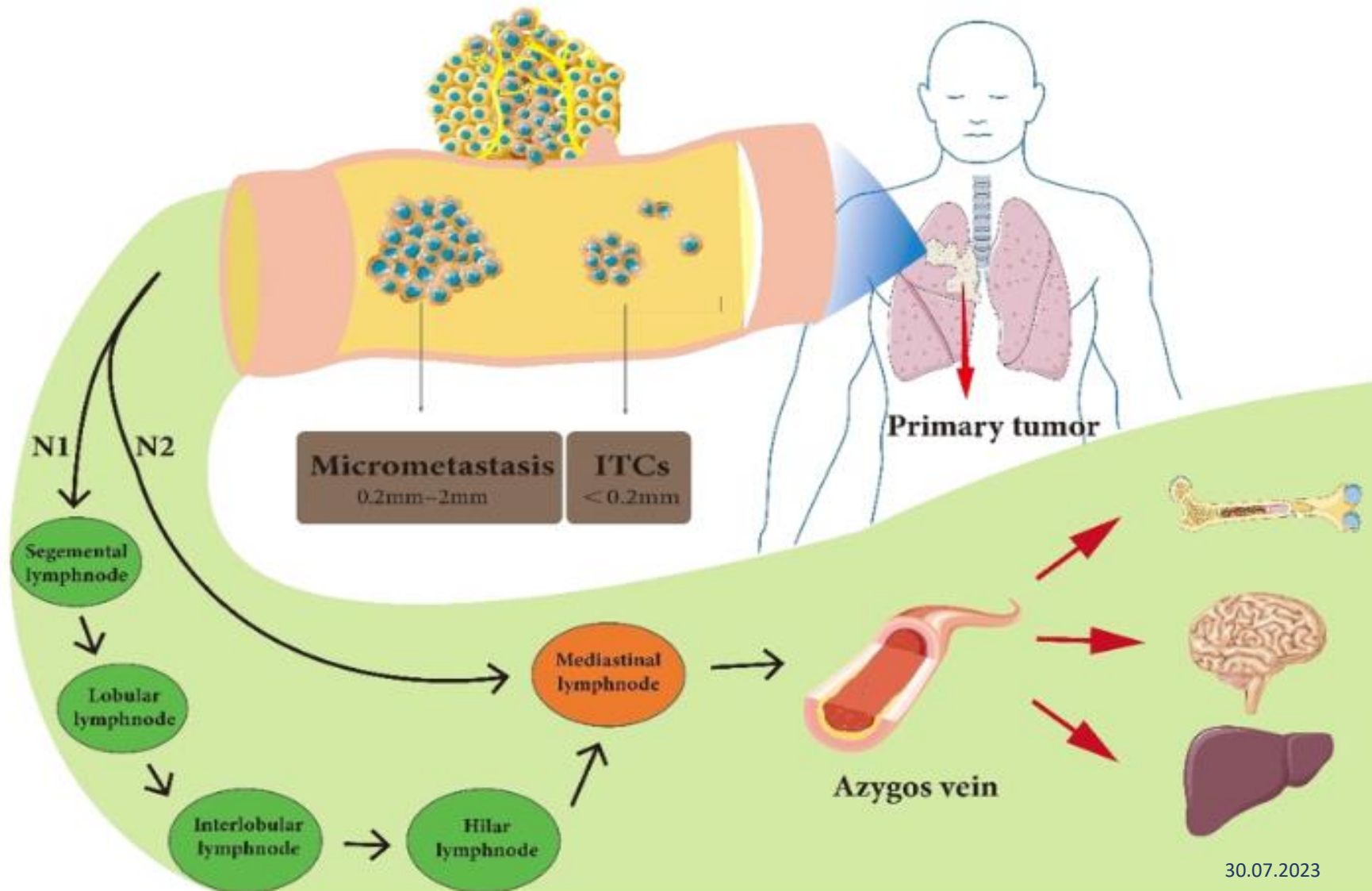
ARTICLE HISTORY
 Received 9 March 2021
 Accepted 15 May 2021

KEYWORDS
 Lung cancer staging; lymph node ratio; survival; non-small cell lung cancer

Authors
 Necati Citak¹, Yunus Aksoy², Özgür Işgörücü¹, Cigdem Obuz², Baris Acikmese¹, Songul Buyukkale¹, Muzaffer Metin², Adnan Sayar¹



MİKROMETASTAZ



9. EVRELEMEDEN BEKLENTİ

T Faktörü

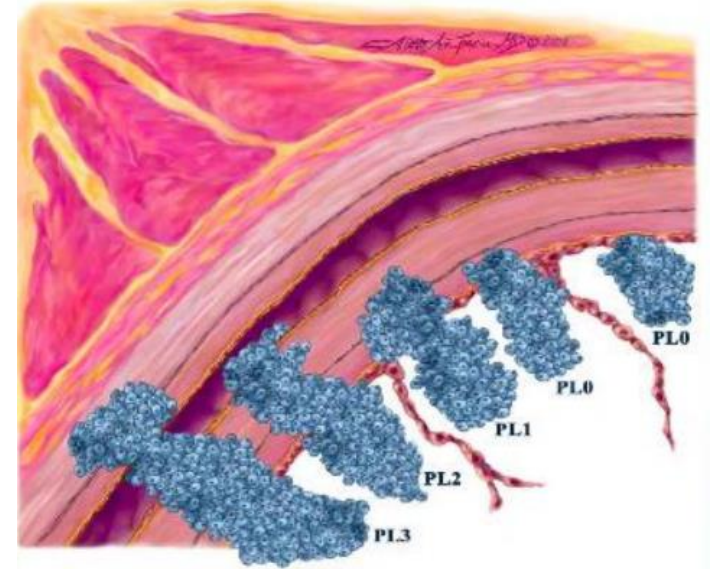
- Plevral invazyon ile T ilişkisi

PL0 tumor within the subpleural lung parenchyma or invades superficially into the pleural connective tissue beneath the elastic layer*

PL1 tumor invades beyond the elastic layer

PL2 tumor invades to the pleural surface

PL3 tumor invades into any component of the parietal pleura

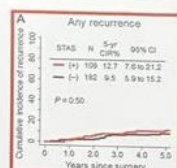
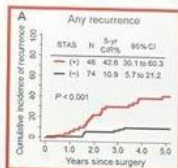
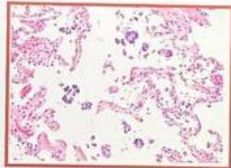


9. EVRELEMEDEN BEKLENTI

N: nodal spread

- Confirmation of the prognostic relevance of clinical and pathologic quantification of nodal disease
- ycN and ypN have worse prognosis than cN and pN

STAS



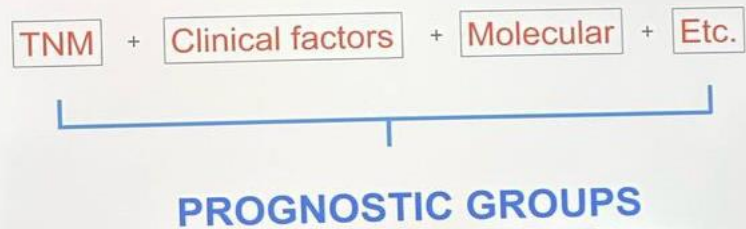
Kadota K et al. J Thorac Oncol 2015; 10: 806-814.

Sublobar resection

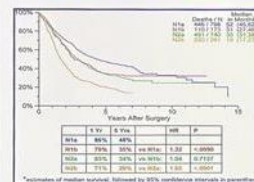
Lobectomy

**9th edition:
most probably,
STAS will be included**

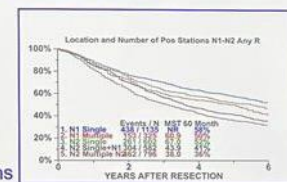
For the 9th edition...



Quantification of nodal disease



Nodal zones



Nodal stations

Rusch VW et al. J Thorac Oncol 2007; 2: 603-612.

Asamura H et al. J Thorac Oncol 2015; 10: 1675-1684.

Number of lymph nodes removed
Number of involved lymph nodes
Ratio number of involved lymph nodes/number of removed lymph nodes





ASİSTANBUL **6**
Hibrit Okul

8-9 Temmuz 2023
Radisson Blu Şişli Hotel, İstanbul

**İLGİNİZ İÇİN
TEŞEKKÜRLER**

