

# Küçük Hücre-Dışı Akciğer Kanserinde Tanı ve Tedavi

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Hastanesi

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Göğüs Cerrahisi Kliniği



# Sunum Şeması

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◆ EPİDEMİYOLOJİ VE KARSİNOGENEZ

# Sunum Şeması

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- ◆ EPİDEMİYOLOJİ VE KARSİNOGENEZ
- ◆ TANI

# Sunum Şeması

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- ◆ EPİDEMİYOLOJİ VE KARSİNOGENEZ
- ◆ TANI
- ◆ EVRELEME

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- ◆ EPİDEMİYOLOJİ VE KARSİNOGENEZ
- ◆ TANI
- ◆ EVRELEME
- ◆ EVRELEME METODLARI

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- ◆ TANI
- ◆ EVRELEME
- ◆ EVRELEME METODLARI
- ◆ TEDAVİ

# Sunum Şeması

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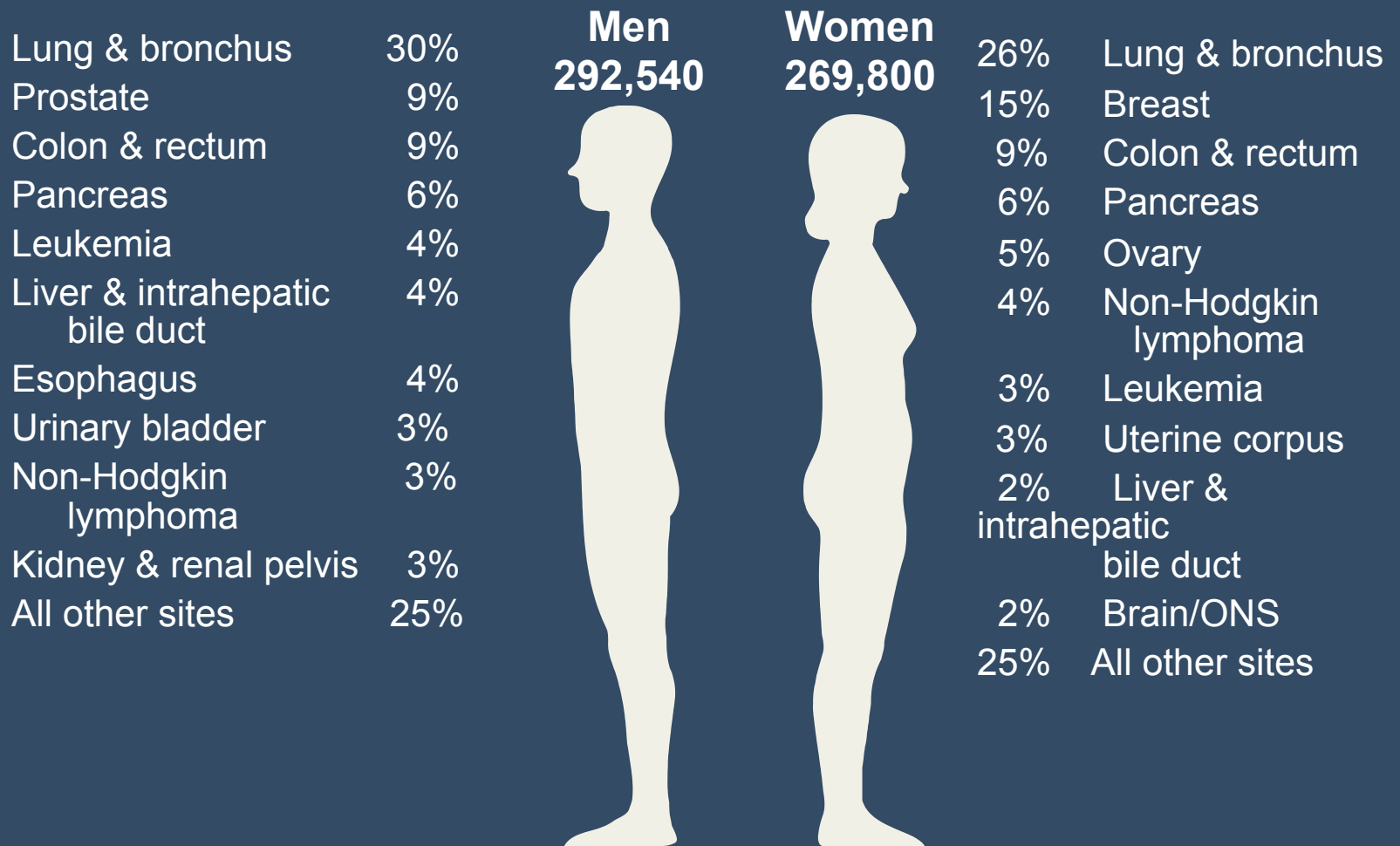
- ◆ EPİDEMİYOLOJİ VE KARSİNOGENEZ
- ◆ TANI
- ◆ EVRELEME
- ◆ EVRELEME METODLARI
- ◆ TEDAVİ
- ◆ GELECEK ÇALIŞMALAR

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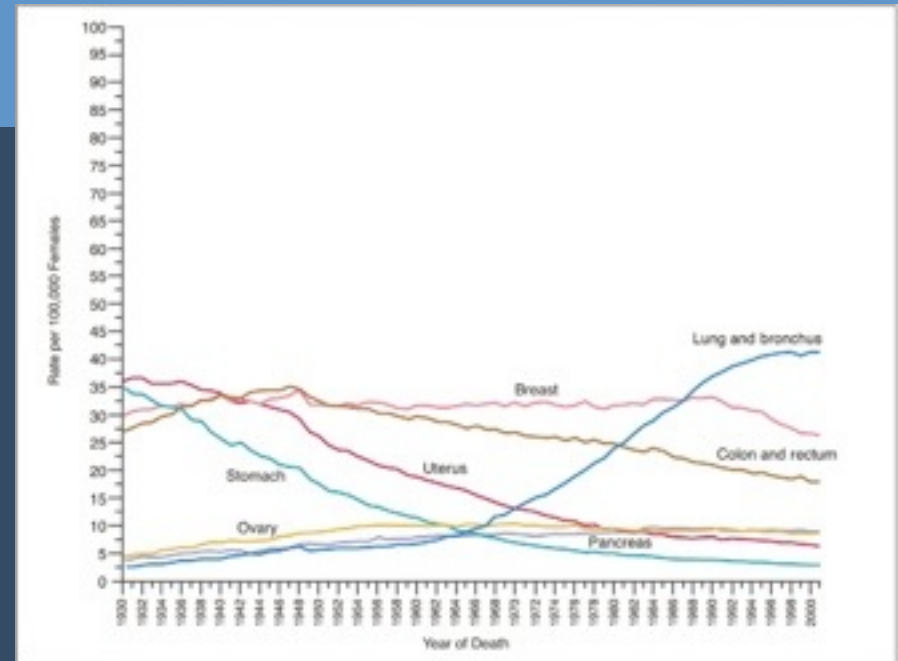
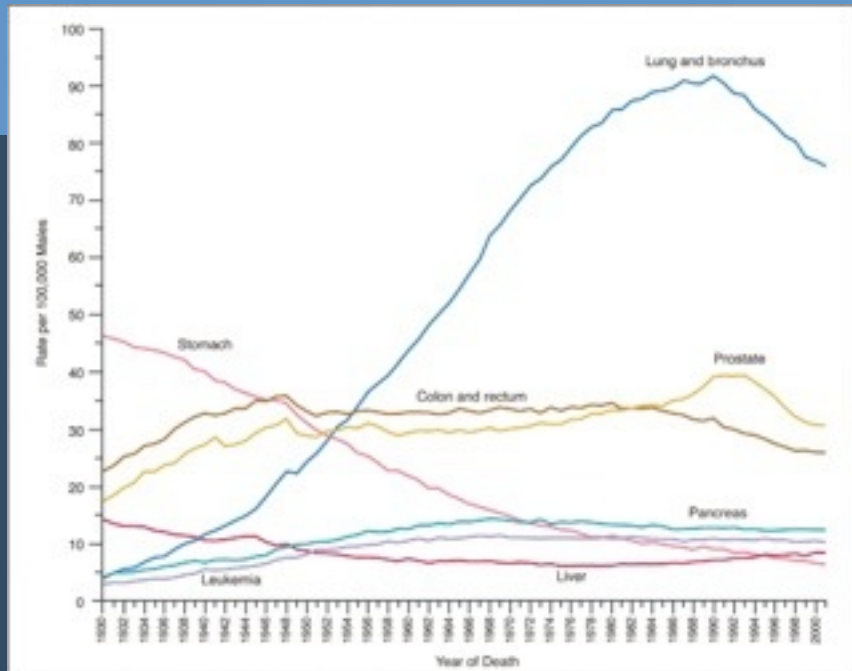
# Kanser'e Bağlı Ölümler (2008 Verileri)



ONS=Other nervous system.

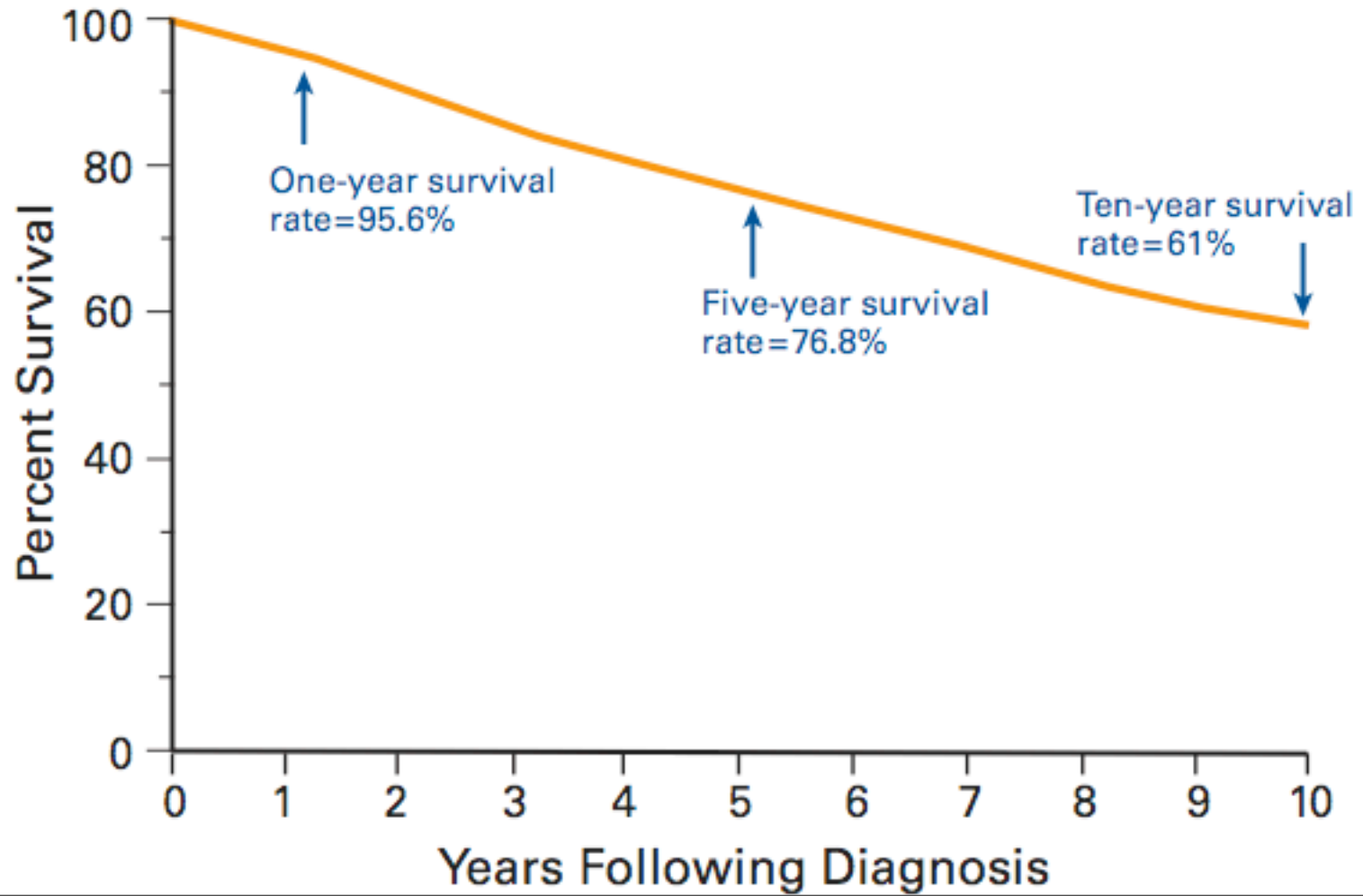
Source: American Cancer Society, 2009.

# İnsidanslar (Erkek ve Bayanlar)

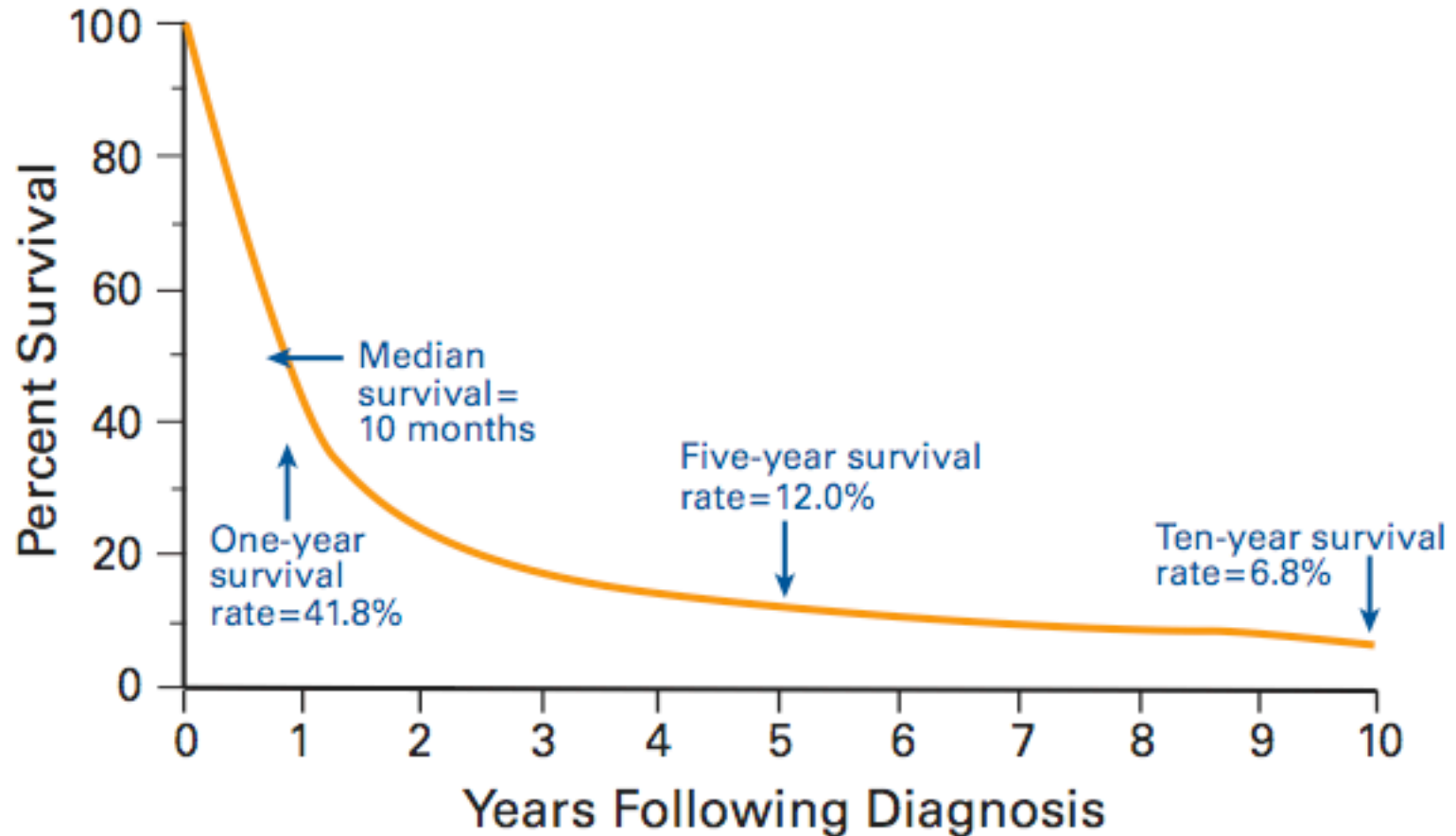


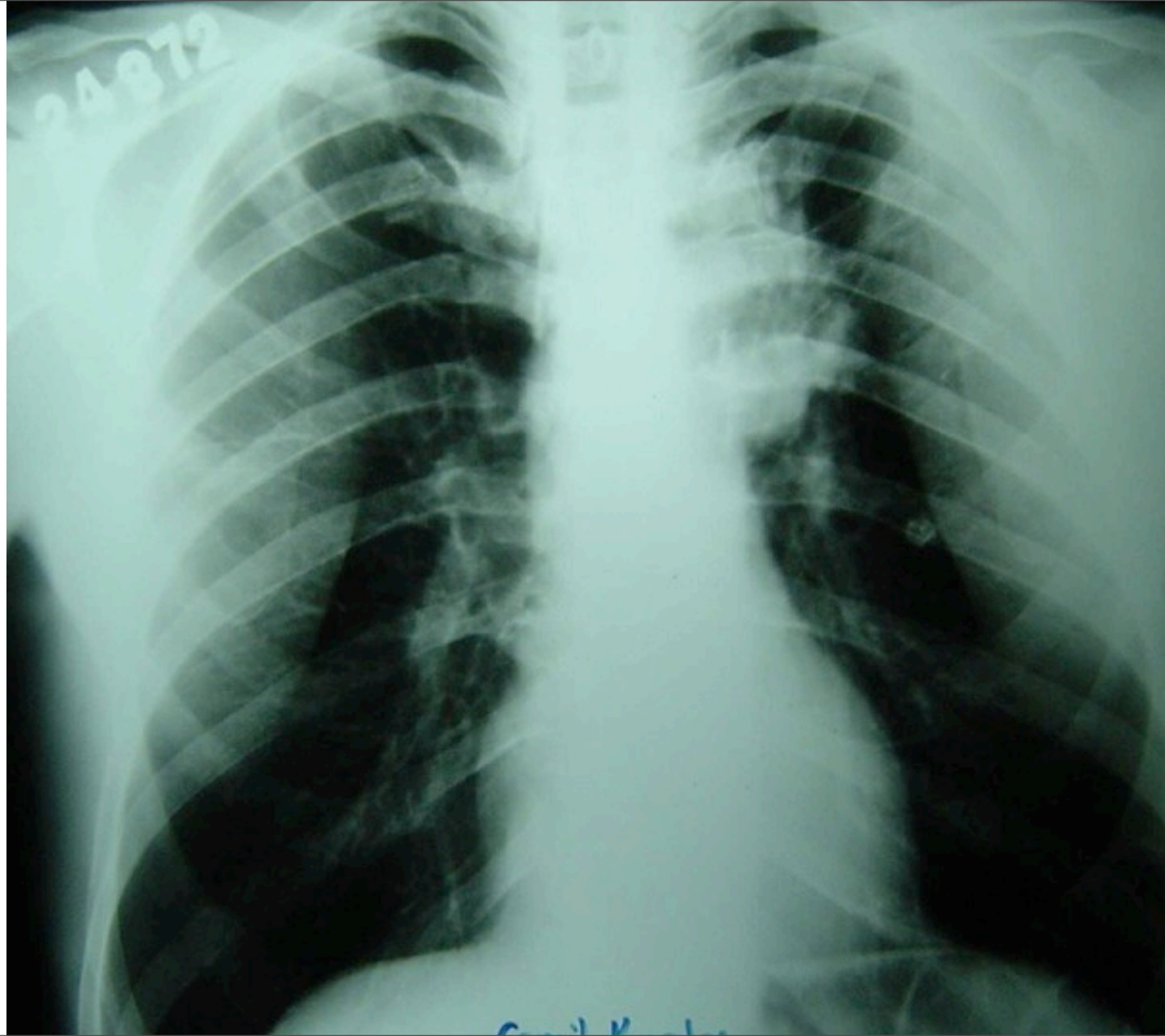
JEMAL A, MURRAY T, WARD E, ET AL: CANCER STATISTICS, 2005. CA: CANCER J CLIN 55:1,

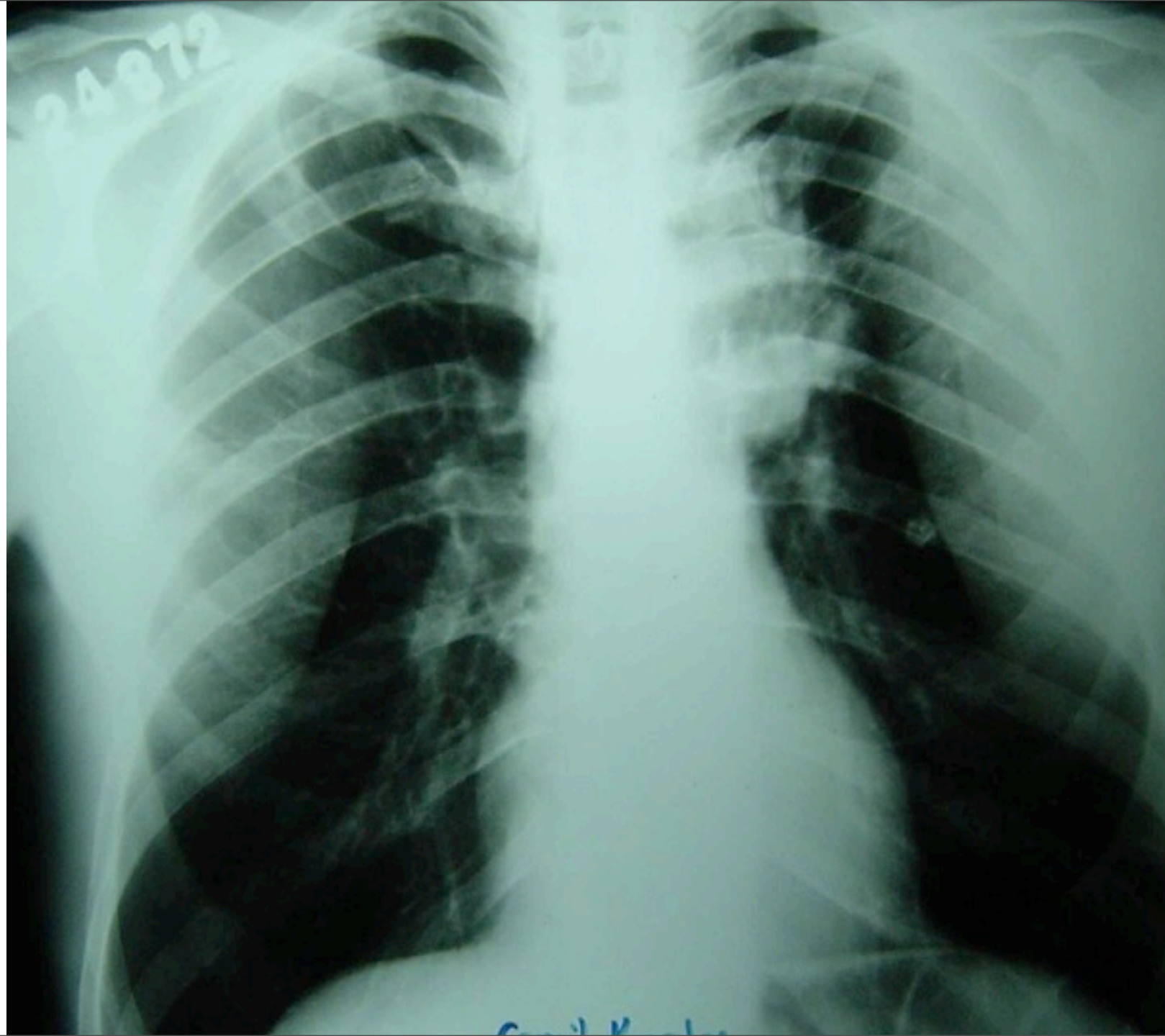
# Meme Karsinomlarında Sağkalım



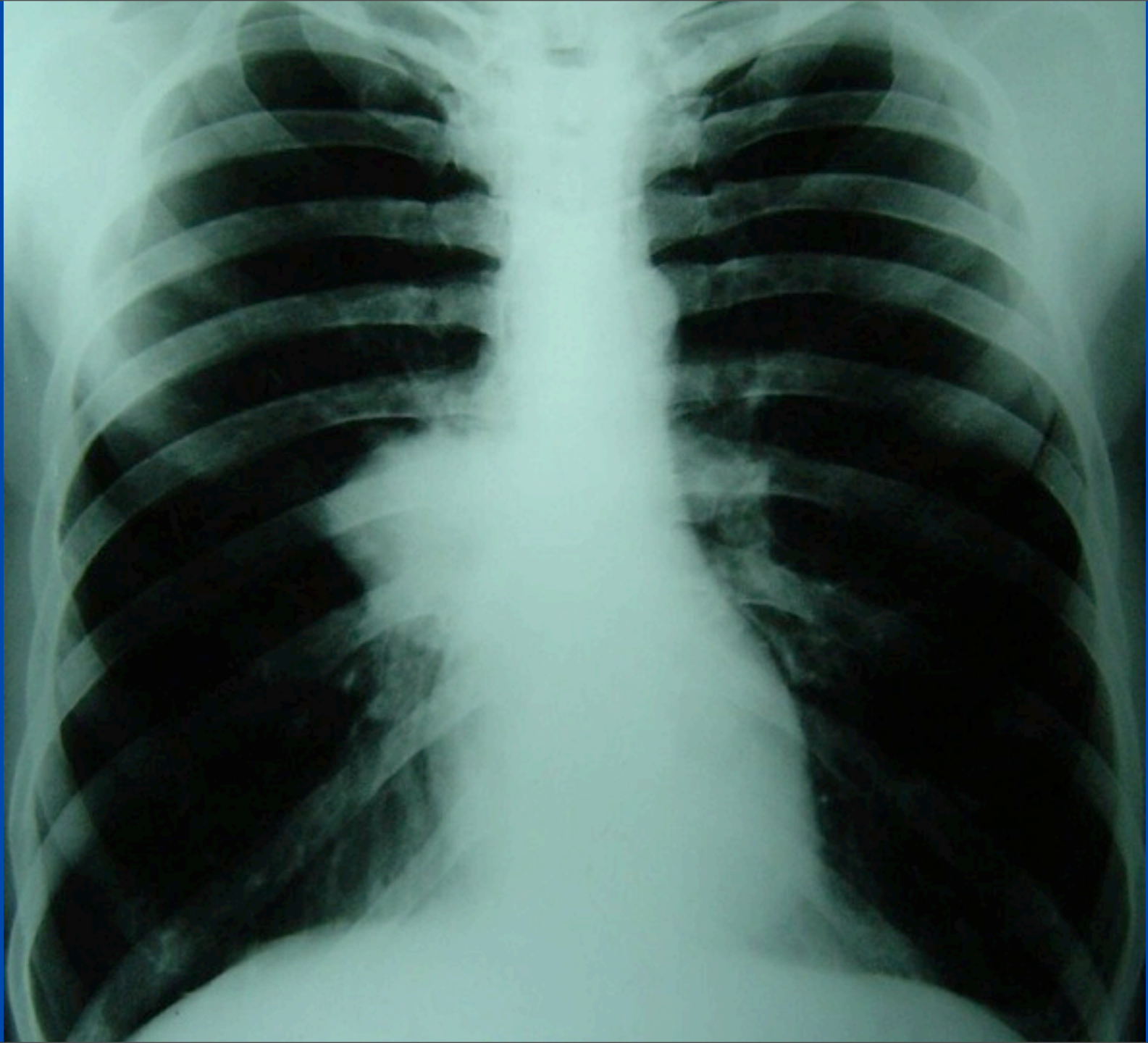
# Akciğer Karsinomlarında Sağkalım

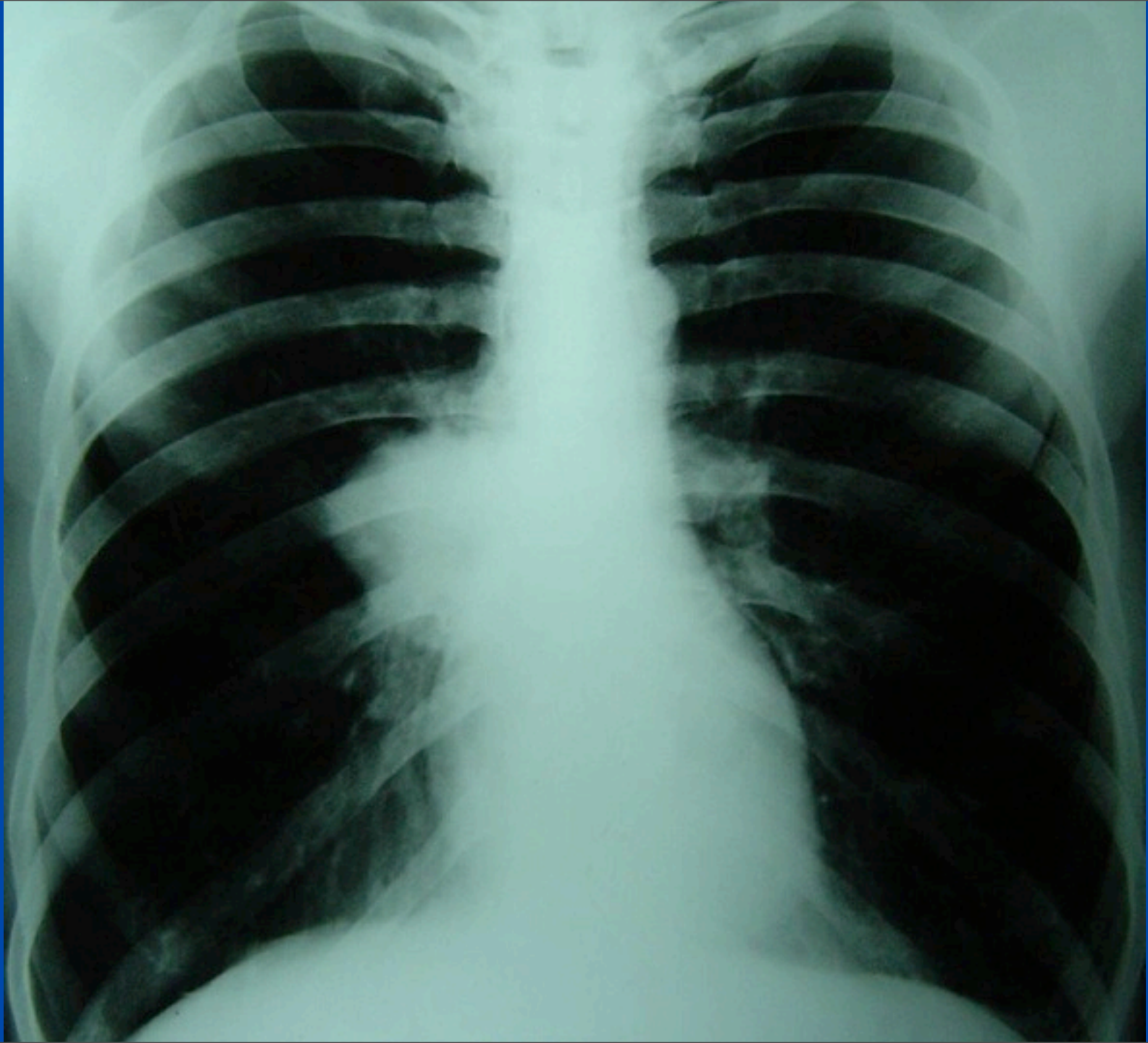


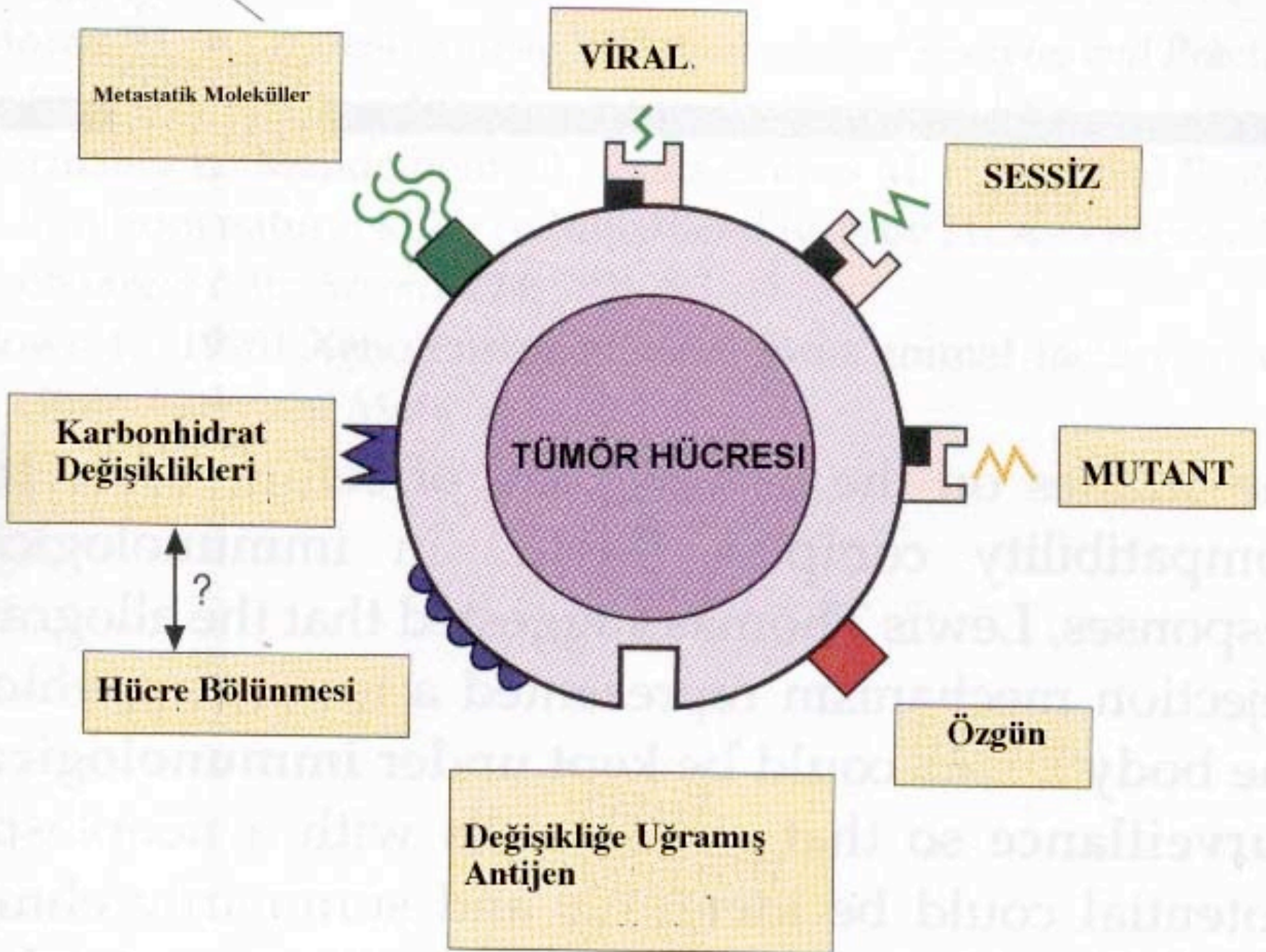


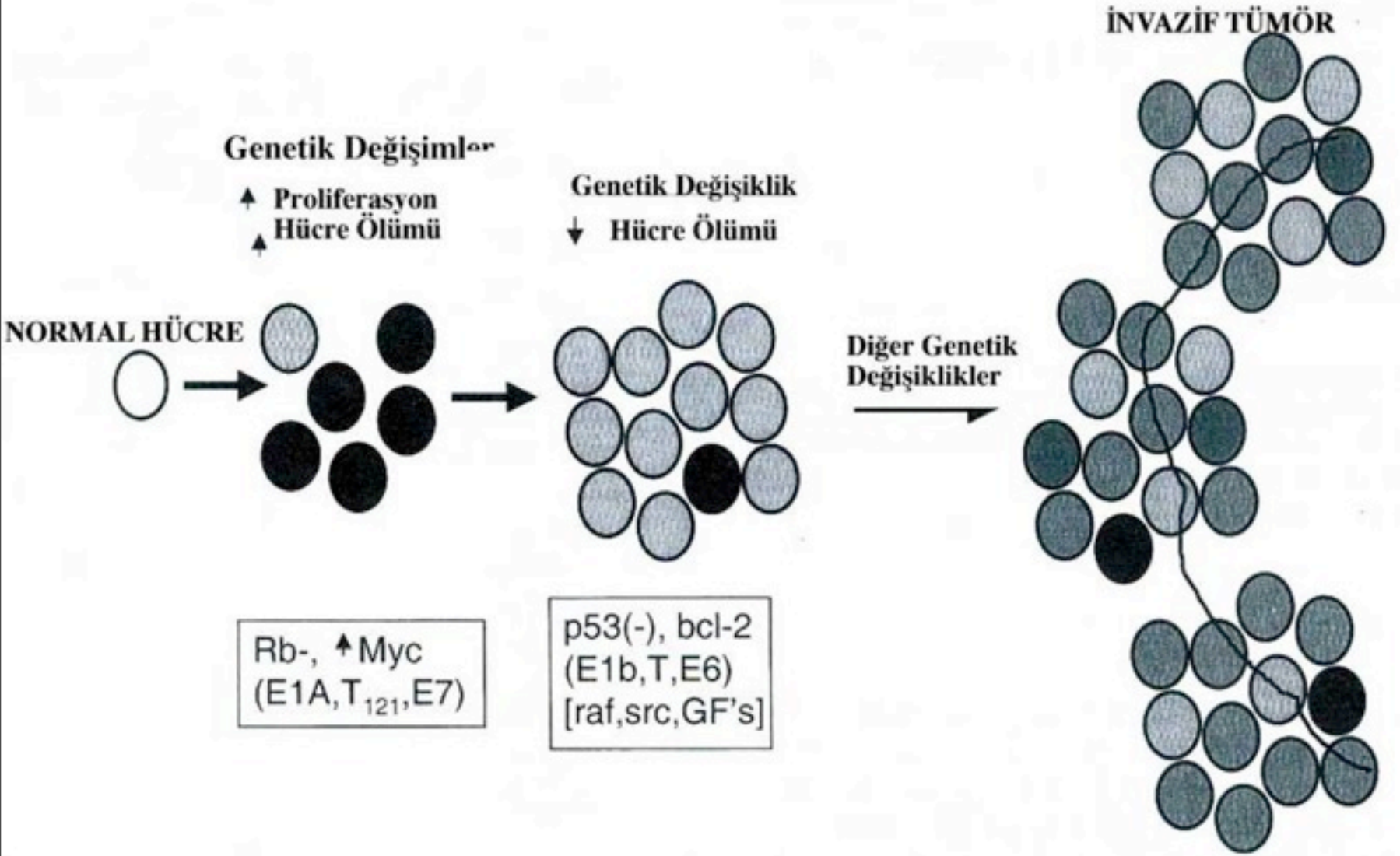


Small white marker





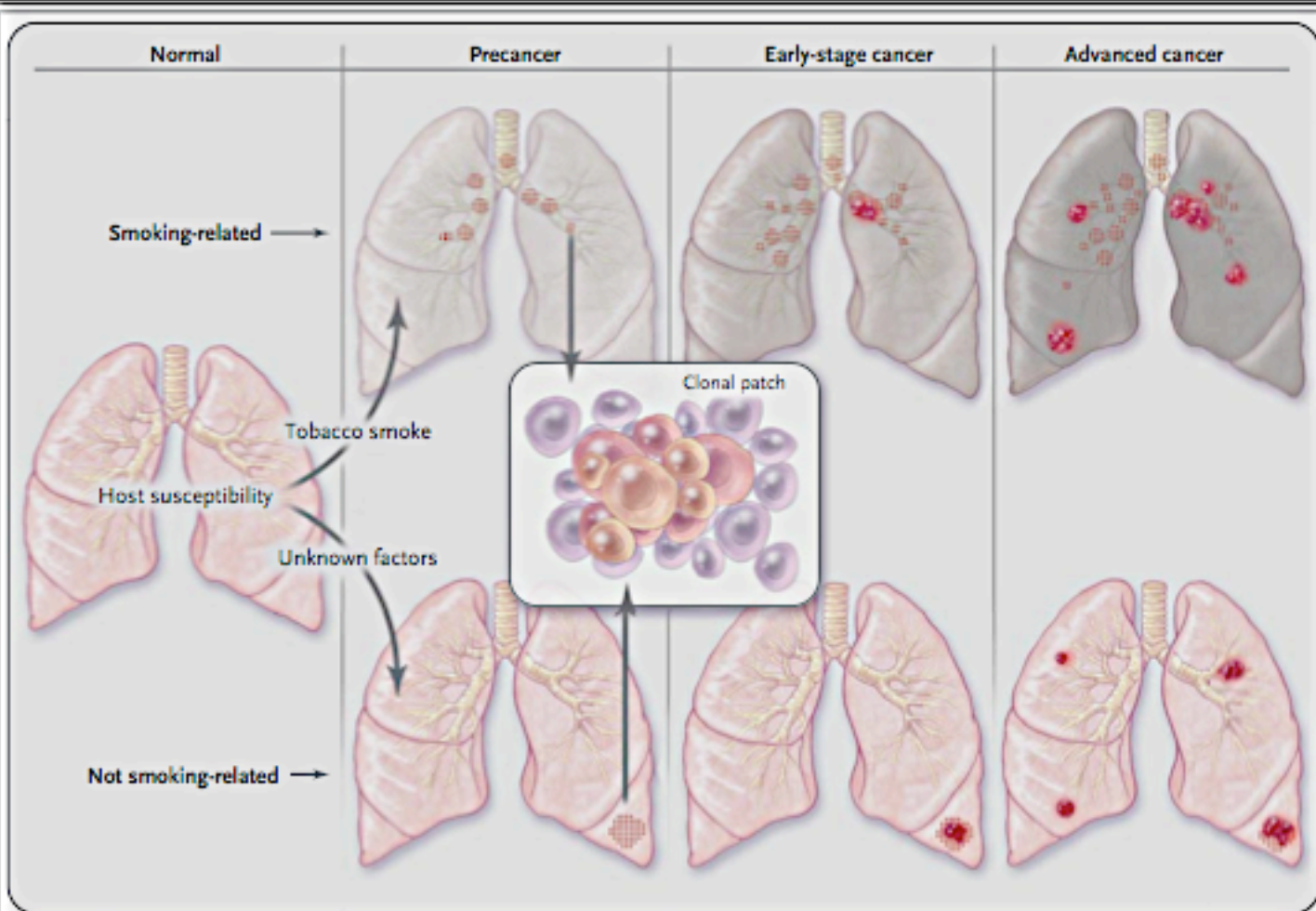




# Onkogeneez

**Table 1. Genetic Abnormalities Specific in the Lung to Non–Small-Cell Lung Cancer and Small-Cell Lung Cancer.\***

Abnormality	Non–Small-Cell Lung Cancer		Small-Cell Lung Cancer
	Squamous-Cell Carcinoma	Adenocarcinoma	
<b>Precursor</b>			
Lesion	Known (dysplasia)	Probable (atypical adenomatous hyperplasia)	Possible (neuroendocrine field)†
Genetic change	p53 mutation	KRAS mutation (atypical adenomatous hyperplasia in smokers), EGFR kinase domain mutation (in nonsmokers)	Overexpression of c-MET
<b>Cancer</b>			
KRAS mutation	Very rare	10 to 30%‡	Very rare
BRAF mutation	3%	2%	Very rare
<b>EGFR</b>			
Kinase domain mutation	Very rare	10 to 40%‡	Very rare
Amplification‡	30%	15%	Very rare
Variant III mutation	5%¶	Very rare	Very rare
<b>HER2</b>			
Kinase domain mutation	Very rare	4%	Very rare
Amplification	2%	6%	Not known
ALK fusion‡	Very rare	7%	Not known
<b>MET</b>			
Mutation	12%	14%	13%
Amplification	21%	20%	Not known
TTF-1 amplification	15%	15%	Very rare
p53 mutation	60 to 70%	50 to 70%‡	75%
LKB1 mutation	19%	34%	Very rare
<b>PIK3CA</b>			
Mutation	2%	2%	Very rare
Amplification	33%	6%	4%

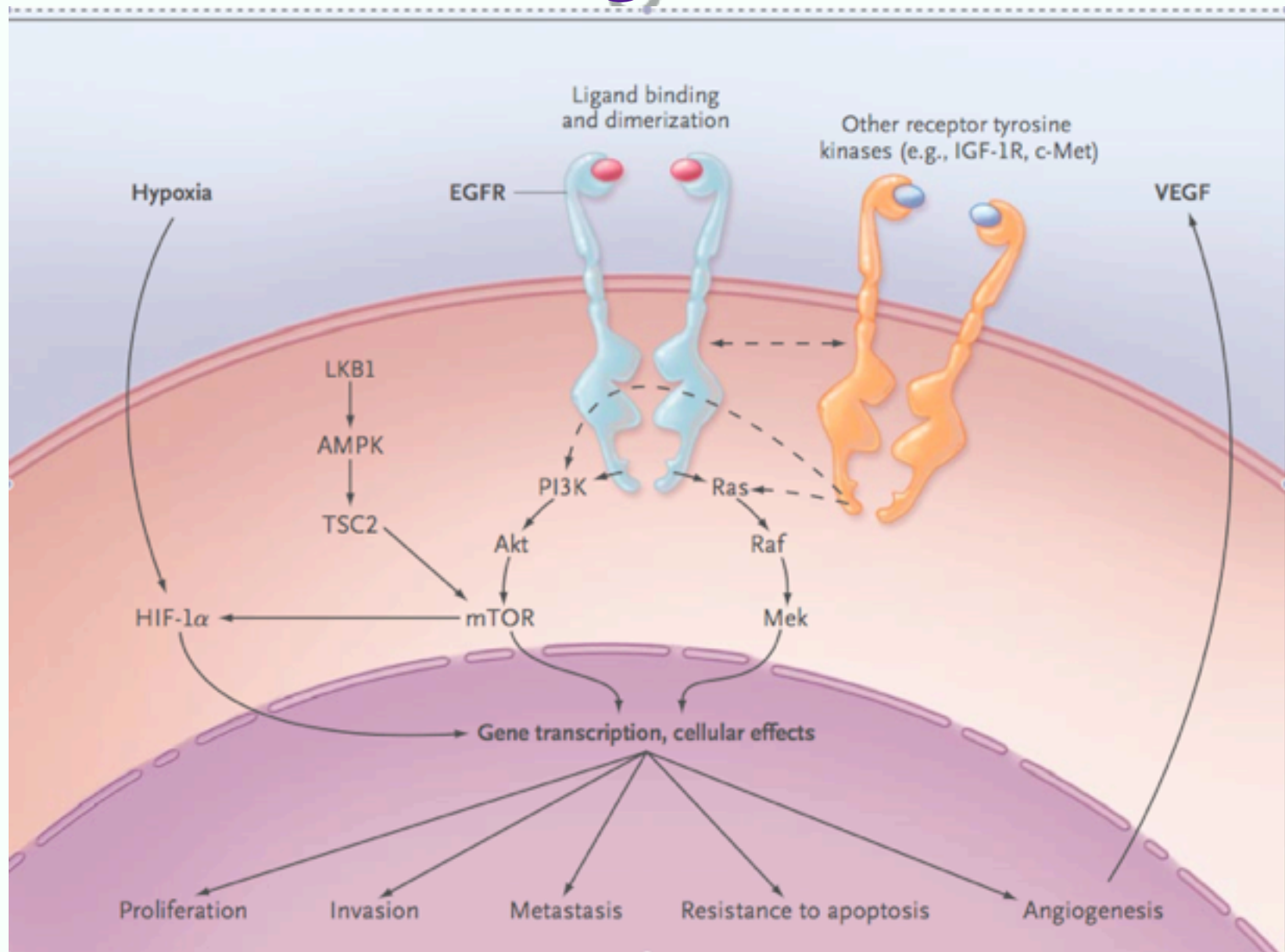


<b>Molecular-cellular features</b>	Common germ-line genetic variations	Tissue injury → Clonal patches Genetic, epigenetic changes	Invasion, angiogenesis	Metastatic spread
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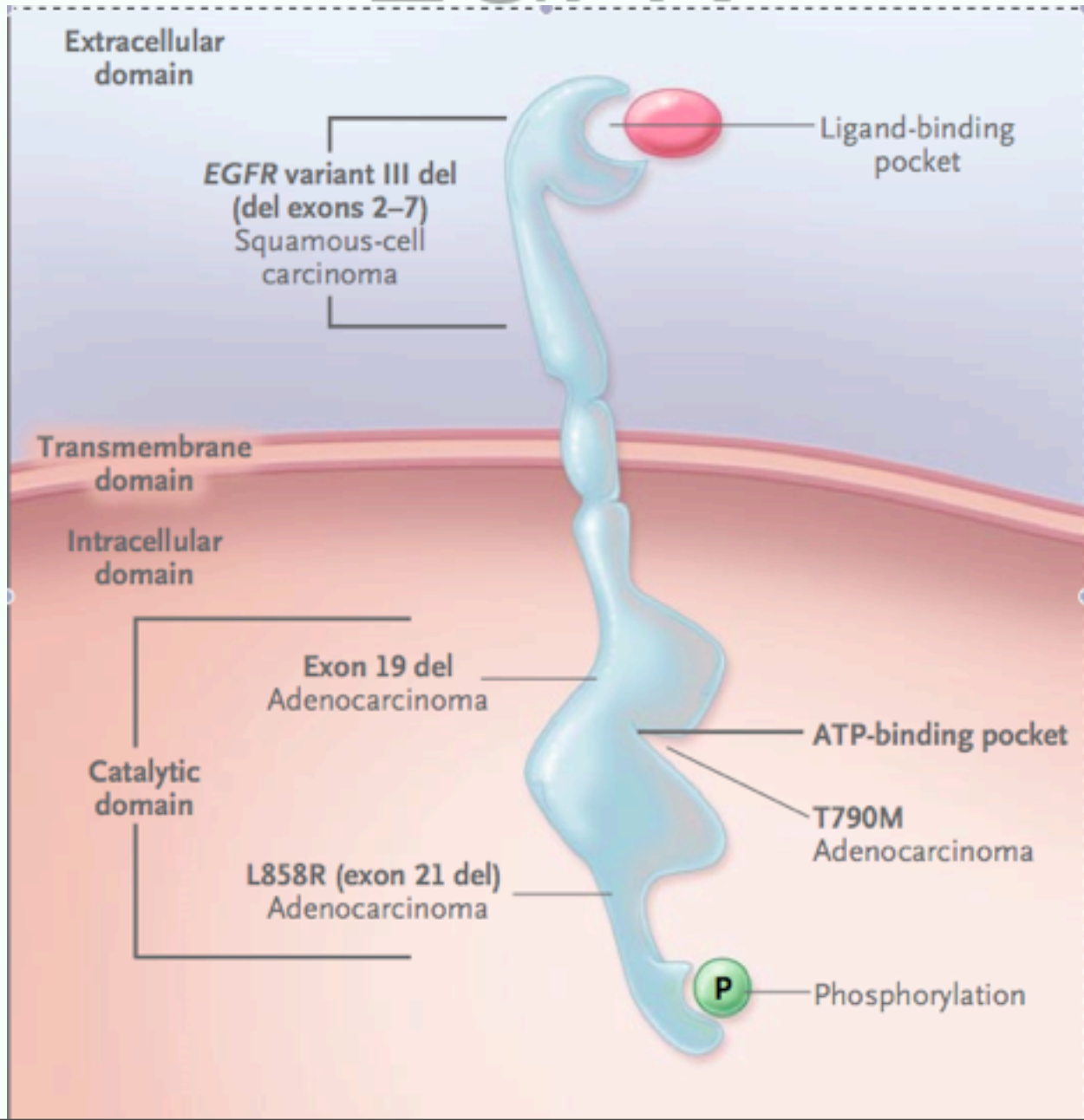
<b>Treatment approaches</b>	Prevention	→	Definitive local therapy with or without adjuvant therapy	Systemic therapy with or without radiation therapy
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<b>Roles for molecular markers</b>	Cancer risk	→	Prognostic, predictive	Predictive
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# Onkogeneze



# EGFR





# TANI VE EVRELEME

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- Balgam Sitolojisi (Santral ise %52 - 87)

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- Balgam Sitolojisi (Santral ise %52 - 87)
- Fiberoptik Bronkoskopi
  - Periferik ise %15 - 24
  - Santral ise %70 - 90
  - Fluoroskopik **Bronkoskopi (Tümünde %40-80)**

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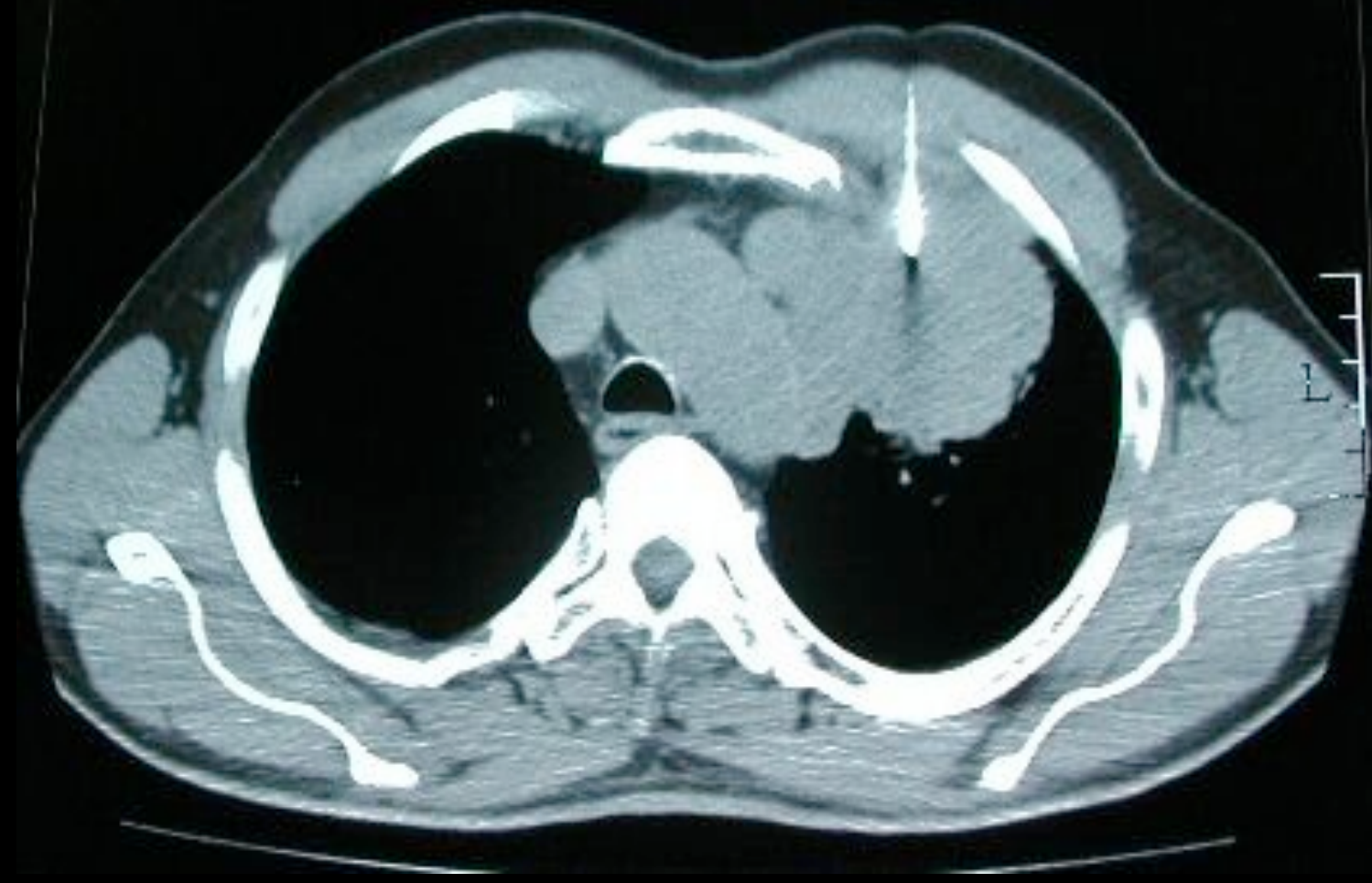
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(Tümünde %35 – 65)

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(Tümünde %35 – 65)
- PET (**Hassasiyet : %90 -94,Özgüllük : %71-82**)



10.0mm  
0.0deg  
I#3

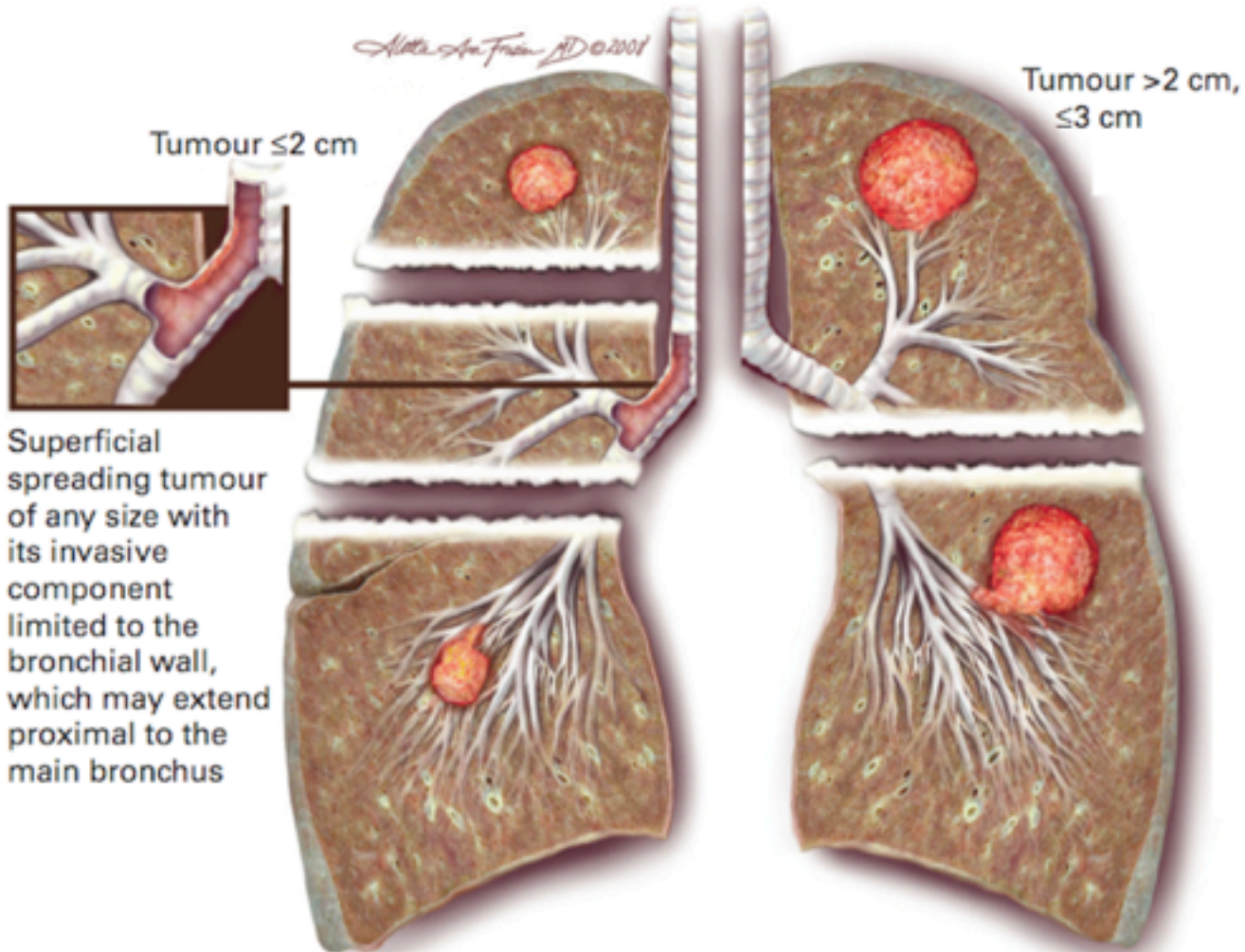


# EVRELEMEDE T FAKTÖRÜ

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	Months After Treatment (Cumulative Percent Surviving)				
	12 (%)	24 (%)	36 (%)	48 (%)	60 (%)
<b>cTNM*</b>					
cT1N0M0 (n=687)	91	79	71	67	61
cT2N0M0 (n=1,189)	72	54	46	41	38
<b>pTNM'</b>					
pT1N0M0 (n=511)	94	86	80	73	67
pT2N0M0 (n=549)	87	76	67	62	57

# T1 TUMOR



Tumour  $\leq 2$  cm

Superficial spreading tumour of any size with its invasive component limited to the bronchial wall, which may extend proximal to the main bronchus

Tumour  $> 2$  cm,  $\leq 3$  cm

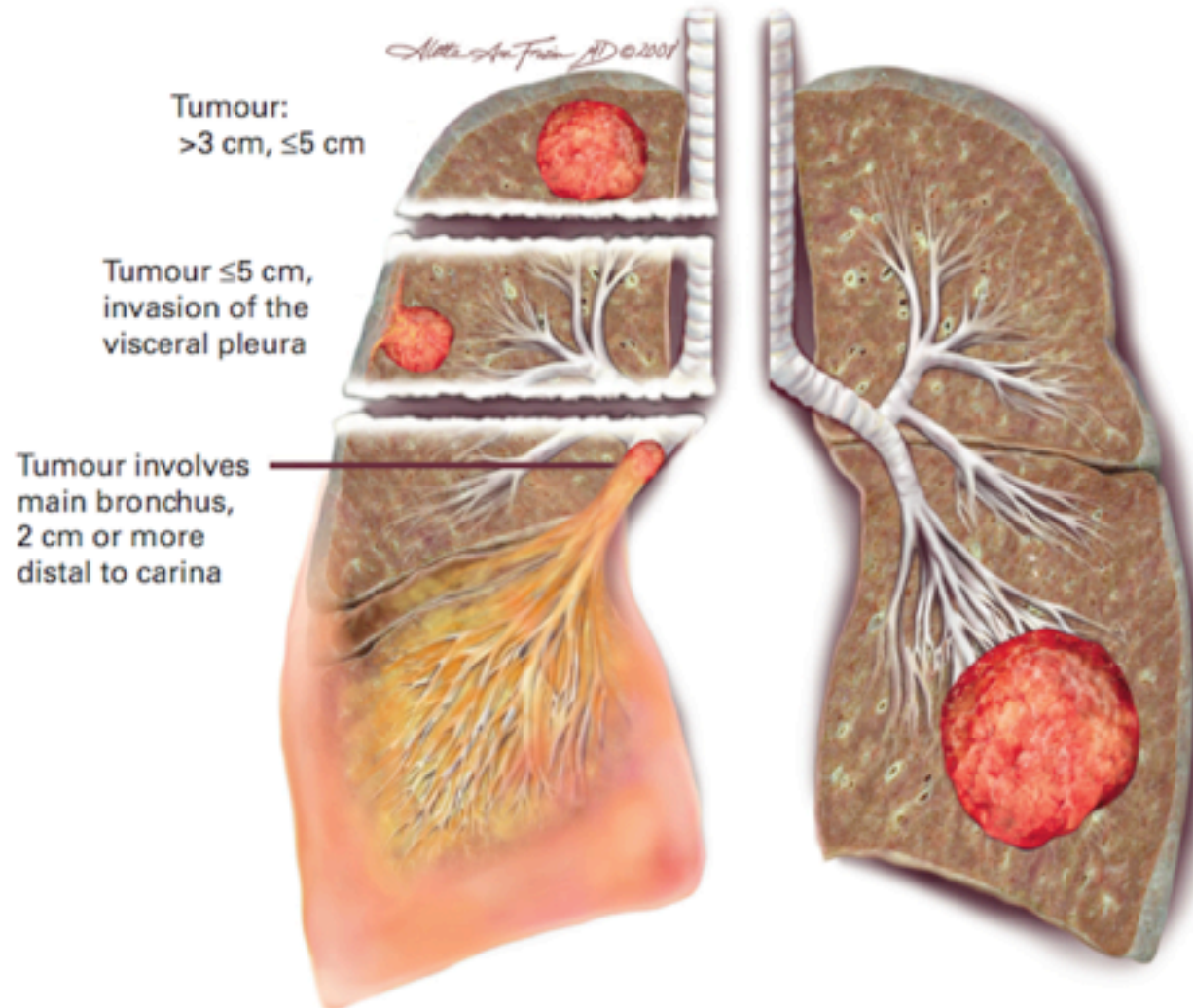
Tumour  $\leq 2$  cm; any associated bronchoscopic invasion should not extend proximal to the lobar bronchus

Tumour  $> 2$  cm,  $\leq 3$  cm; any associated bronchoscopic invasion should not extend proximal to the lobar bronchus

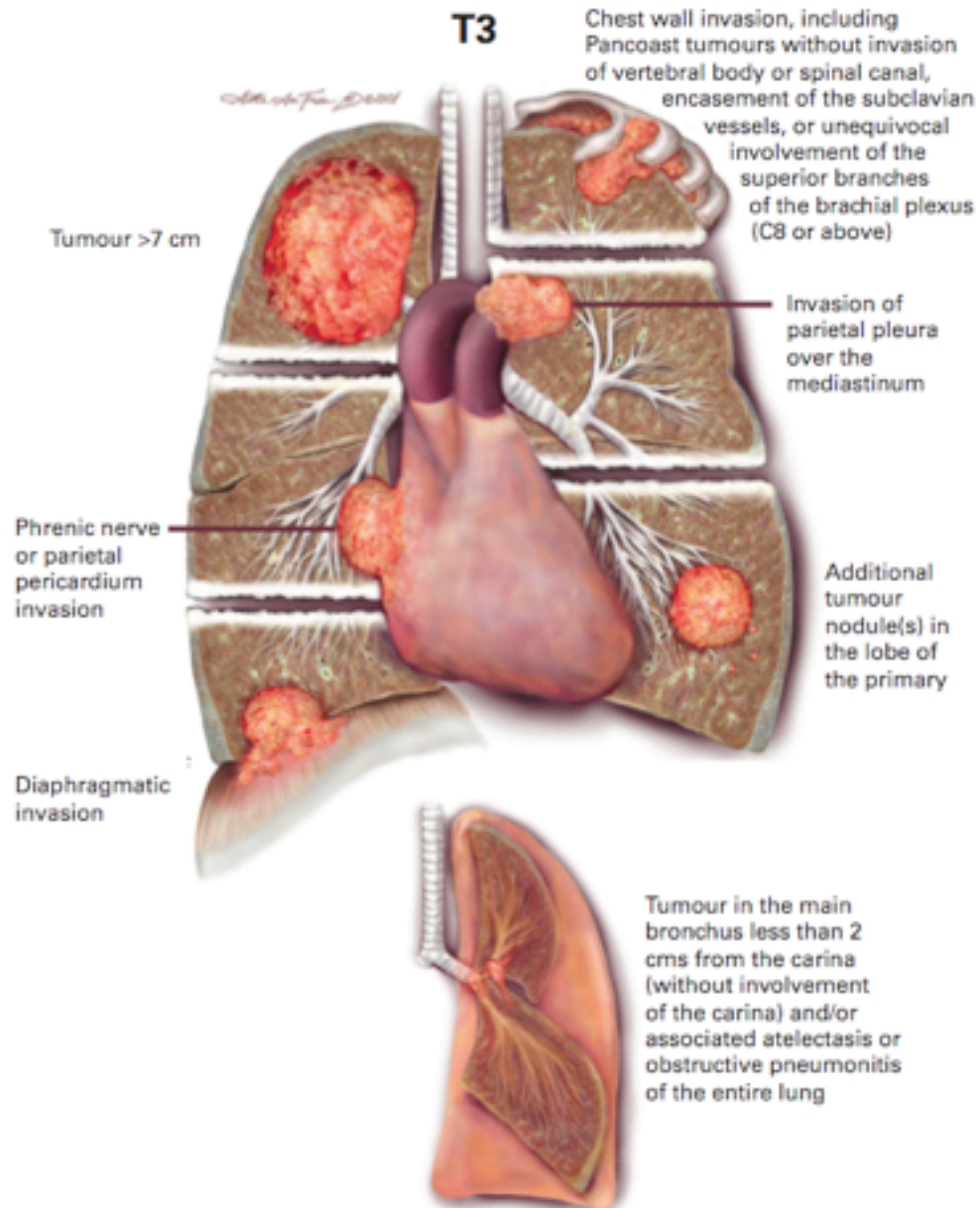
# T2 TUMOR

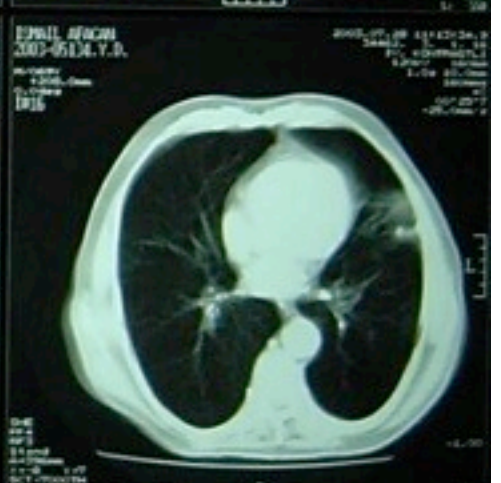
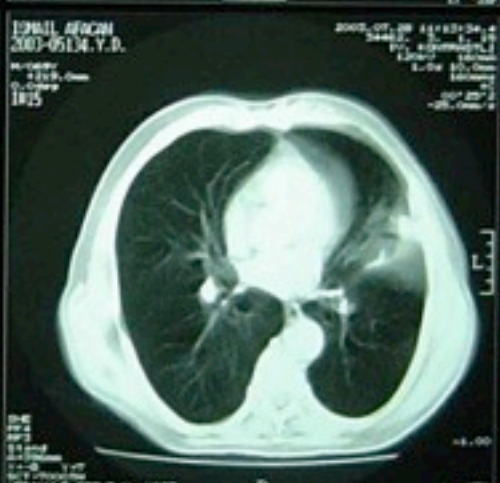
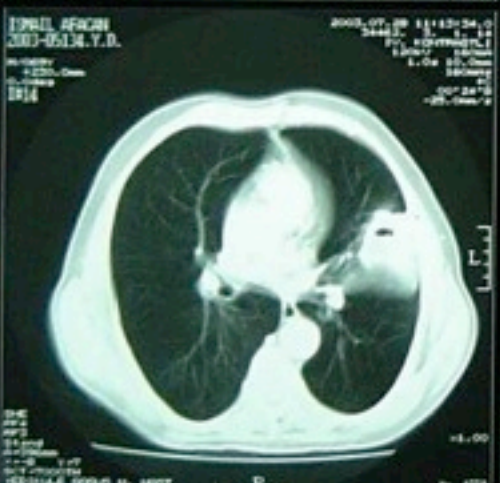
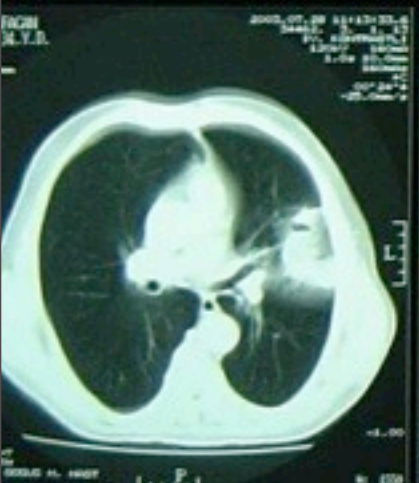
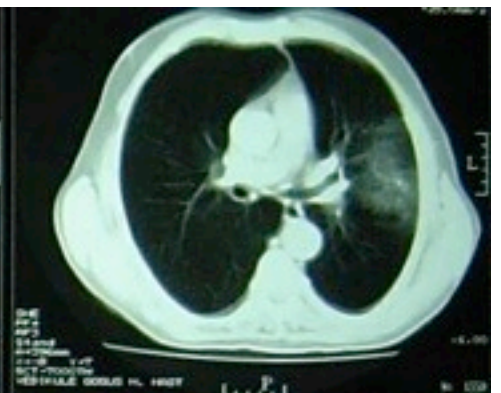
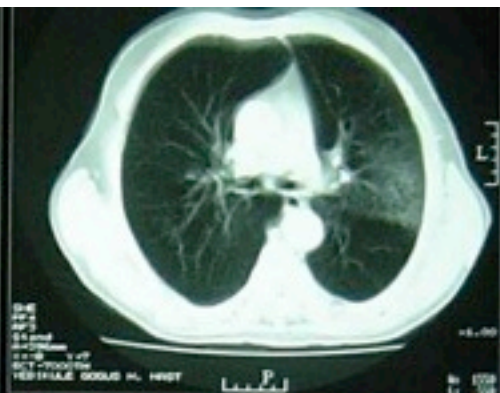
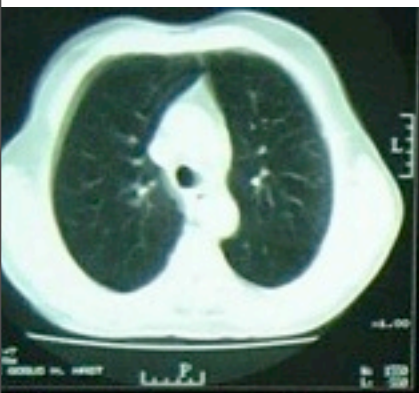
T2a

T2b



# T3 TUMOR



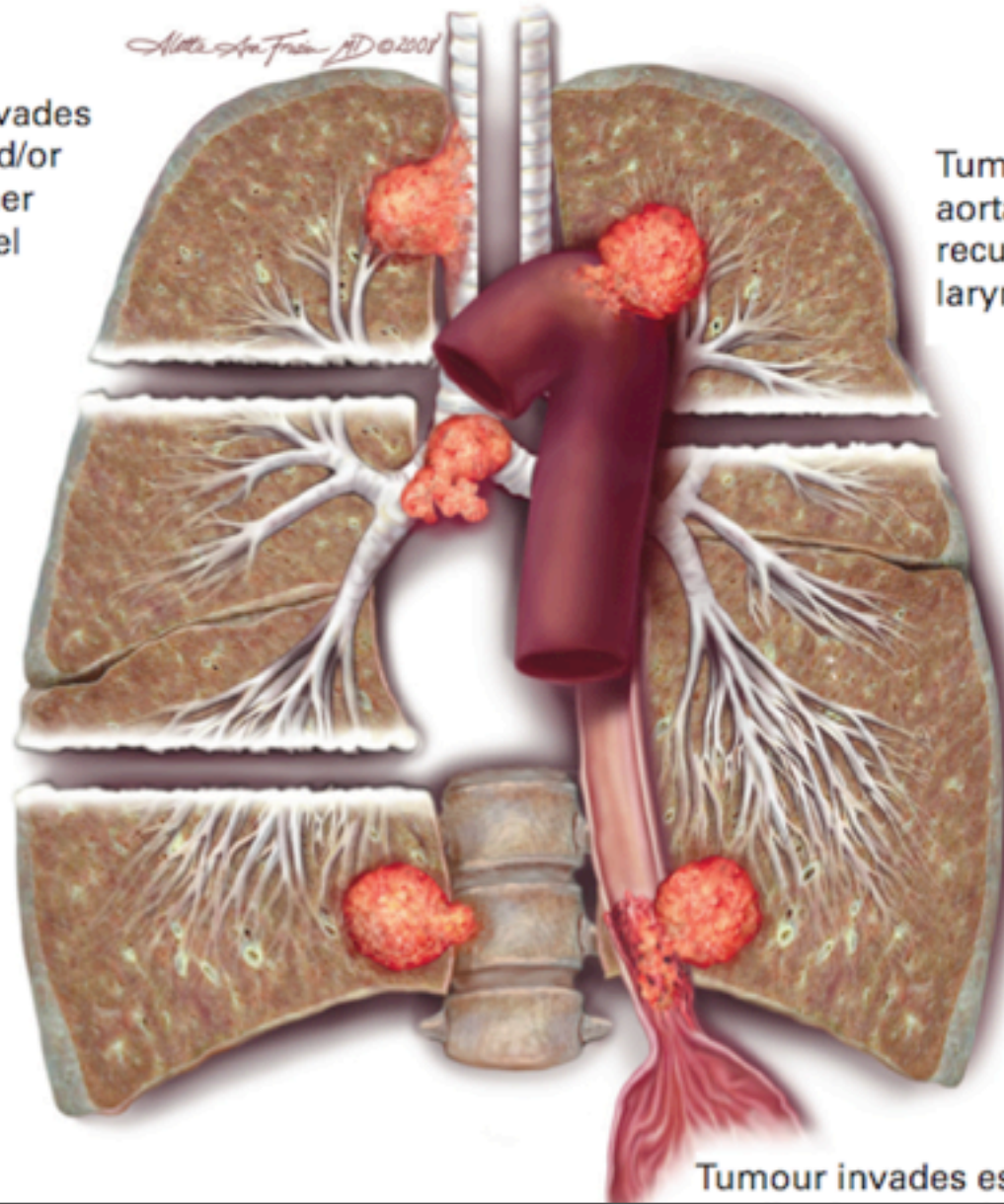


# T4 TÜMÖR

Tumour invades trachea and/or SVC or other great vessel

Tumour involves carina

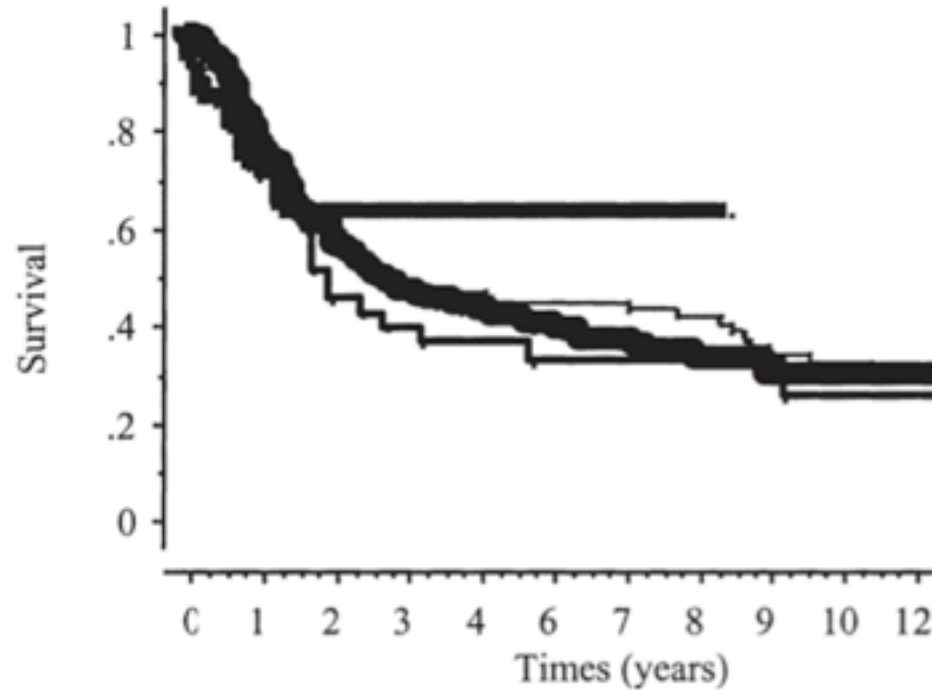
Tumour invades adjacent vertebral body



Tumour invades aorta and/or recurrent laryngeal nerve

Tumour invades esophagus,

# T4 TÜMÖRLERDE SAĞKALIM



Patients at risk	0	1	2	3	4	5
Superior sulcus tumors	126	94	66	44	40	33
Carinal invasion	92	64	50	38	36	31
Superior vena caval replacement	39	24	12	14	8	7
Mediastinal group	14	8	5	3	2	2

# EVRE IIIB (T4) OLGULARDA CERRAHİ?

Kaynak	5-yıllık Sağkalım
Darteville ve ark. Ann Thorac Surg 1988; 46: 68-72. (n=55)	% 23
Rendina EA ve ark. J Thorac Cardiovasc Surg 1993; 106: 73-79. (n=12)	% 12
Tsuchiya R, ve ark. Ann Thorac Surg 1994; 57: 960-5 (n=101)	% 13
Spaggiari L, ve ark. Ann Thorac Surg 2000; 69: 233-6. (n=25)	% 29

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# T FAKTÖRÜNÜN PREOPERATİF DEĞERLENDİRİLMESİ

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## ■ Non-İnvazif

- BT

- MRI

- PET

- Endoskopik Ultrasonografi

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- **Non-İnvazif**
  - **BT**
  - **MRI**
  - **PET**
  - **Endoskopik Ultrasonografi**
- **Mediastinoskopi**

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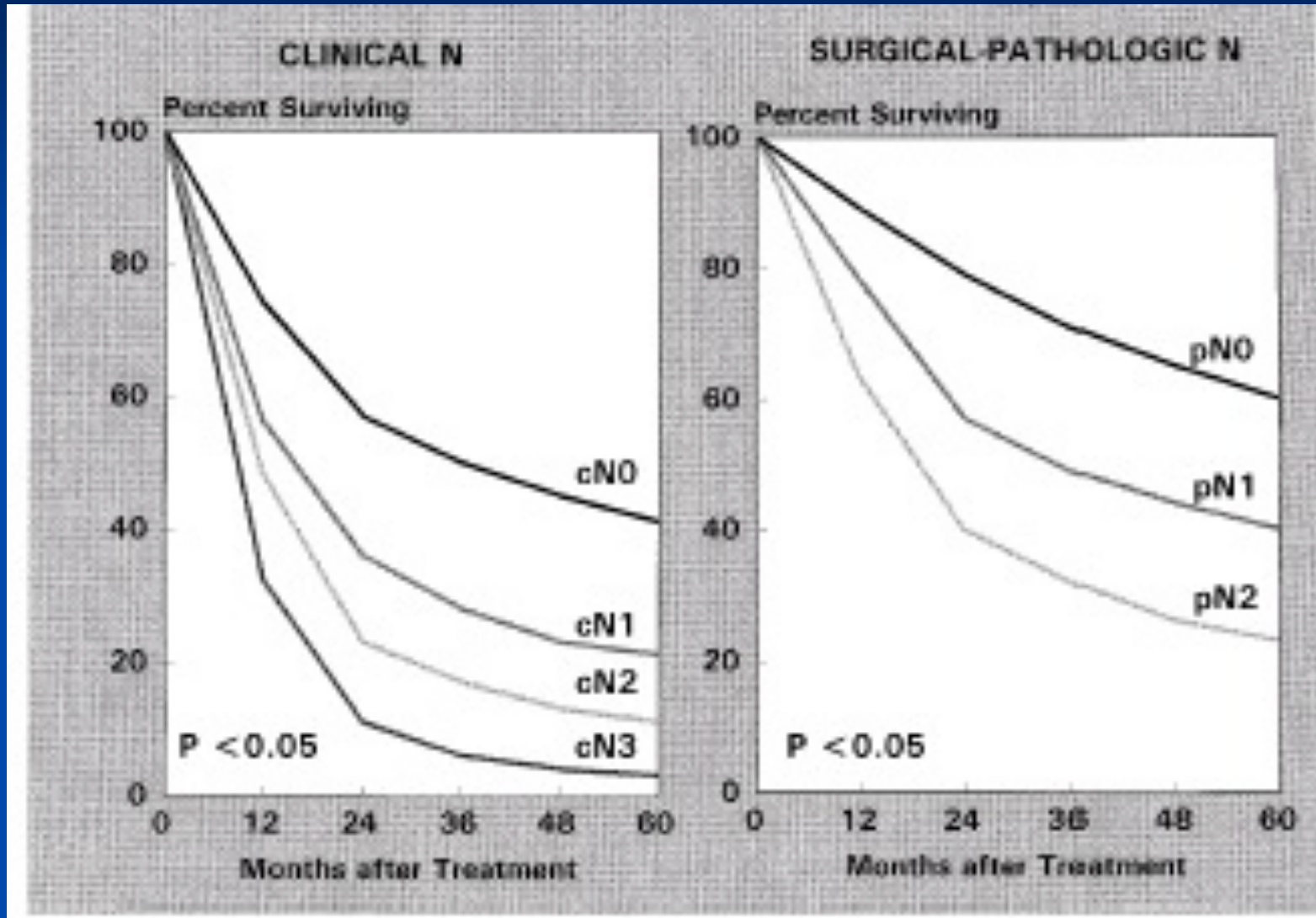
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  - **MRI**
  - **PET**
  - **Endoskopik Ultrasonografi**
- **Mediastinoskopi**
- **Mediastinotomi**

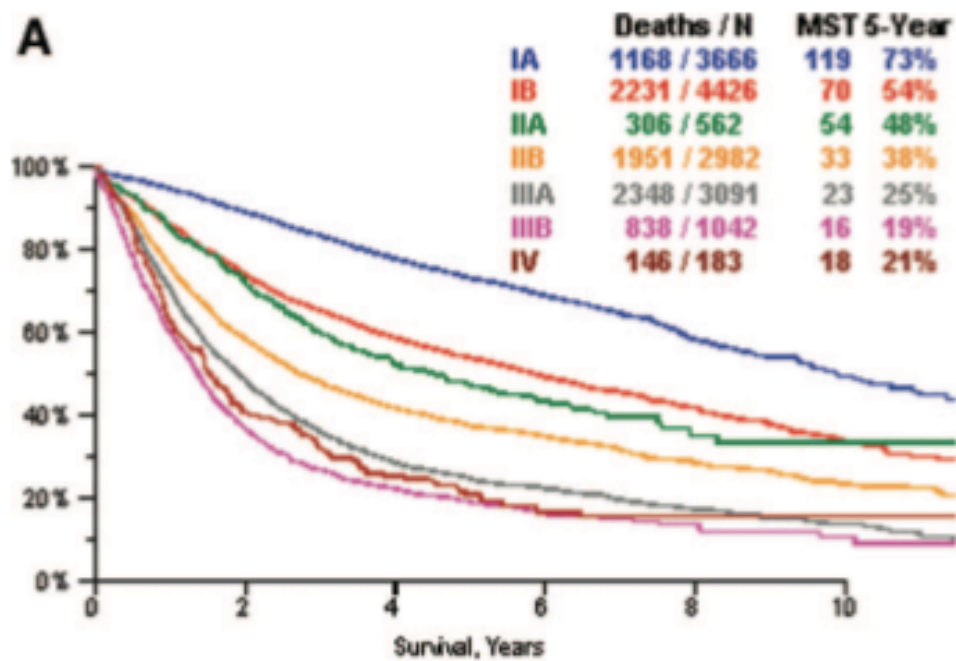
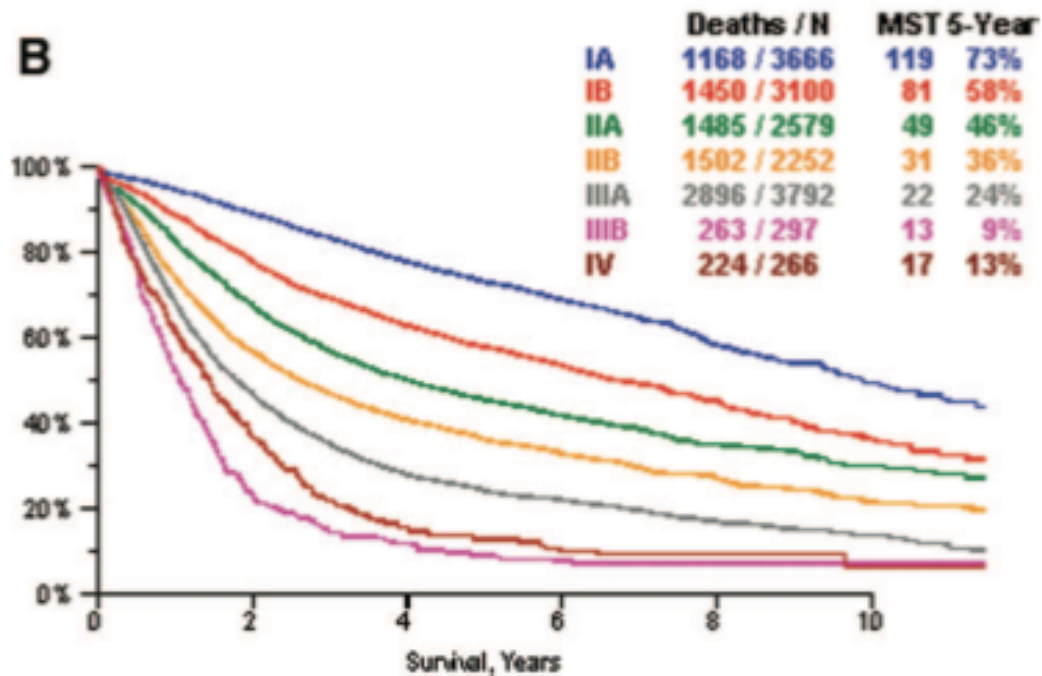
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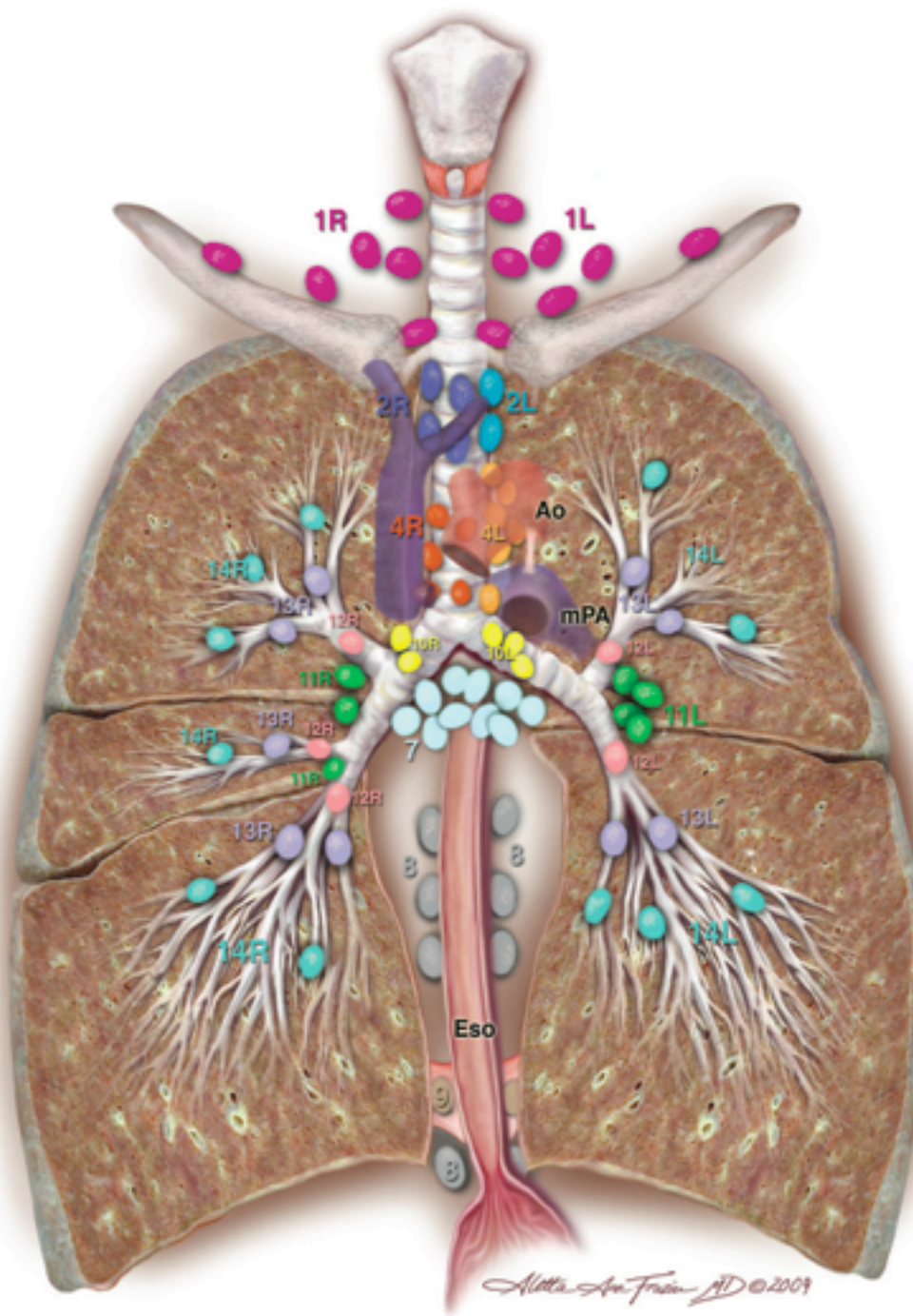
- **Non-İnvazif**
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  - **Endoskopik Ultrasonografi**
- **Mediastinoskopi**
- **Mediastinotomi**
- **VATS**



# EVRELEMEDE N FAKTÖRÜ



**A****B**





# N FAKTÖRÜNÜN PREOPERATİF DEĞERLENDİRİLMESİ

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- Mediastinoskopi
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- ‘Extended’ Mediastinoskopi (Lopez, Ginsberg)

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- VATS

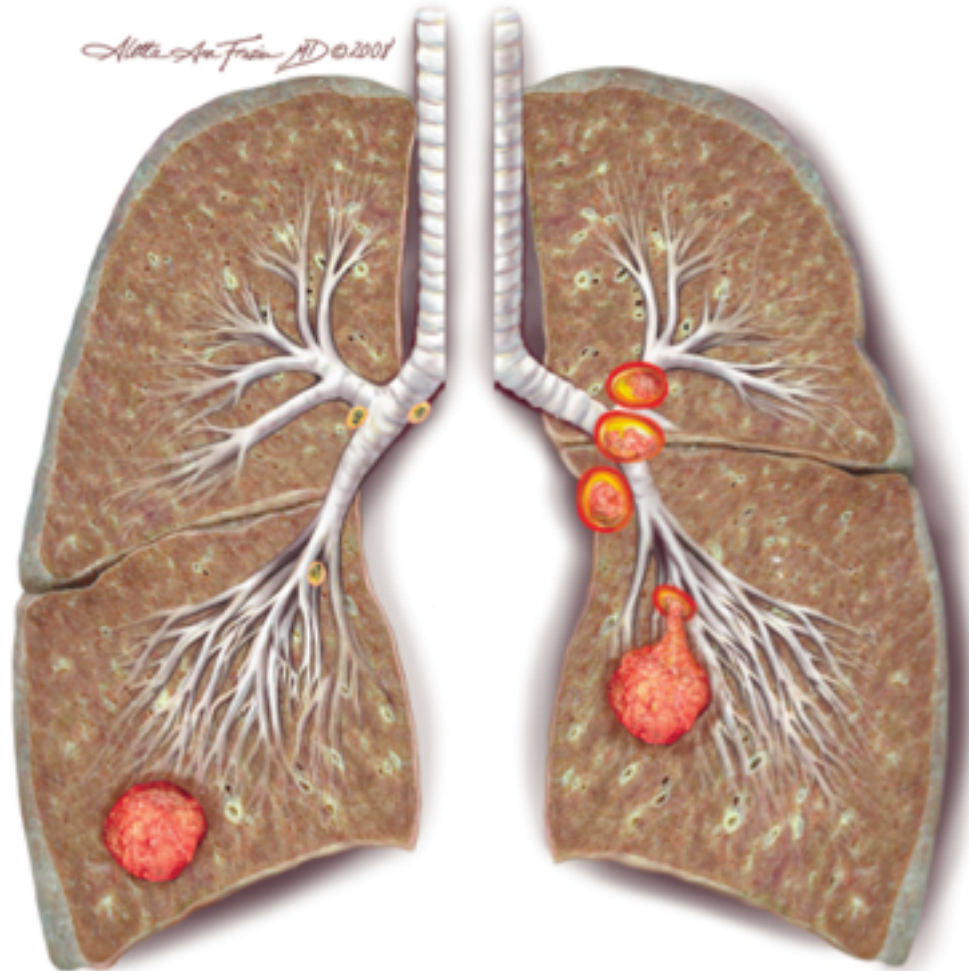
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- ‘Extended’ Mediastinoskopi (Lopez, Ginsberg)
- VATS
- Torakotomi (Peroperatif)

**N0**

**N1**

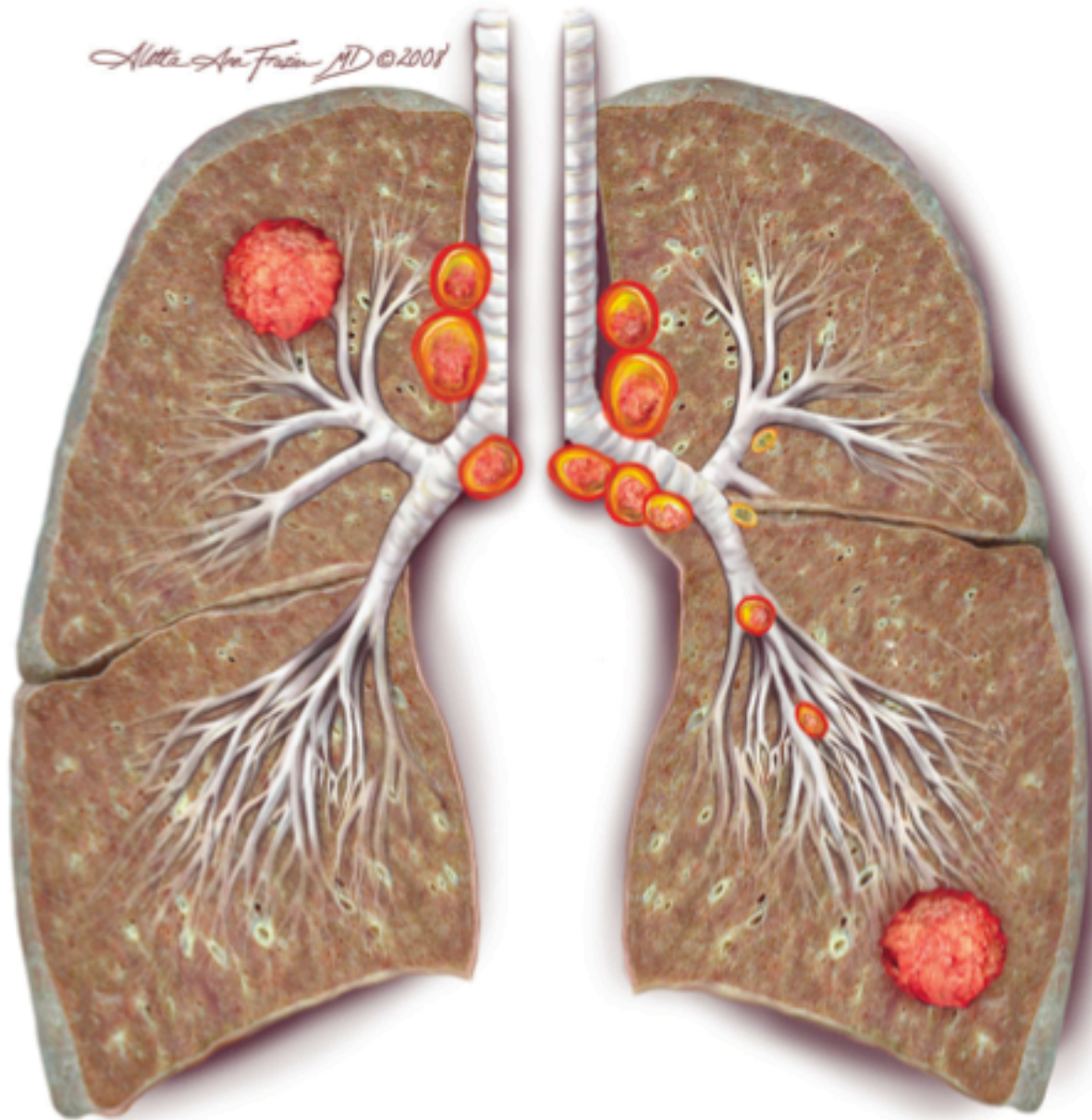
*Alla An Fra AD © 2001*



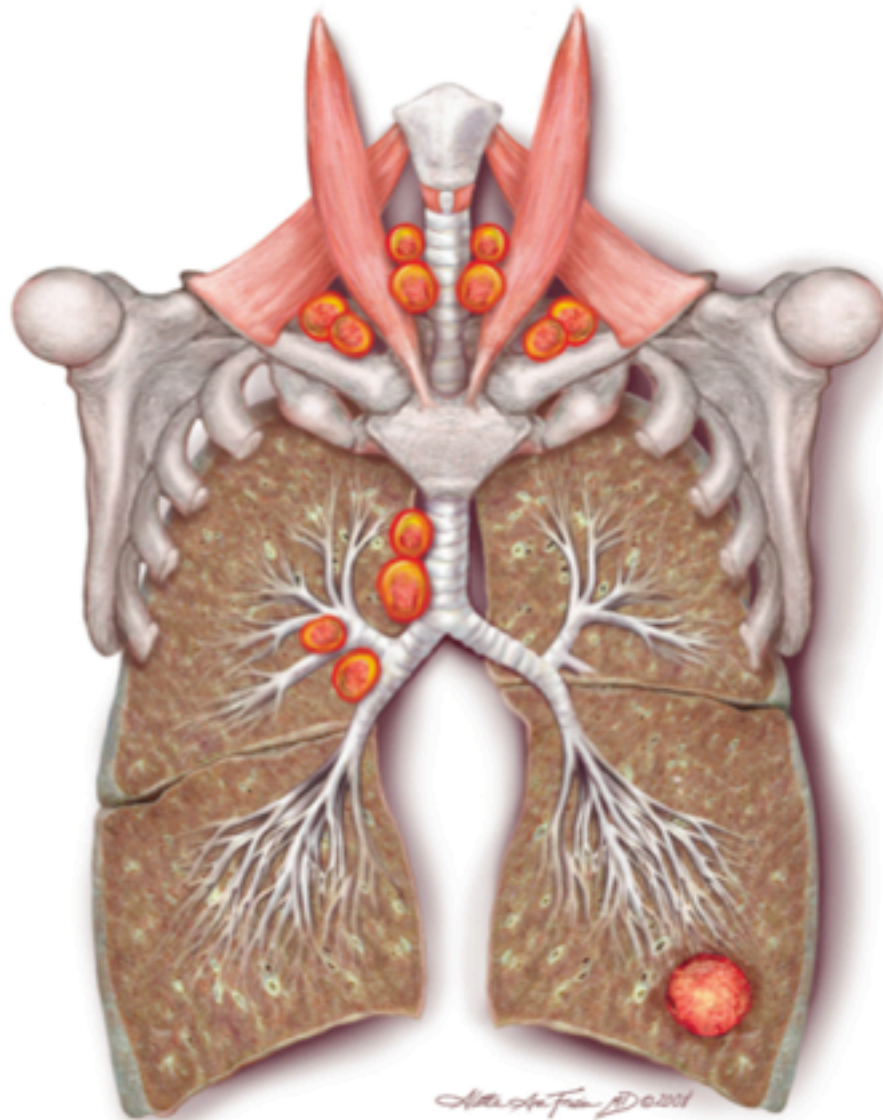
No regional lymph node metastases

Metastasis in ipsilateral intrapulmonary/peribronchial/hilar lymph node(s), including nodal involvement by direct extension

*Alta Am Fraim MD © 2008*



N3

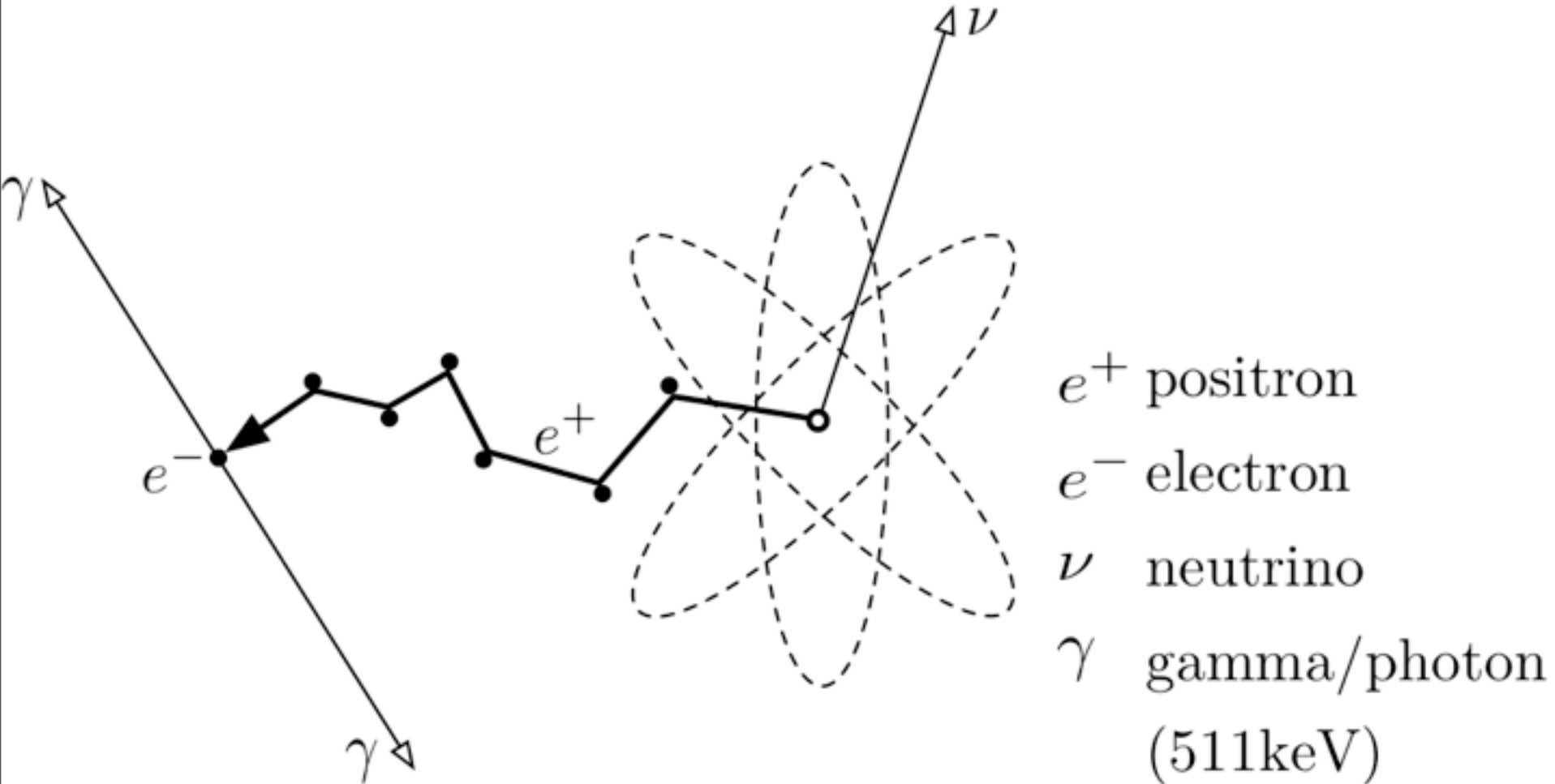


Metastasis in  
contralateral hilar/  
mediastinal/scalene/  
supraclavicular  
lymph node(s)

Metastasis in  
ipsilateral scalene/  
supraclavicular  
lymph node(s)

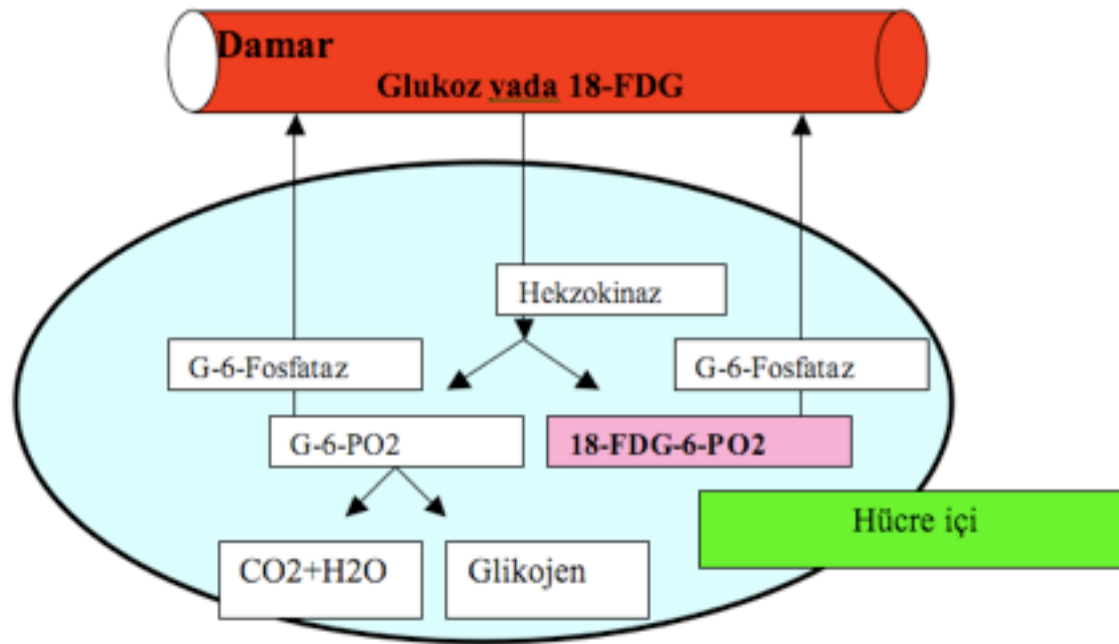
TX	Positive cytology only
T1	≤3 cm
T1a	≤2 cm
T1b	>2-3 cm
T2	Main bronchus ≥2 cm from carina, invades visceral pleura, partial atelectasis
T2a	>3-5 cm
T2b	>5 cm-7 cm,
T3	>7 cm; chest wall, diaphragm, pericardium, mediastinal pleura, main bronchus <2 cm from carina, total atelectasis, separate nodule(s) in same lobe
T4	Mediastinum, heart, great vessels, carina, trachea, oesophagus, vertebra; separate tumour nodule(s) in a different ipsilateral lobe
N1	Ipsilateral peribronchial, ipsilateral hilar
N2	Subcarinal, ipsilateral mediastinal
N3	Contralateral mediastinal or hilar, scalene or supraclavicular
M1	Distant metastasis
M1a	Separate tumour nodule(s) in a contra-lateral lobe; pleural nodules or malignant pleural or pericardial effusion
M1b	Distant metastasis

# POZİTRON EMİSYON TOMOGRAFİSİ



En sık kullanılan radyoizotop:  $^{18}\text{F}$  2-Deoksi-D-Glikoz

# PET Neyi Gösterir?



**TABLE 2. Correct classification of nodal status in patients with primary lung cancer by imaging modality\***

Confirmed pathology	CT alone (%)	PET alone (%)	CT plus PET (%)	<i>P</i> value (PET vs CT)
N0	147/168 (88%)	128/168 (76%)	132/168 (89%)	>.5
N1	4/31 (13%)	13/31 (42%)	14/31 (45%)	.0177
N2/N3	18/57 (32%)	33/57 (58%)	30/57 (53%)	.004

*CT*, Computed tomography; *PET*, position emission tomography.

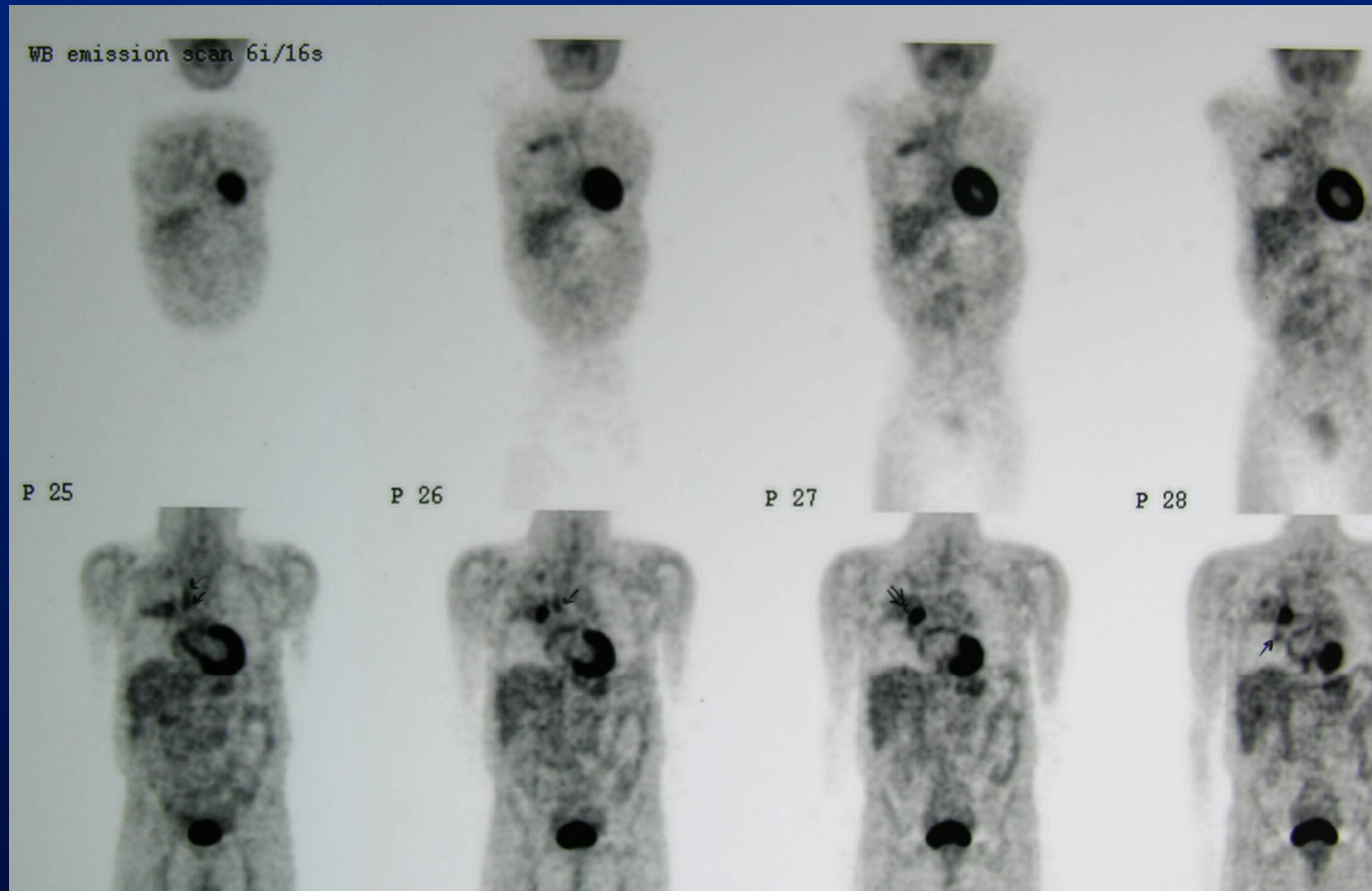
\*Fraction of patients with nodal status confirmed pathologically and correctly staged by the imaging modality.

**TABLE 3. Sensitivity, specificity, positive and negative predictive values, and accuracy of PET scan**

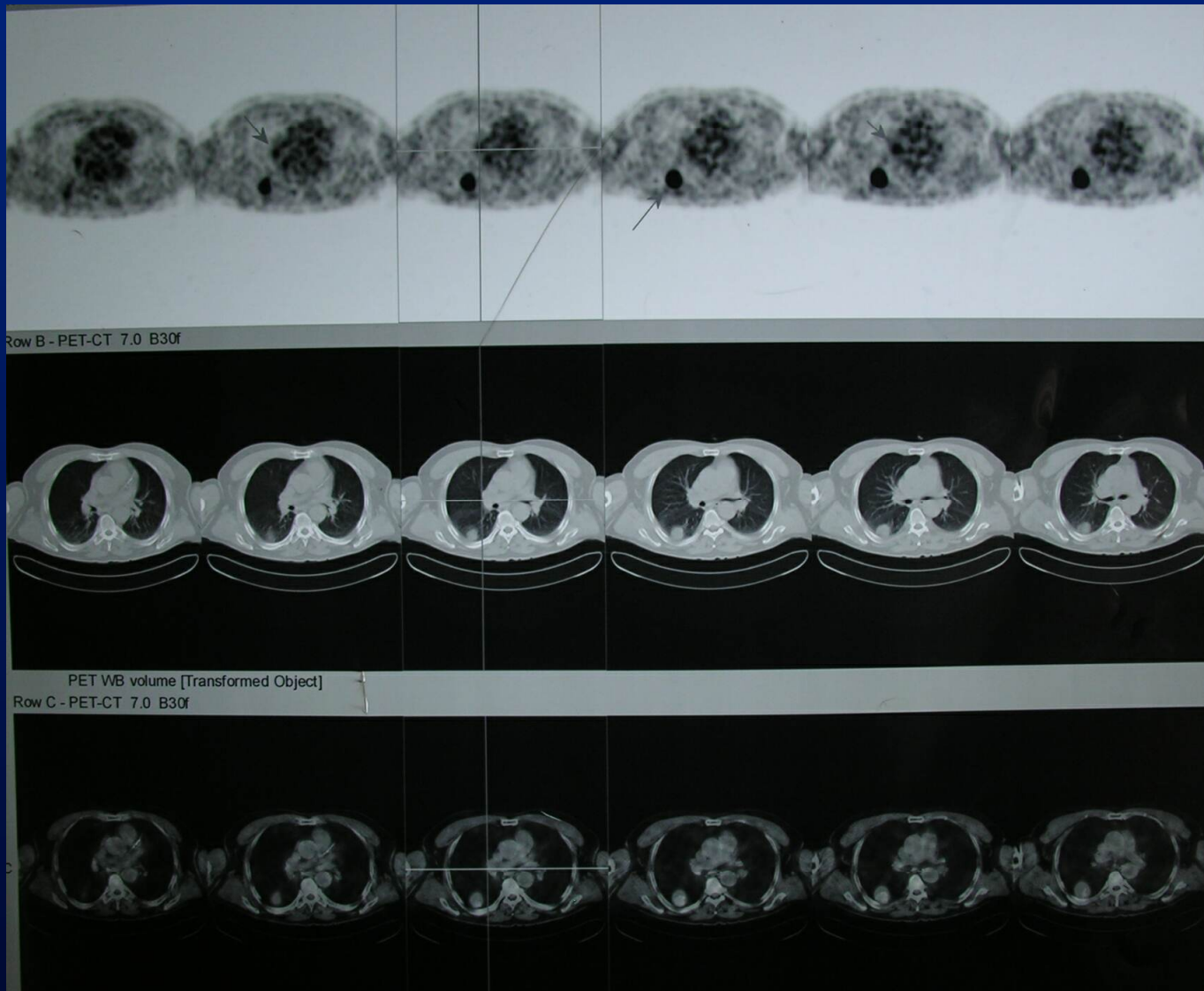
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Sensitivity	64.4%
Specificity	77.1%
Positive predictive value	44.6%
Negative predictive value	88.3%
Accuracy	74.3%

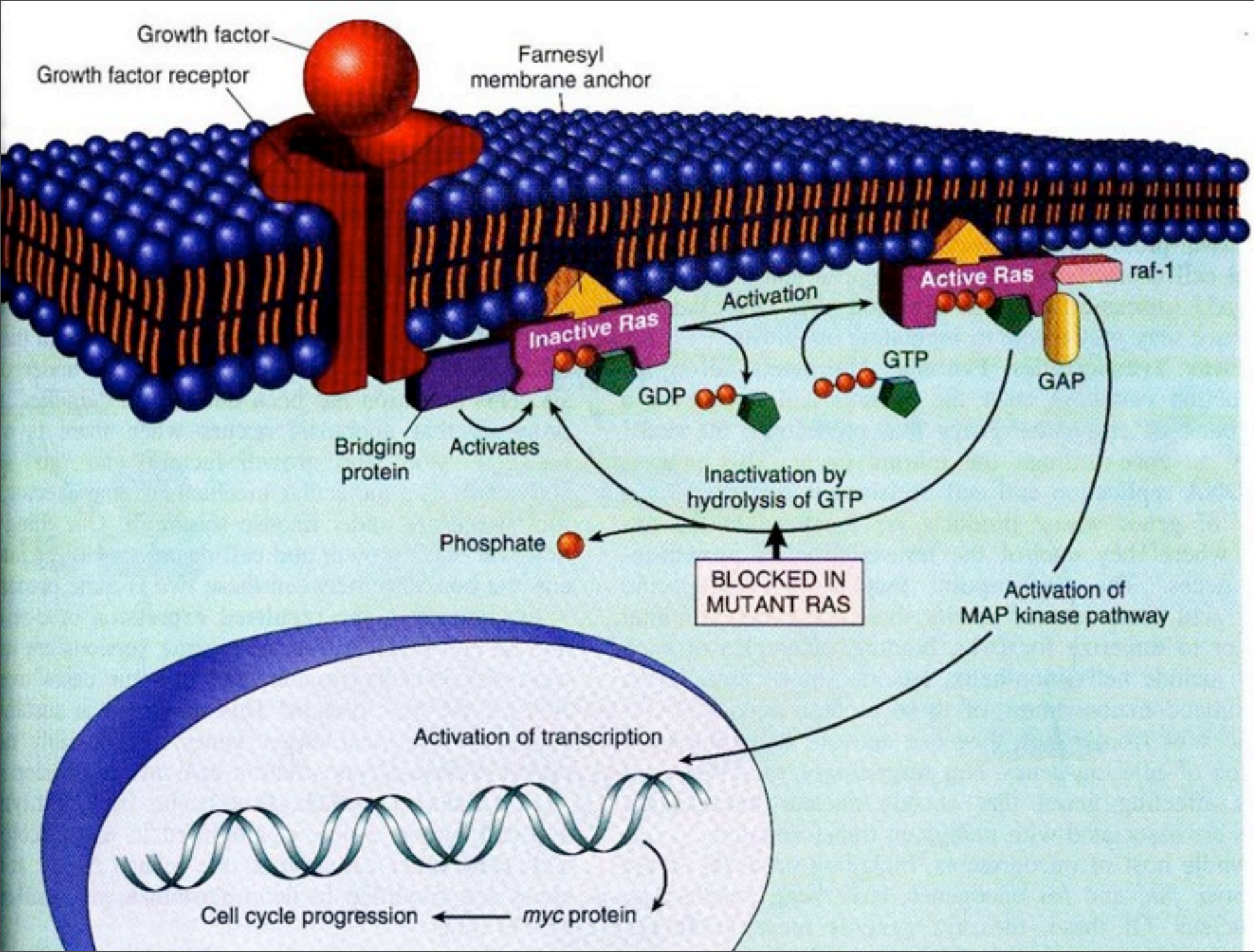
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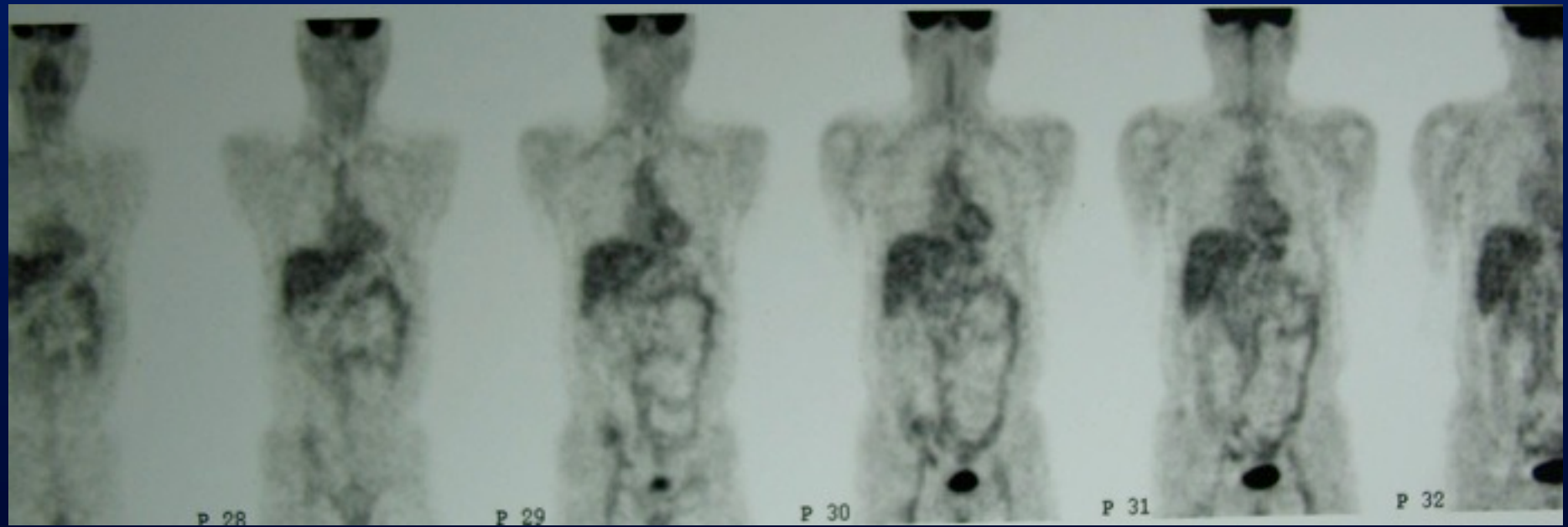


71y erkek, PET: N2, Rezeksiyon: N0



63 y erkek. Sol alt lob superior tm, PET: N0,  
Mediastinoskopi: N3





# TANI VE EVRELEME

*\*Ann Thorac Surg 1993; 56:825*

# TANI VE EVRELEME

- **VATS** (*Video-assisted Thoracoscopic Surgery*)
  - Mack ve ark.\*: 242 hasta (Tanısız soliter pulmoner nodül, dış 1/3'te lokalize, kalsifikasyonsuz) → **Sadece 3 hastada torakotomi gerekti. 239'da kesin tanı.**

\**Ann Thorac Surg* 1993; 56:825

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- Evre I'de tüm cerrahi işlemler VATS ile yapılabilir (İşaretleme teknikleri yardımcıdır).

\**Ann Thorac Surg* 1993; 56:825



# TANI VE EVRELEME

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- ERS VE ATS' nin Konsensus Raporları (1997, 2000):

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# TANI VE EVRELEME

- ERS VE ATS' nin Konsensus Raporları (1997, 2000):
- **TANI KOYULAMAMIŞ SOLİTER PULMONER NODÜL BULUNAN RİSK GRUBU OLGULARDA DİREKT CERRAHİ GİRİŞİM UYGULANABİLİR.**

# SOLİTER PULMONER NODÜLDE MALİGNİTE

# SOLİTER PULMONER NODÜLDE MALİGNİTE

## ■ Radiolojik Özellikler

- Çap  $> 2$  cm
- Spikülasyon
- Üst lob lokalizasyon

# SOLİTER PULMONER NODÜLDE MALİGNİTE

## ■ Radiolojik Özellikler

- Çap > 2 cm
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- Üst lob lokalizasyon

## ■ Klinik Özellikler

- Yaş > 40
- Pozitif sigara hikayesi

# SOLİTER PULMONER NODÜLDE MALİGNİTE

## ■ Radiolojik Özellikler

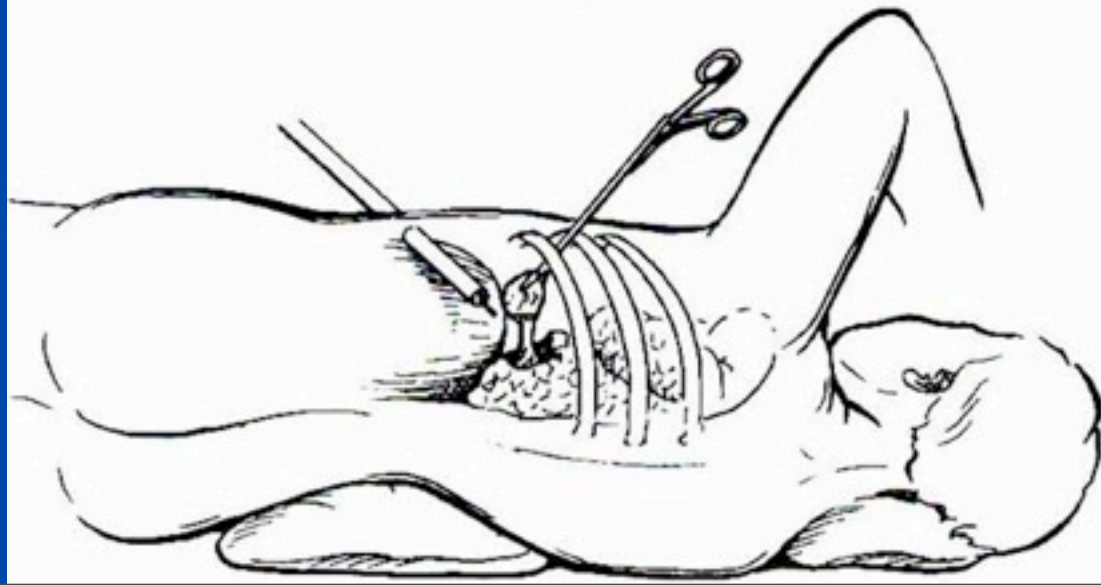
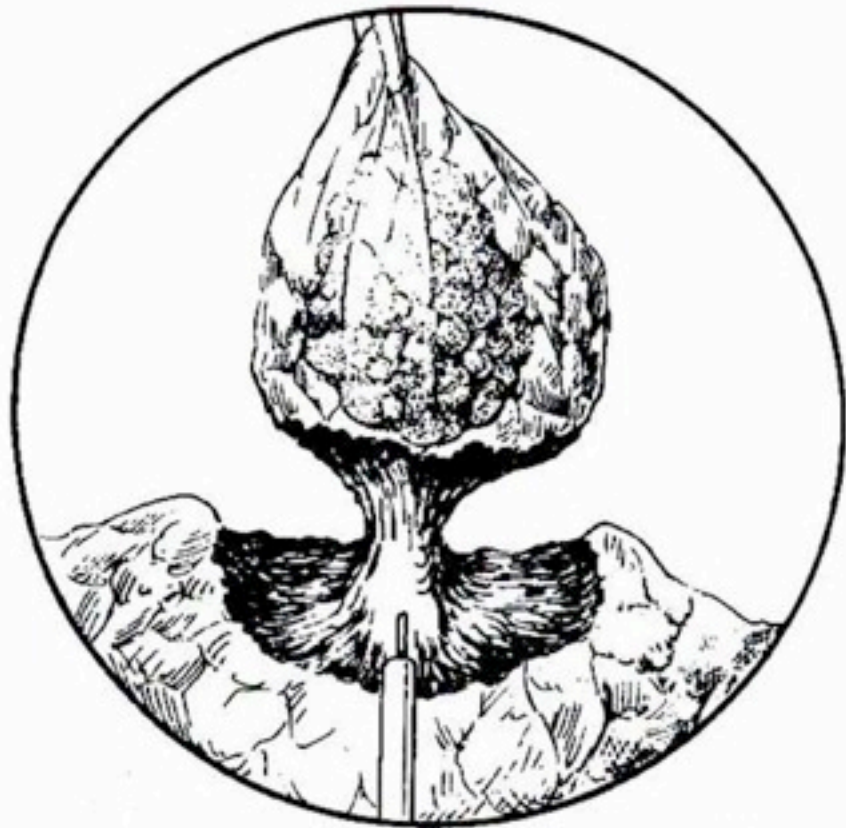
- Çap  $> 2$  cm
- Spikülasyon
- Üst lob lokalizasyon

## ■ Klinik Özellikler

- Yaş  $> 40$
- Pozitif sigara hikayesi

## ■ Diğer bir malignite varlığı





# N FAKTÖRÜNÜN PREOPERATİF DEĞERLENDİRİLMESİ

# N FAKTÖRÜNÜN PREOPERATİF DEĞERLENDİRİLMESİ

- Non-İnvazif
  - BT
  - MRI
  - PET
  - Endoskopik Ultrasonografi

# N FAKTÖRÜNÜN PREOPERATİF DEĞERLENDİRİLMESİ

- Non-İnvazif
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- Mediastinoskopi

# N FAKTÖRÜNÜN PREOPERATİF DEĞERLENDİRİLMESİ

- Non-İnvazif
  - BT
  - MRI
  - PET
  - Endoskopik Ultrasonografi
- Mediastinoskopi
- Mediastinotomi

# N FAKTÖRÜNÜN PREOPERATİF DEĞERLENDİRİLMESİ

- Non-İnvazif
  - BT
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- ‘Extended’ Mediastinoskopi (Lopez, Ginsberg)

# N FAKTÖRÜNÜN PREOPERATİF DEĞERLENDİRİLMESİ

- Non-İnvazif
  - BT
  - MRI
  - PET
  - Endoskopik Ultrasonografi
- Mediastinoskopi
- Mediastinotomi
- ‘Extended’ Mediastinoskopi (Lopez, Ginsberg)
- VATS

# N FAKTÖRÜNÜN PREOPERATİF DEĞERLENDİRİLMESİ

- Non-İnvazif
  - BT
  - MRI
  - PET
  - Endoskopik Ultrasonografi
- Mediastinoskopi
- Mediastinotomi
- ‘Extended’ Mediastinoskopi (Lopez, Ginsberg)
- VATS
- Torakotomi (Peroperatif)



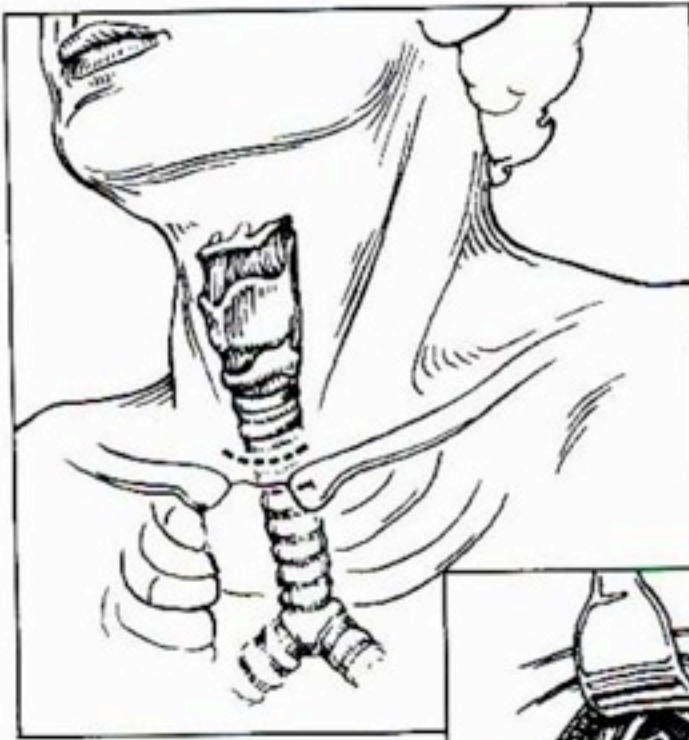
**Table 6-8. Number of Nodes Identified in the Inferior Compartment of the Mediastinum<sup>a</sup> by Transesophageal Ultrasound (TEUS) versus Computed Tomography (CT)**

	Stations 7, 8, and 10	R9	L9
TEUS	274	8	22
CT	96	1	2

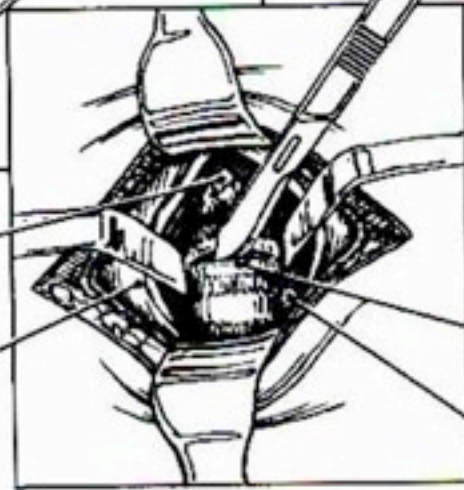
<sup>a</sup>Naruke map.

Adapted from Kondo D, et al: Endoscopic ultrasound examination for mediastinal lymph node metastases of lung cancer. *Chest* 98:587, 1990.

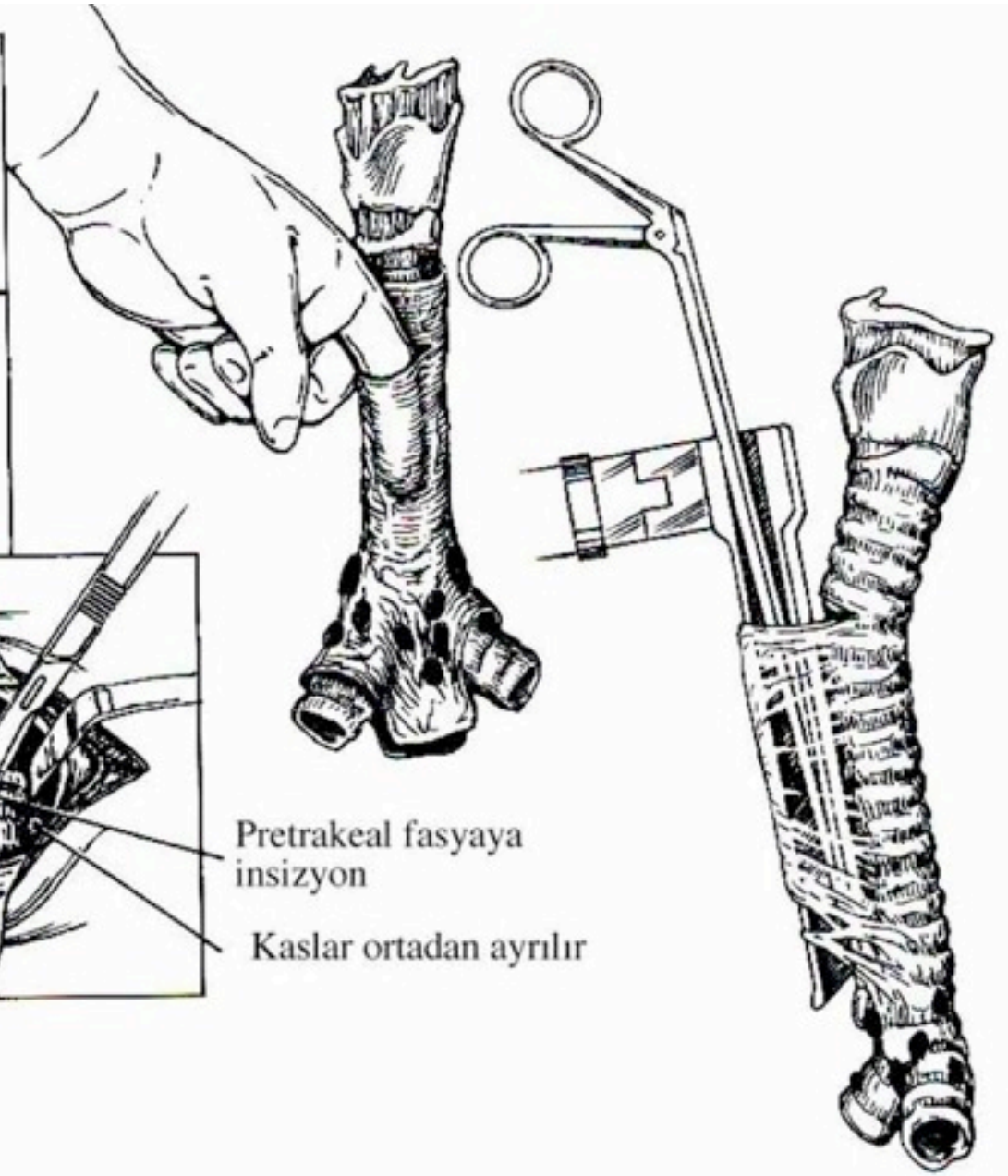




Tiroid  
Servikal fasya



Pretrakeal fasyaya insizyon  
Kaslar ortadan ayrılır



# NODAL TUTULUMDA MEDIASİTİNOSKOPİ

- Hassasiyet en çok %83.3\*  
en az %64.0<sup>+</sup> (Subkarinal)
- Özgüllük en çok %100\*
- ‘Yanlış Negatif’ lik en az %6.1<sup>+</sup>
- Hayatı tehdit edici komplikasyon %0.3§

*L. Lopez et al. Ann Thorac Surg 1994;57:555*

*T. Funatsu et al. J Thorac Cardiovasc Surg 1992;104:1688*

*R.J. Ginsberg Surg Clin North Am. 1987;67:1025*

<b>SAYI</b>	<b>452</b> ( <i>Temmuz 2000</i> )
<b>MORBİDİTE</b>	<b>20</b> (%4.4)
<b>MORTALİTE</b>	<b>1</b> (%0.35)
<b>SPESİFİSİTE</b>	<b>%96.2</b>

# MEDIASTİNO SKOPİDE YEDİKULE DENEYİMİ

<b>SAYI</b>	<b>452</b> ( <i>Temmuz 2000</i> )
<b>MORBİDİTE</b>	<b>20</b> (%4.4)
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<b>SPESİFİSİTE</b>	<b>%96.2</b>



**Must mediastinoscopy be routinely performed in the patients with resectable non-small cell lung cancer and no enlarged mediastinal lymph node (cN0) on CT?**

Akif Turna, Atilla Gürses, Mehmet Ali Bedirhan, Tevrat Özalp, Celalettin Kocatürk, Adalet Demir, Mustafa Özcan, Nur Ürer

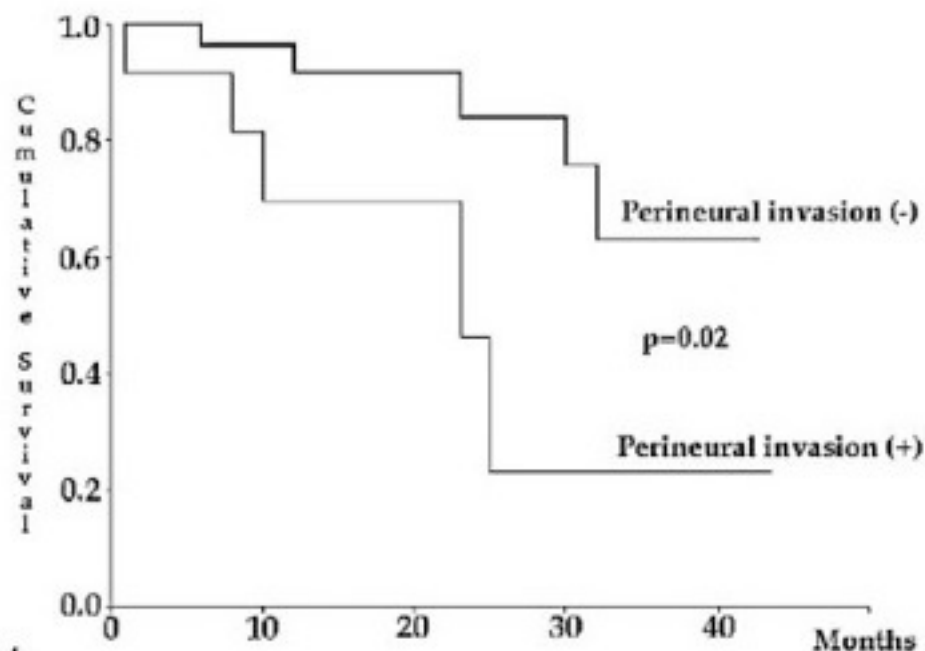
# Prognostik Moleküler Belirteçler

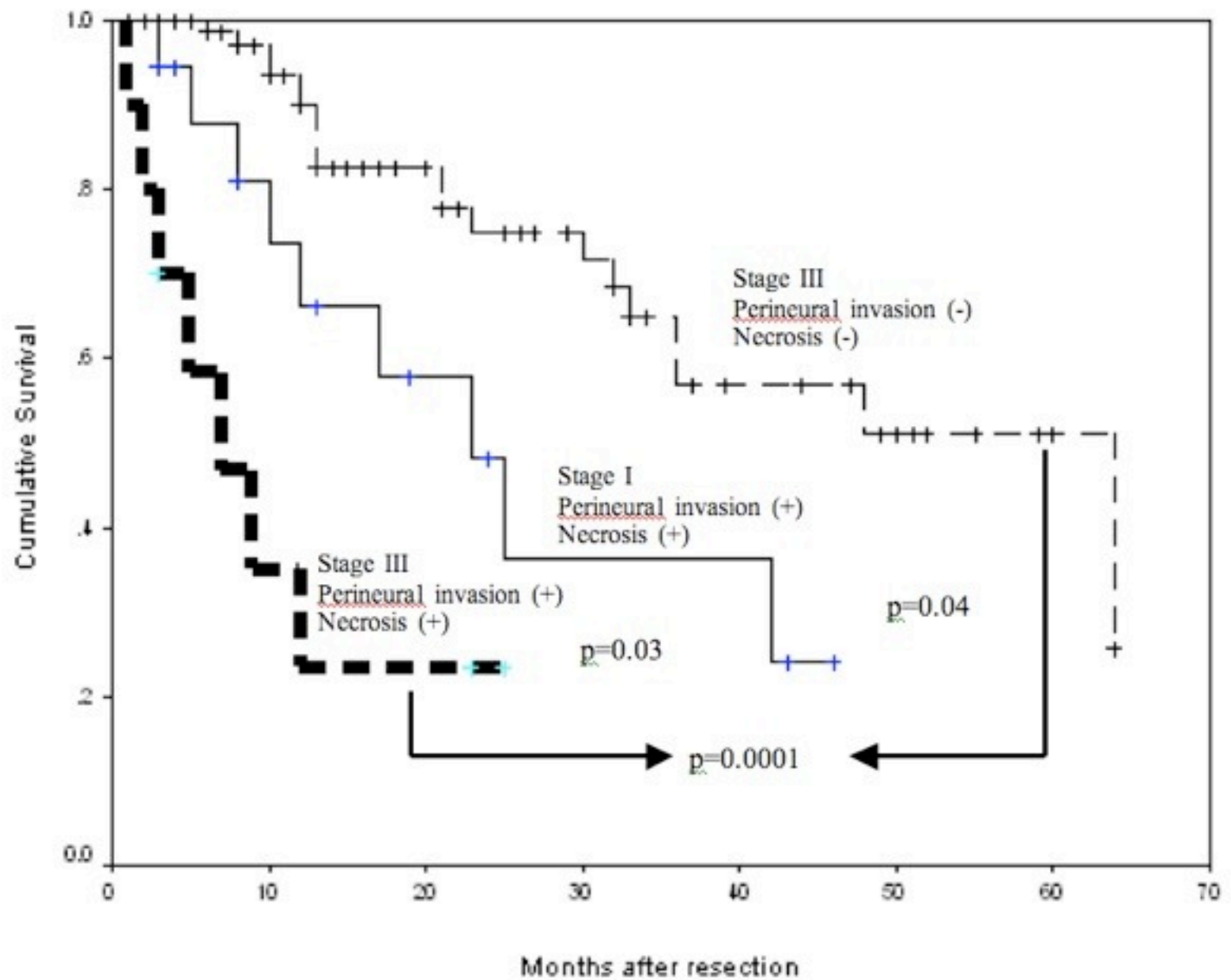
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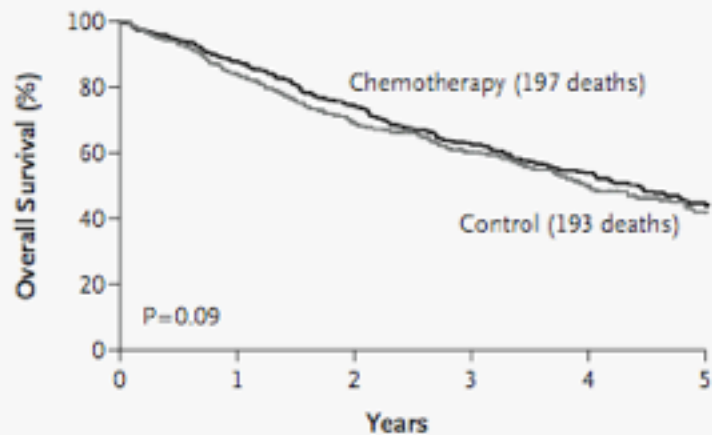
- Volm ve ark.:** fas, ERbB-1, cyclin A and PCNA ile uzun süreli sağkalım ilişkili
- **ACOSOG 20030 ve CALGB 9761:** DNA metilasyon profili ile akciğer kanserli hastalarda, tümör histolojisi, evre, tedaviye yanıt ve genel sağkalım ilişkili bulundu.

*Table 2. Significant Prognostic Factors Revealed by Univariate Analyses in Surgically Resected Non-small Cell Lung Carcinoma Patients*

Poor prognostic factors	No.	p Value
<b>pN Status</b>		
pN0	33	0.027
pN1	22	
pN2	17	
<b>Stage</b>		
I	24	0.009
Perineural invasion (+)	10	0.02
Perineural invasion (-)	14	
Lymphatic invasion (+)	9	0.01
Lymphatic invasion (-)	15	
II	28	
Perineural invasion (+)	8	0.05
Perineural invasion (-)	20	
Lymphatic invasion (+)	15	0.04
Lymphatic invasion (-)	13	
III	30	
Perineural invasion (+)	6	0.25
Perineural invasion (-)	24	
Lymphatic invasion (+)	13	0.31
Lymphatic invasion (-)	17	
<b>Lymphatic invasion</b>		
Negative	45	0.027
Positive	37	
<b>Perineural invasion</b>		
Negative	58	0.0148
Positive	24	

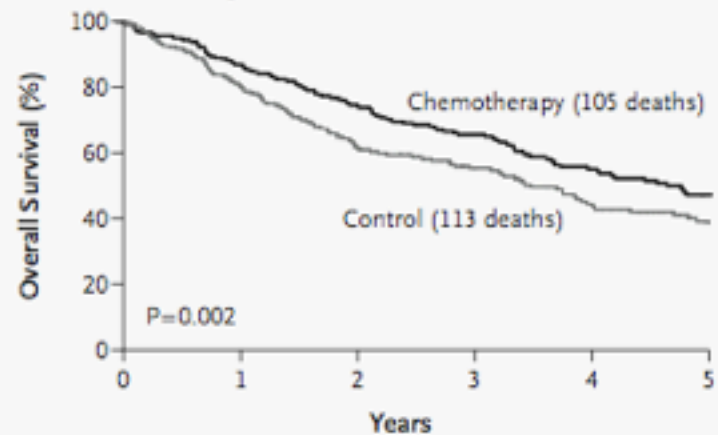




**A All Patients**

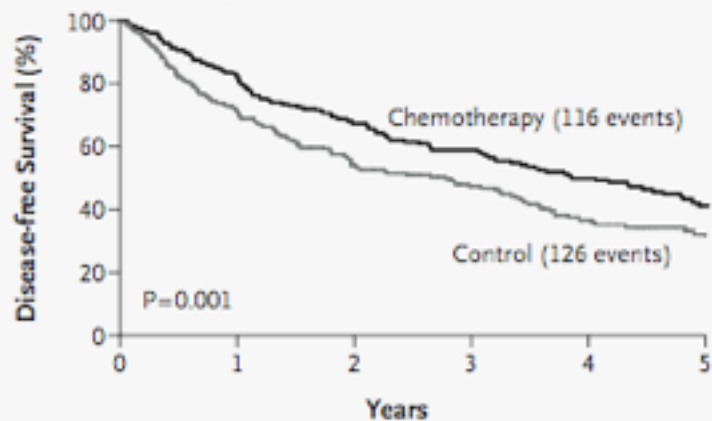
No. at Risk

Chemotherapy	389	341	282	206	143	81
Control	372	312	247	187	128	68

**B Patients with ERCC1-Negative Tumors**

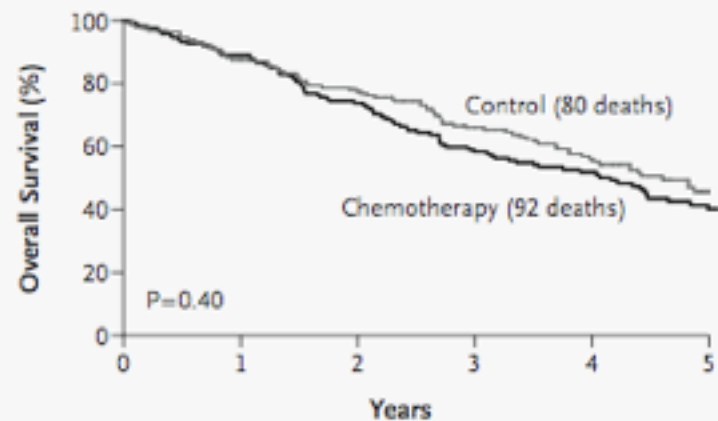
No. at Risk

Chemotherapy	224	194	161	121	81	47
Control	202	163	120	91	59	35

**C Patients with ERCC1-Negative Tumors**

No. at Risk

Chemotherapy	224	178	141	106	75	42
Control	202	142	104	78	48	26

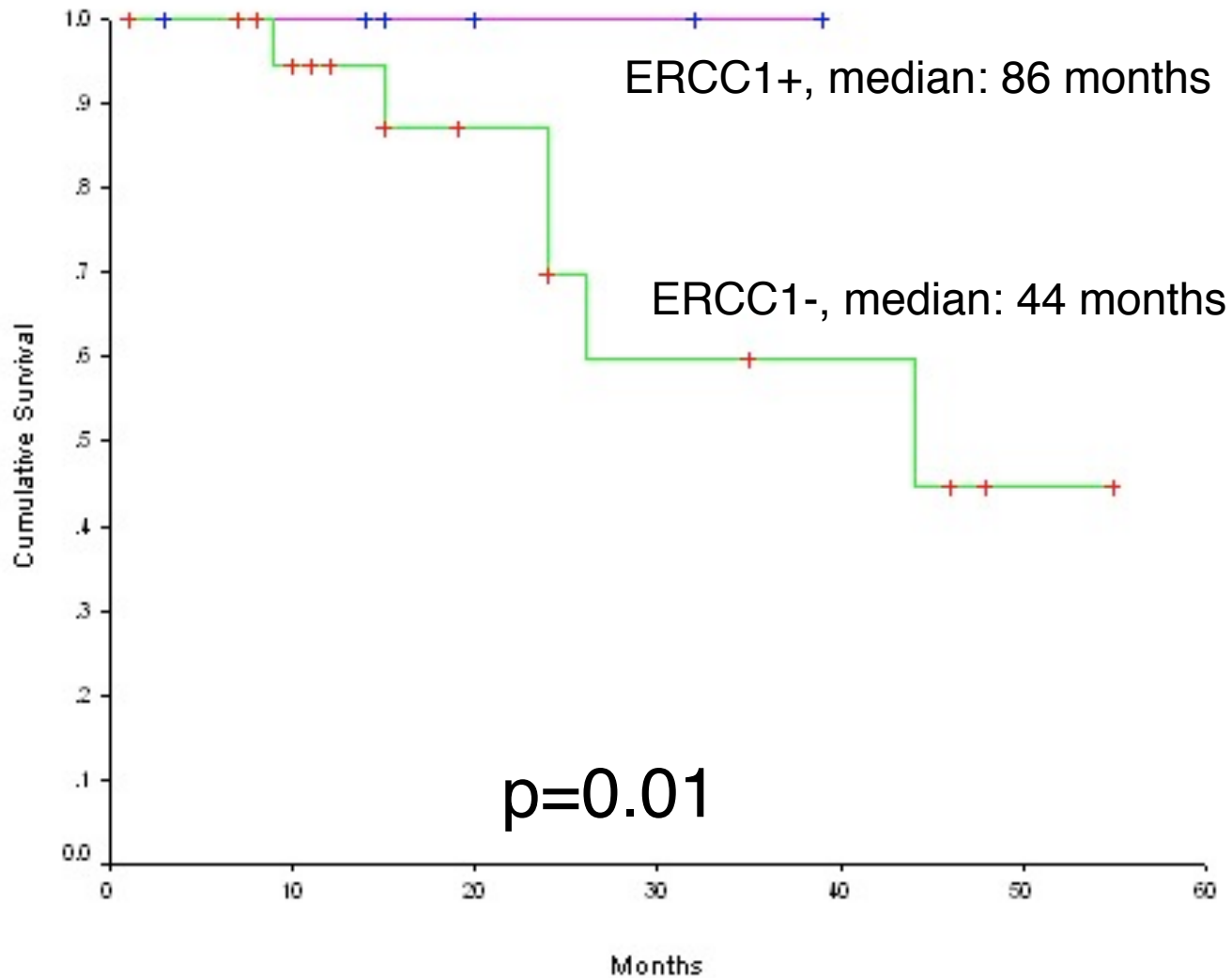
**D Patients with ERCC1-Positive Tumors**

No. at Risk

Chemotherapy	165	147	121	85	62	34
Control	170	149	127	96	69	33

Olaussen ve ark., NEJM, 2006

# ERCC1'e bağlı sağkalım



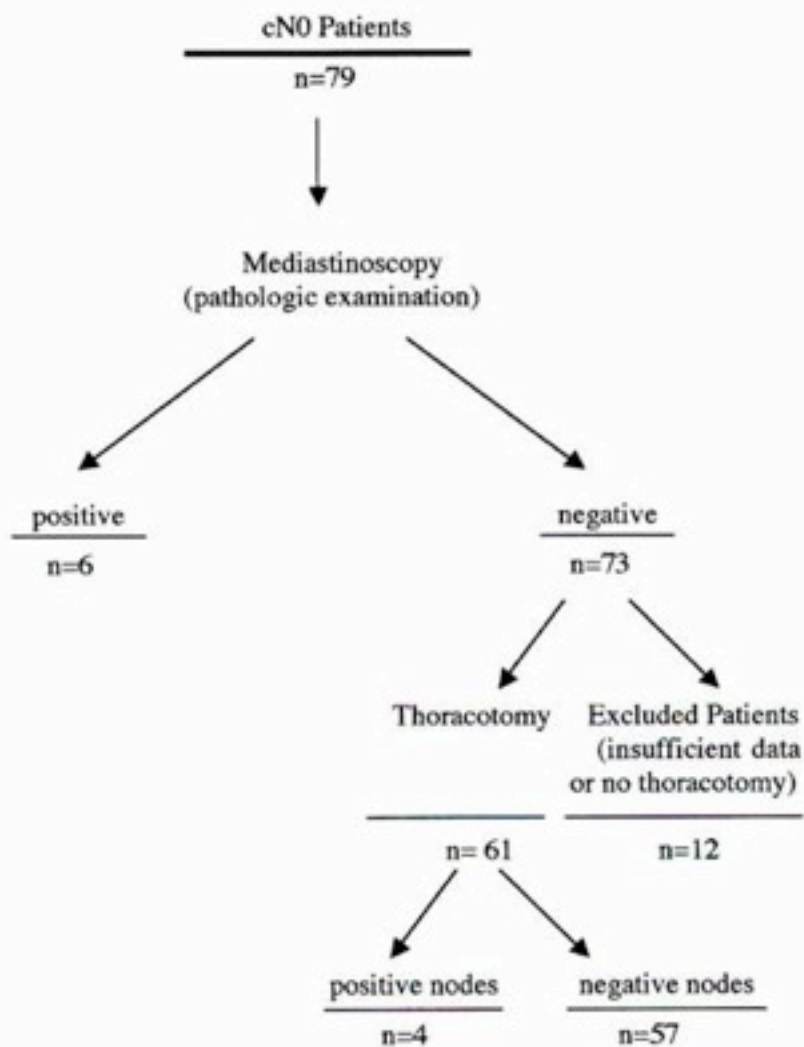
# Prognostik Moleküler Belirteçler

---

- p53
- EGFR
- erbB2
- ERCC1
- RRM1
- PTEN
- ErbB-1
- cyclin A
- PCNA
- p16
- RASS1A
- FHIT
- k-ras
- DNA methylation

*\*Thorac Cardiovasc Surg, 2002, baskıda.*

**Figure 1. Schematic depiction of patients undergoing mediastinoscopy and resection through thoracotomy.**



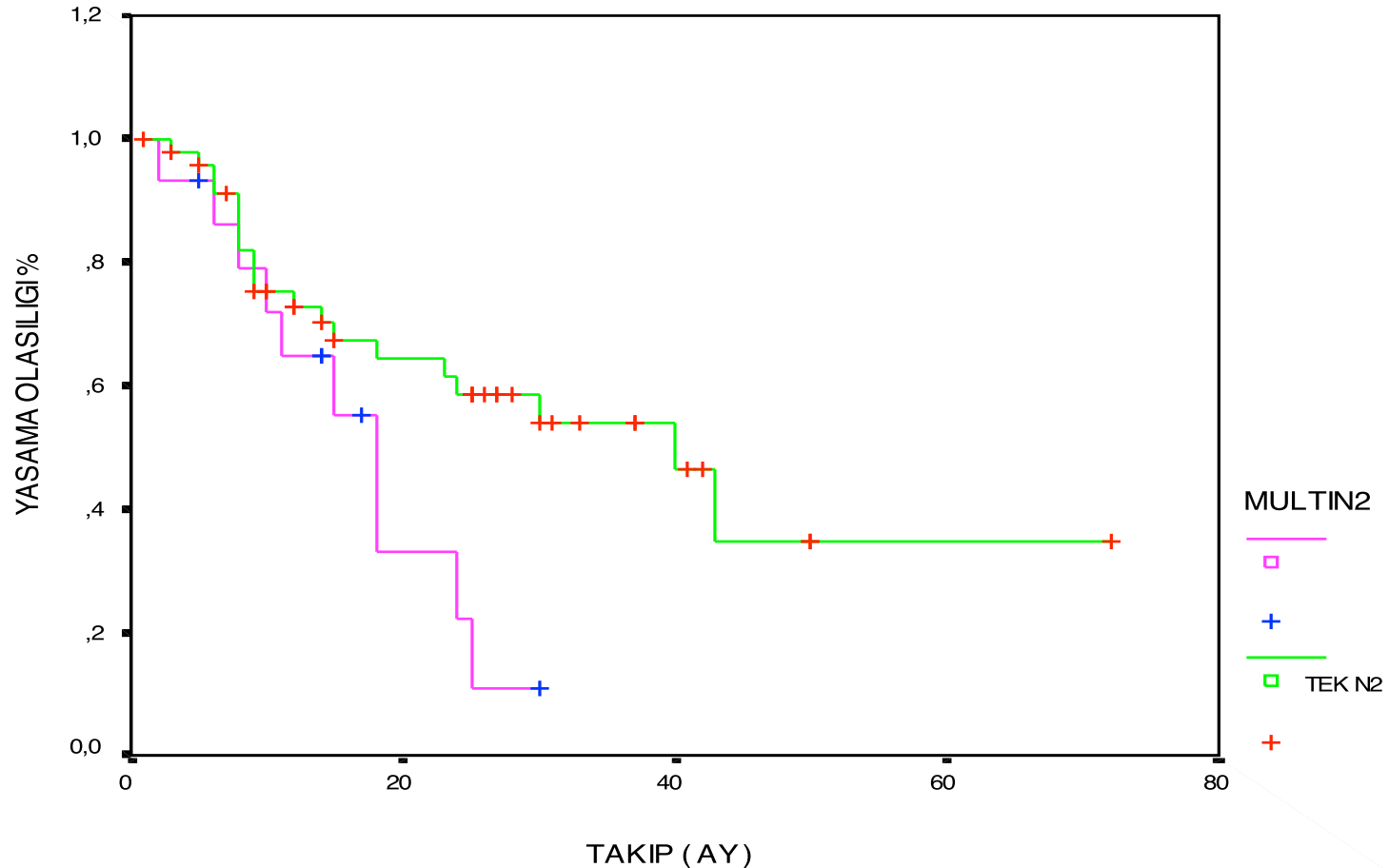
*\*Thorac Cardiovasc Surg, 2002, baskıda.*



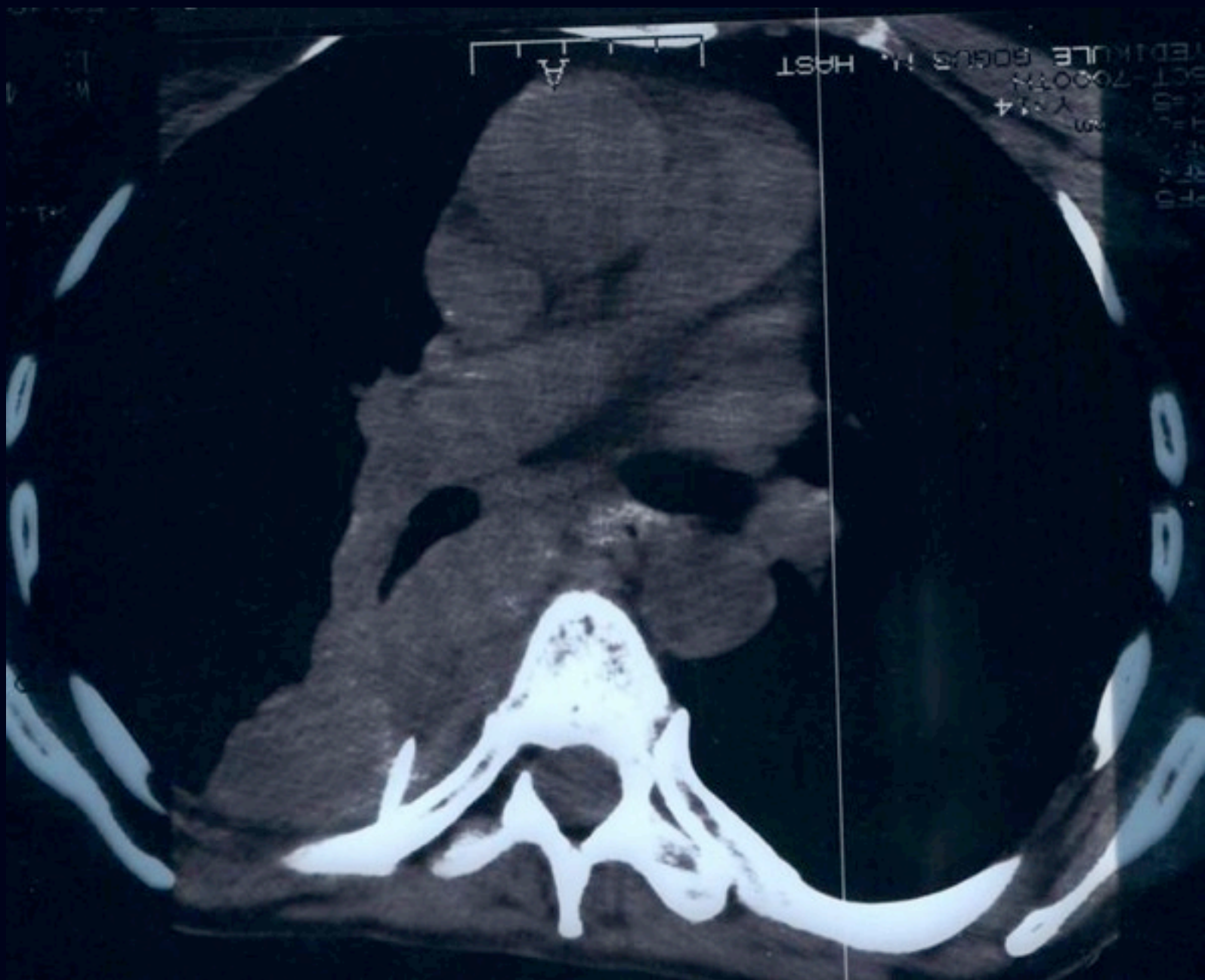
- Tek N2 hastalığı olan olgularda ortalama sağkalım (median) 40 ay, 3 yıllık ve 5 yıllık sağkalım %54,%34,

- Tek N2 hastalığı olan olgularda ortalama sağkalım (median) 40 ay, 3 yıllık ve 5 yıllık sağkalım %54,%34,
- Multipl N2 de ise ortalama sağkalım 18 ay, 2 yıllık sağkalım %11 (log rank; p=0.04).

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- Multipl N2 de ise ortalama sağkalım 18 ay, 2 yıllık sağkalım %11 (log rank; p=0.04).







Y: 14  
SCT-700074  
VEDIKULE BOGUS M. HAST

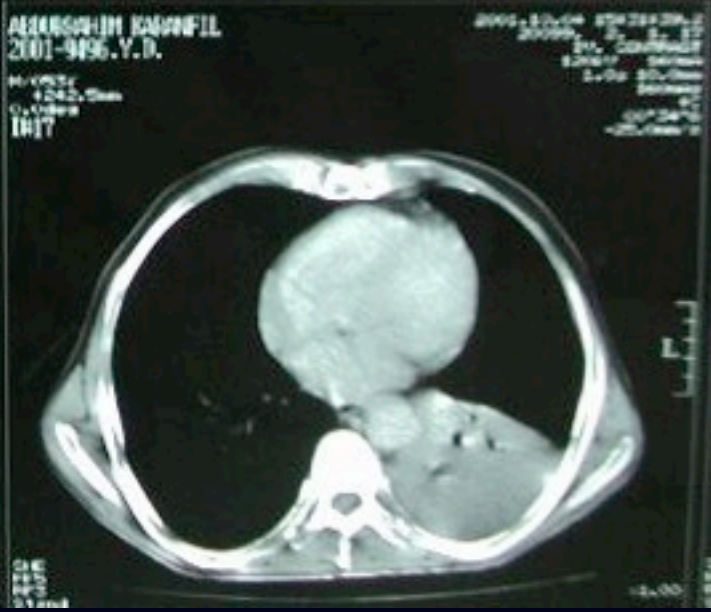
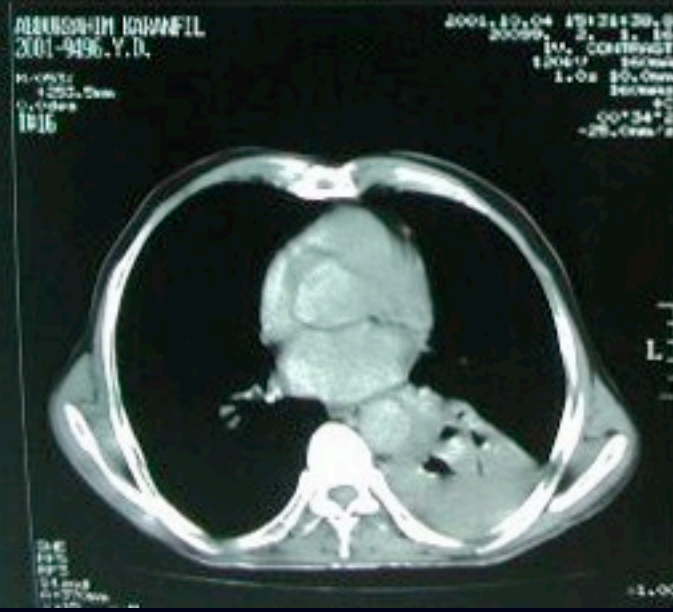
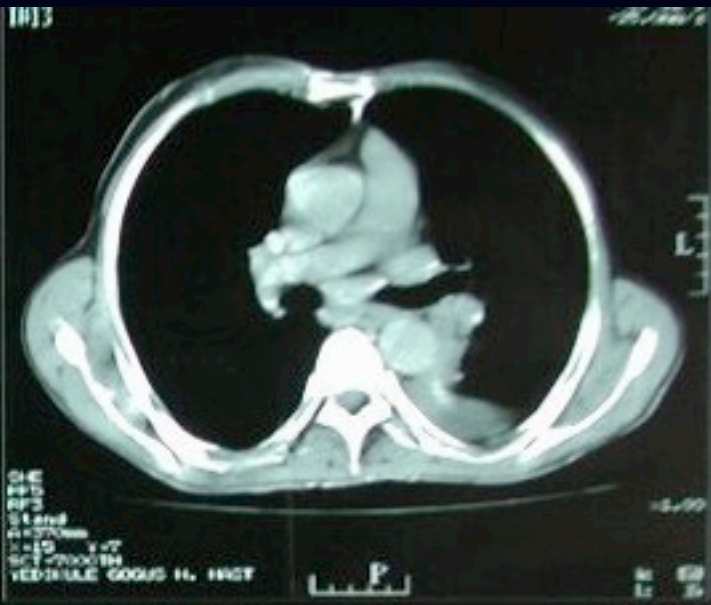


# VİDEOTORAKOSKOPİK EVRELEME

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# PREOPERATİF DEĞERLENDİRME

# PREOPERATİF DEĞERLENDİRME

TAM KLİNİK DEĞERLENDİRME

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# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)



Metastaz(+)



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)



Metastaz(+)



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Metastaz(+)



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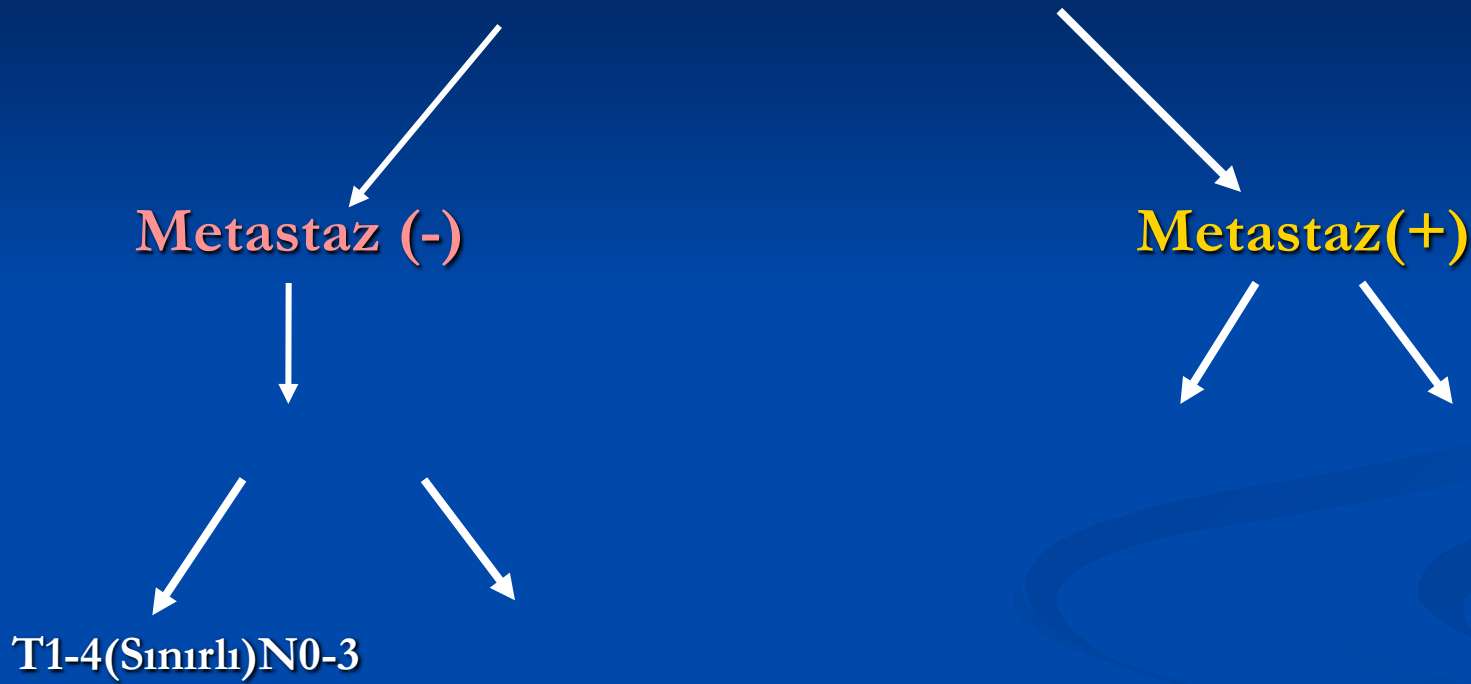
Metastaz (-)

Metastaz(+)



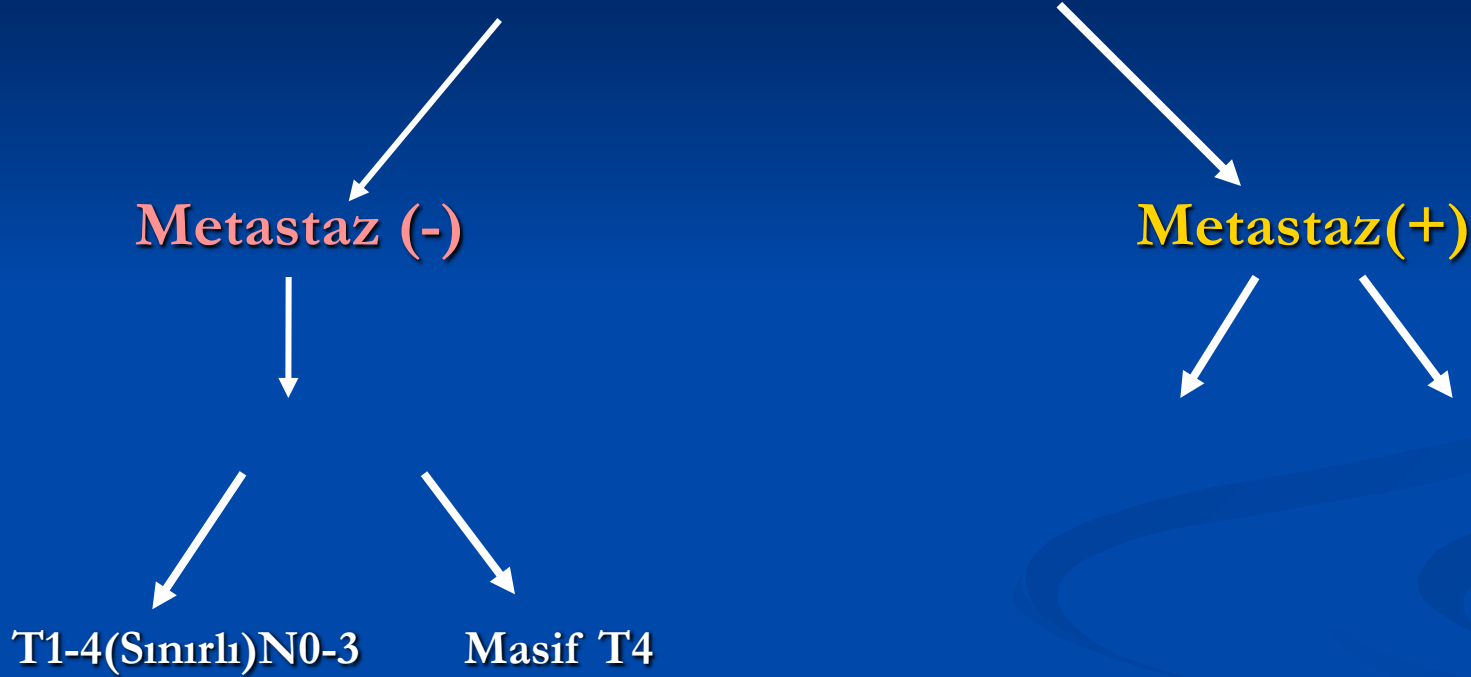
# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME



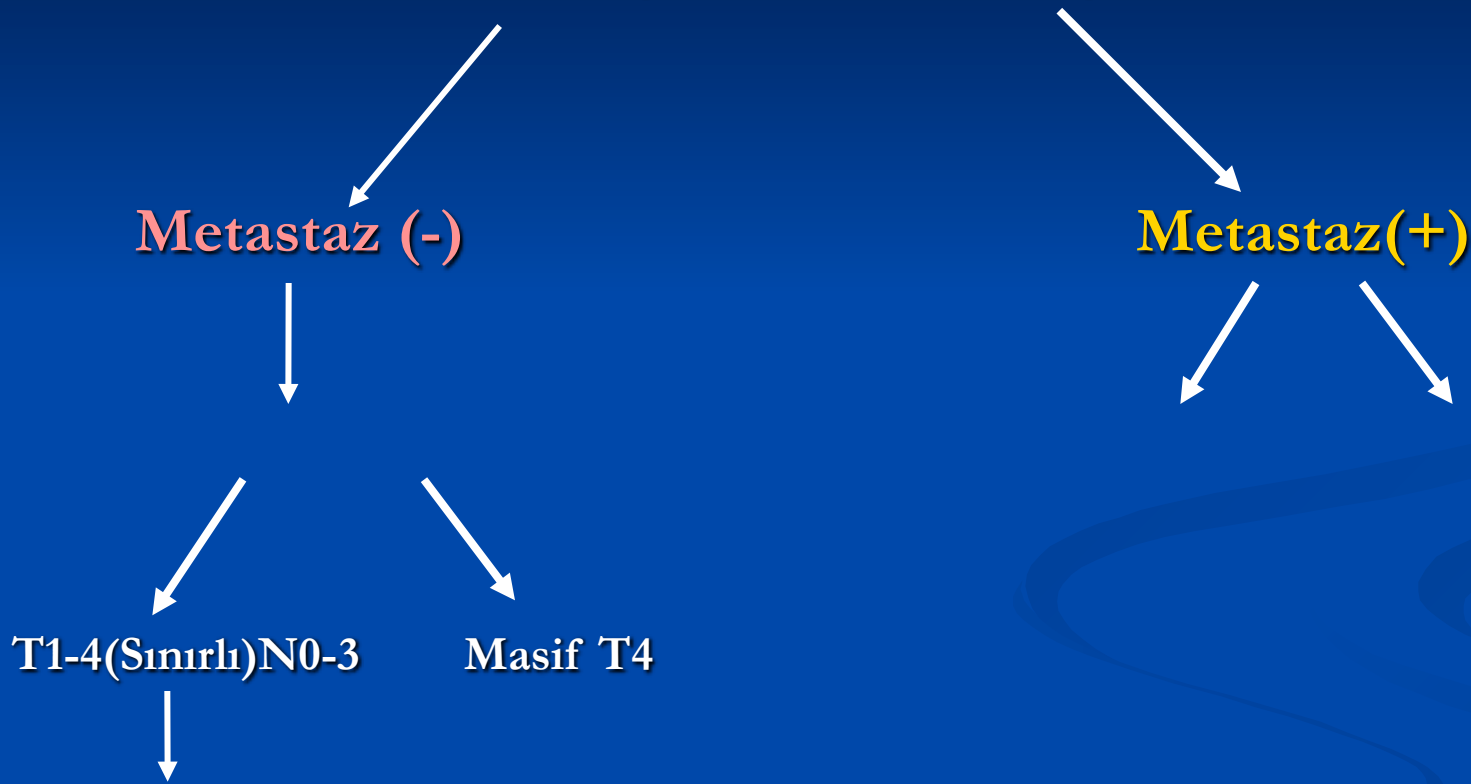
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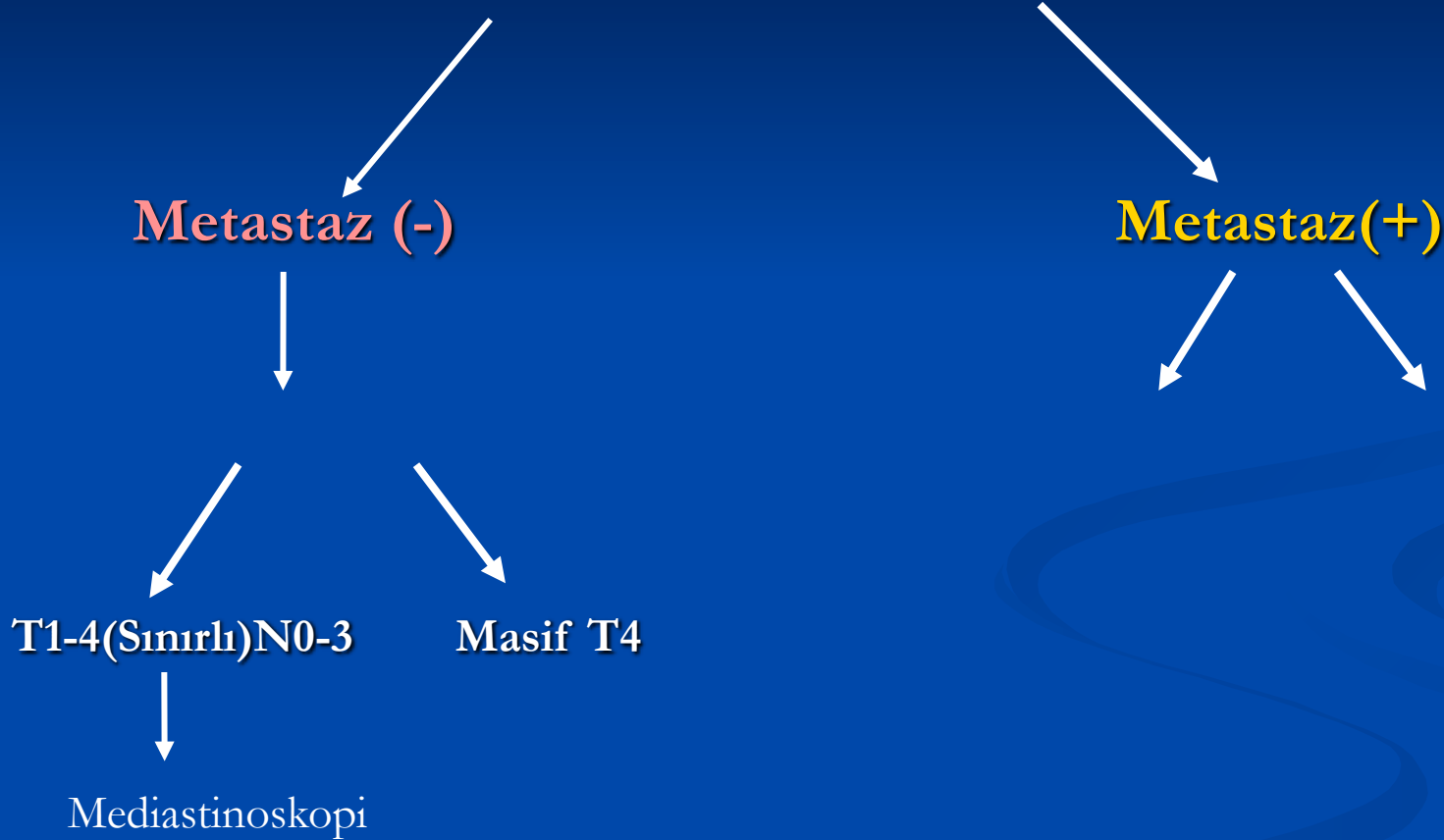
# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME



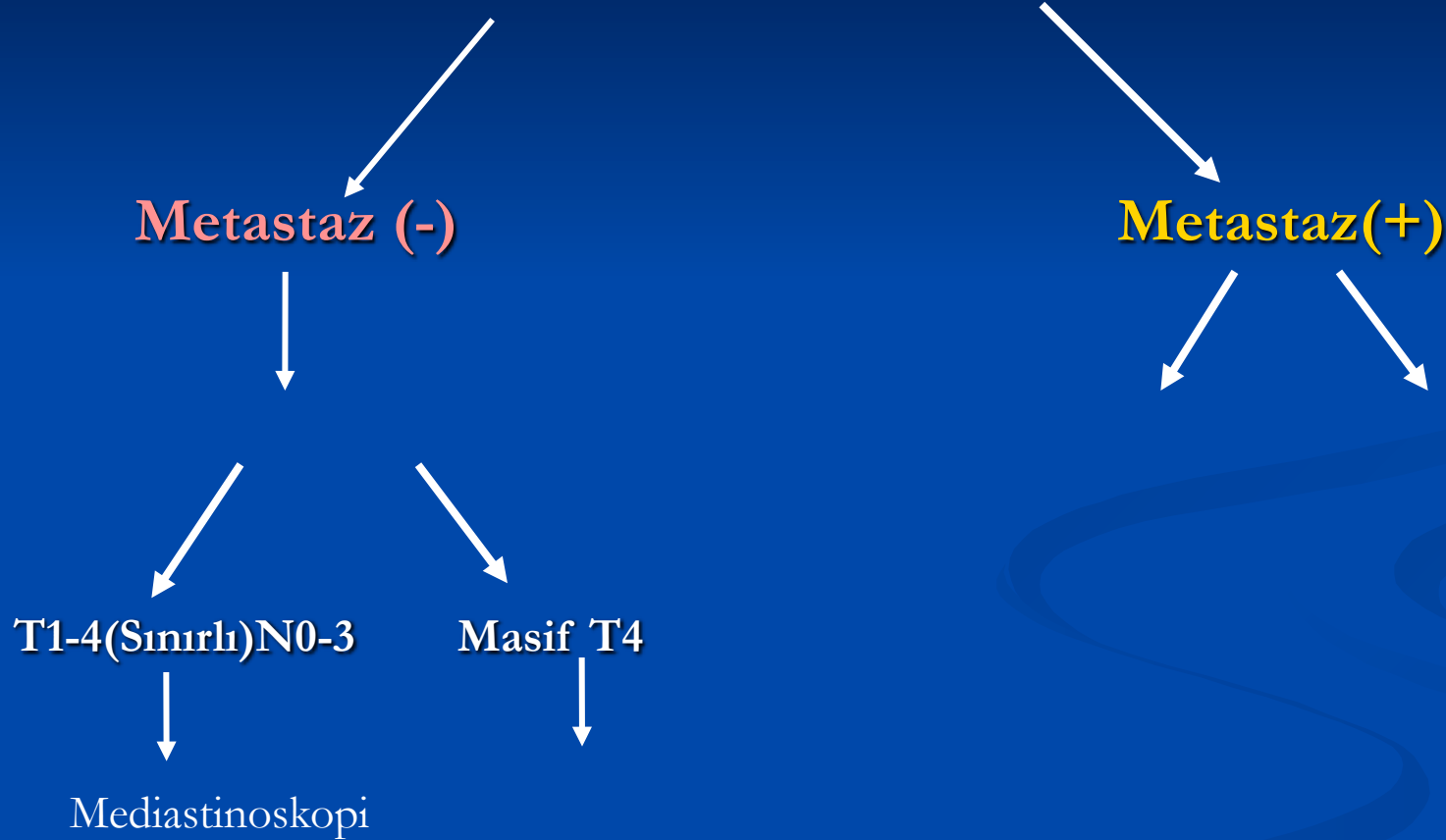
# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME



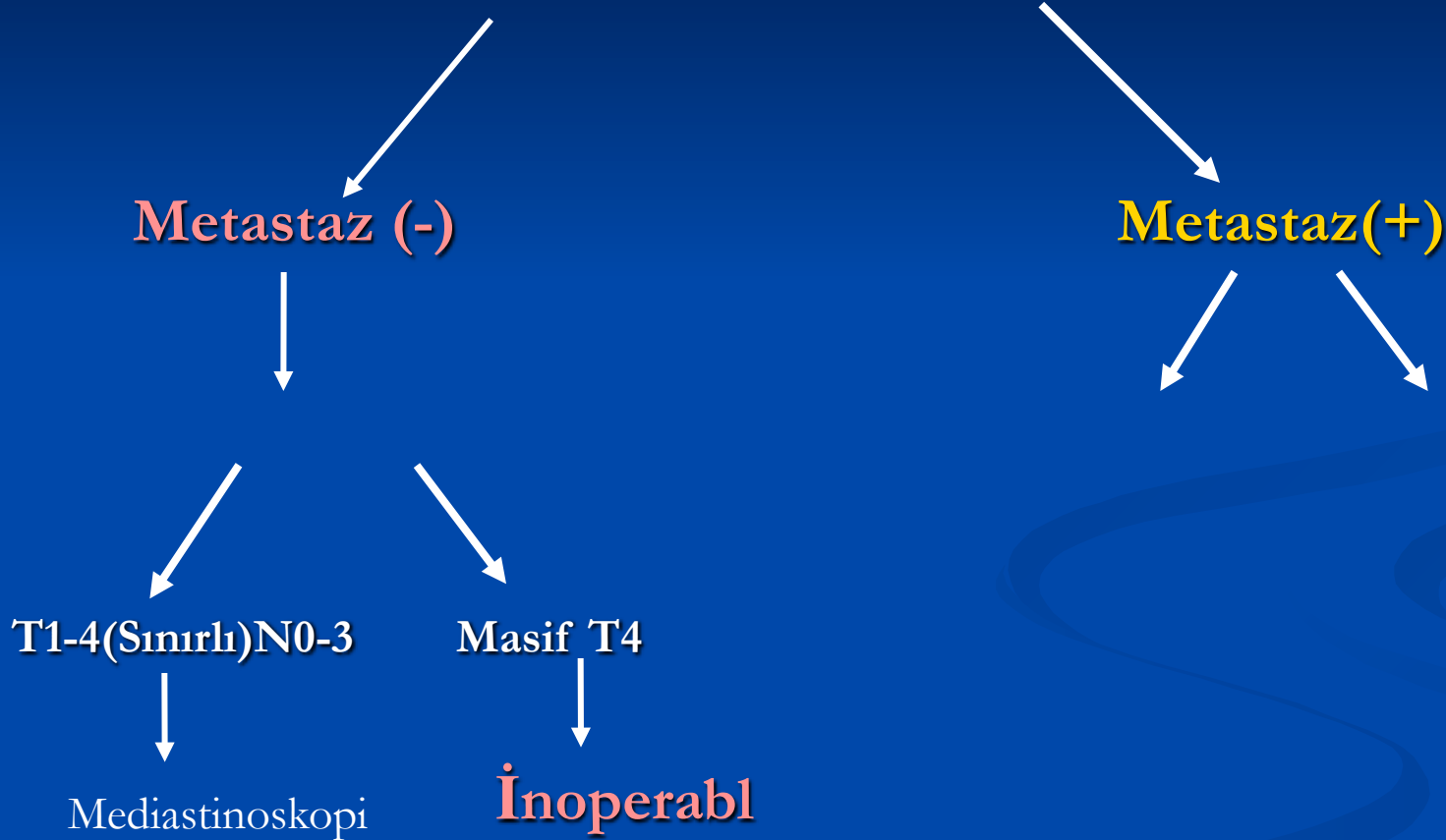
# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME



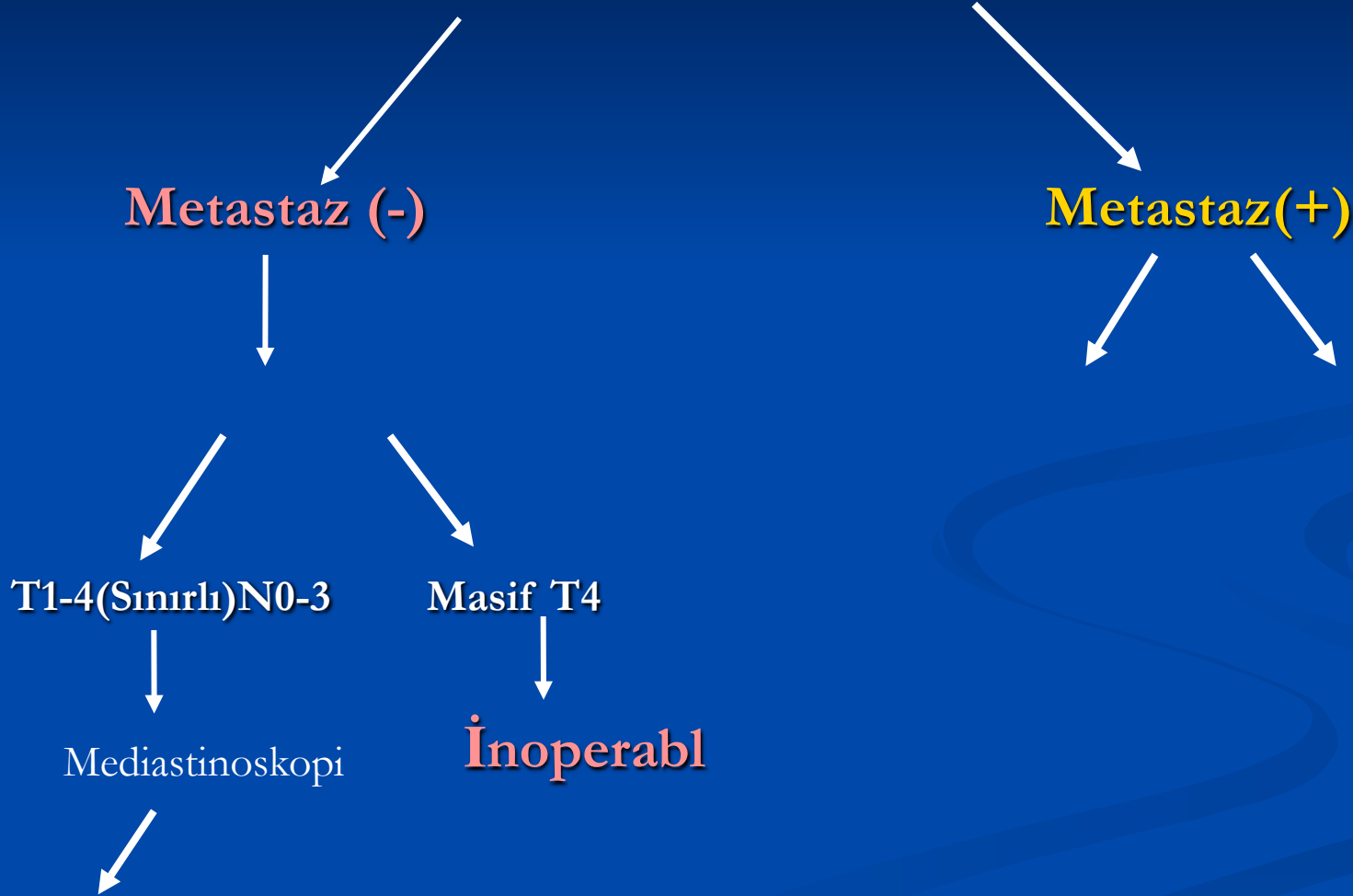
# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Metastaz(+)

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Metastaz(+)

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan

# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Metastaz(+)

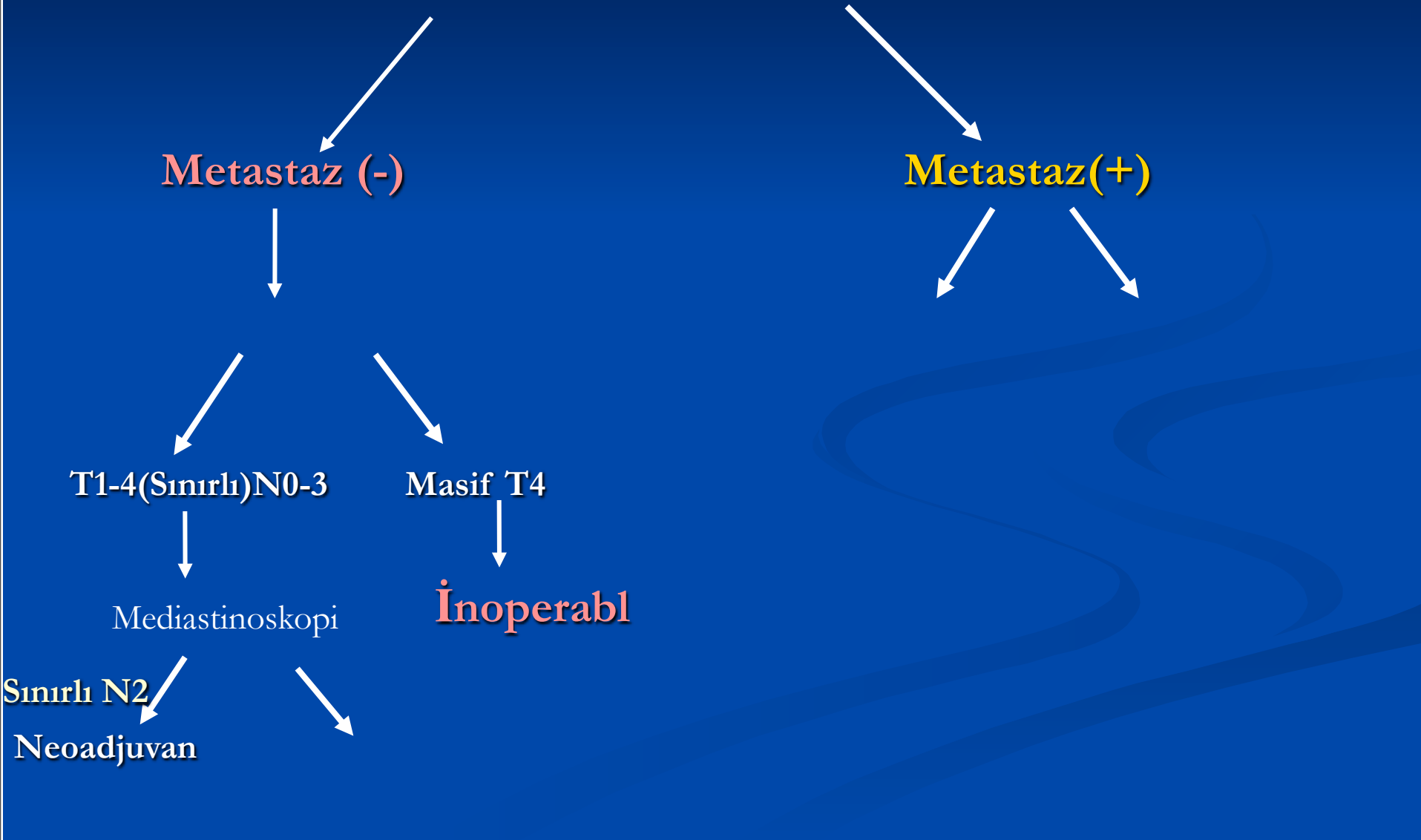
T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Metastaz(+)

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan

NO

# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Metastaz(+)

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan

NO

Kapsül İnvazyonlu N2, N3

# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Metastaz(+)

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan

NO

AMELİYAT

Kapsül İnvazyonlu N2, N3

# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Metastaz(+)

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

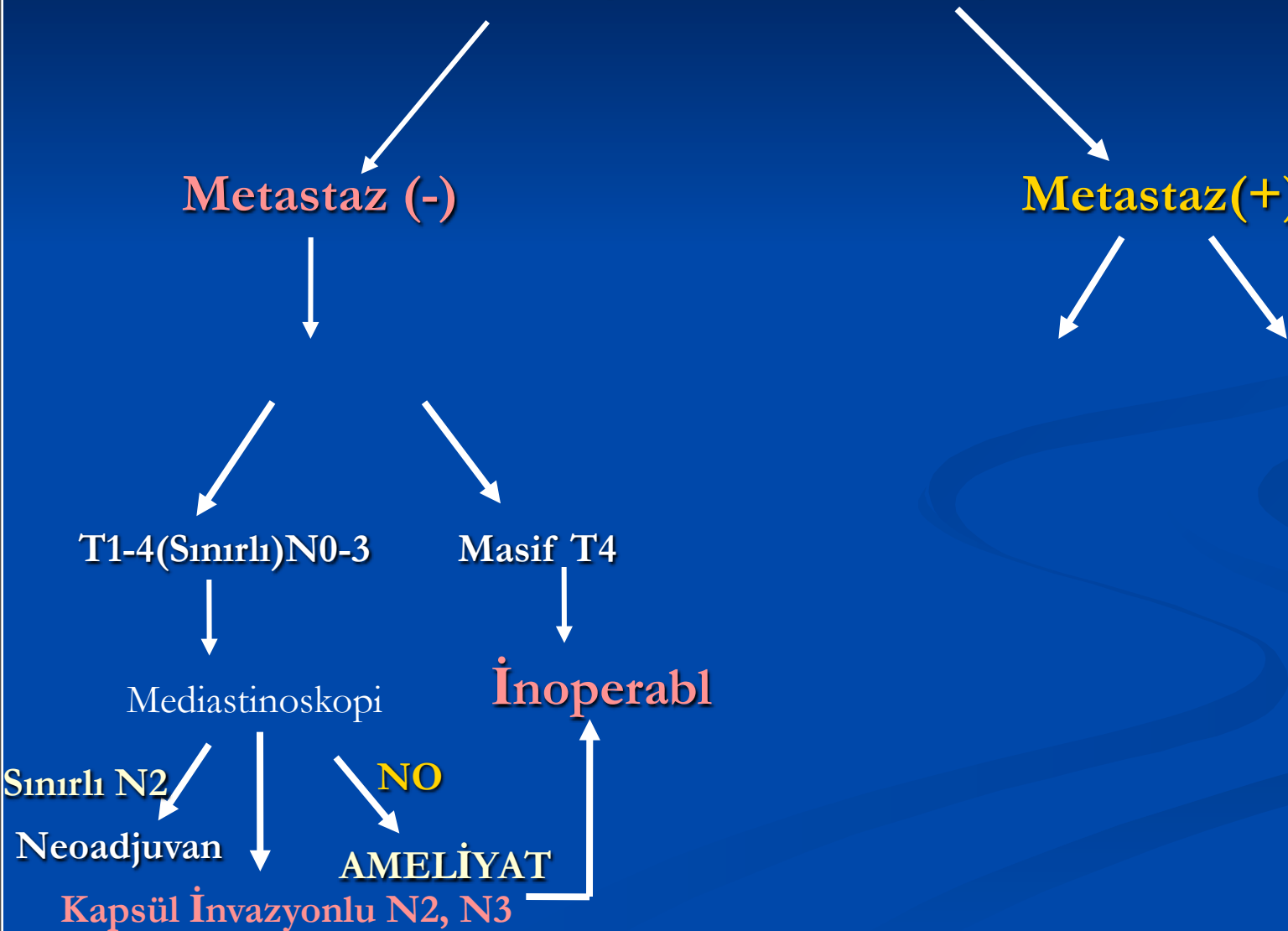
İnoperabl

Sınırlı N2  
Neoadjuvan

NO

AMELİYAT

Kapsül İnvazyonlu N2, N3



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Metastaz(+)

Toraks BT

Soliter

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

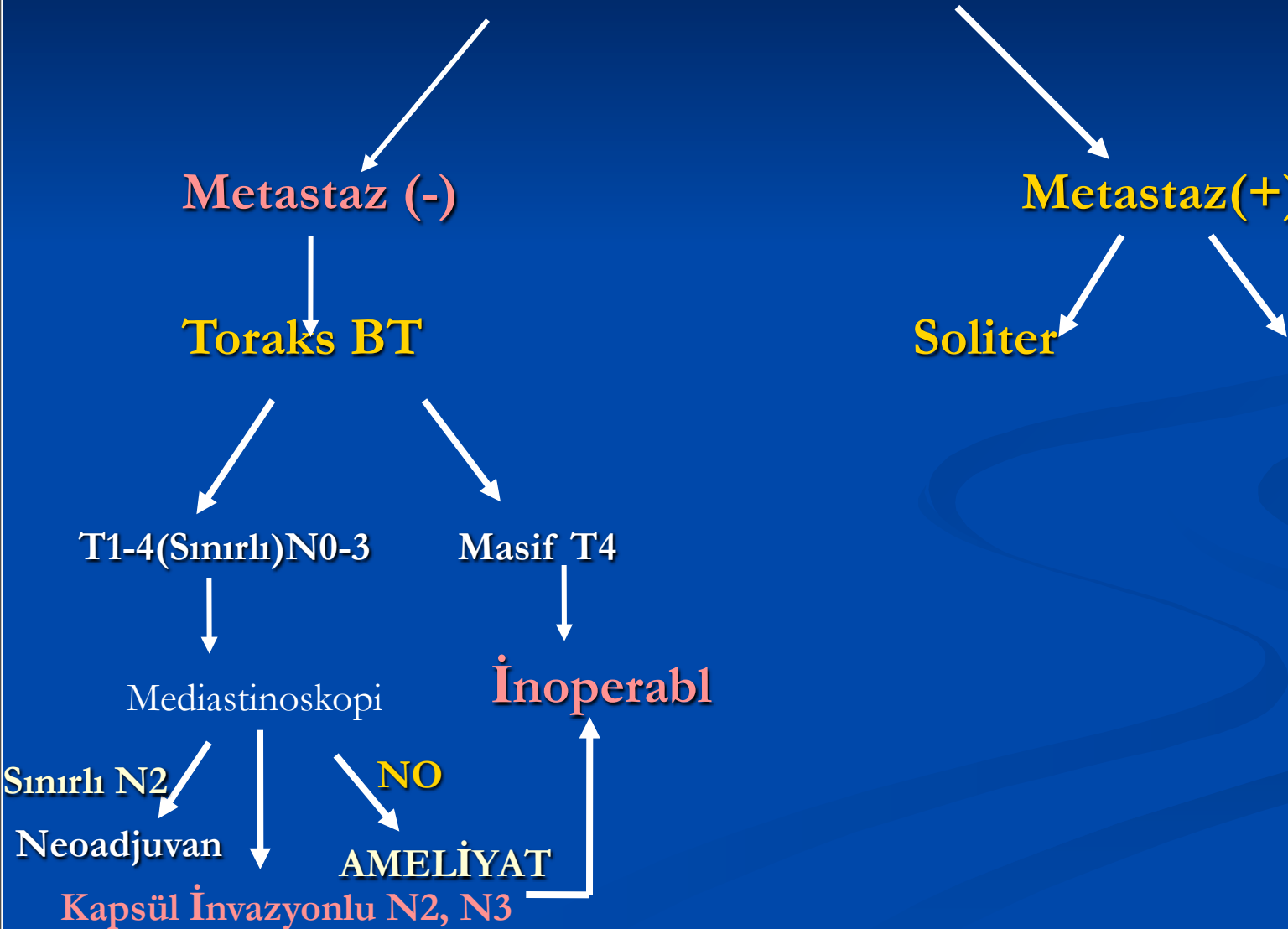
İnoperabl

Sınırlı N2  
Neoadjuvan

NO

AMELİYAT

Kapsül İnvazyonlu N2, N3



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Toraks BT

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan

NO

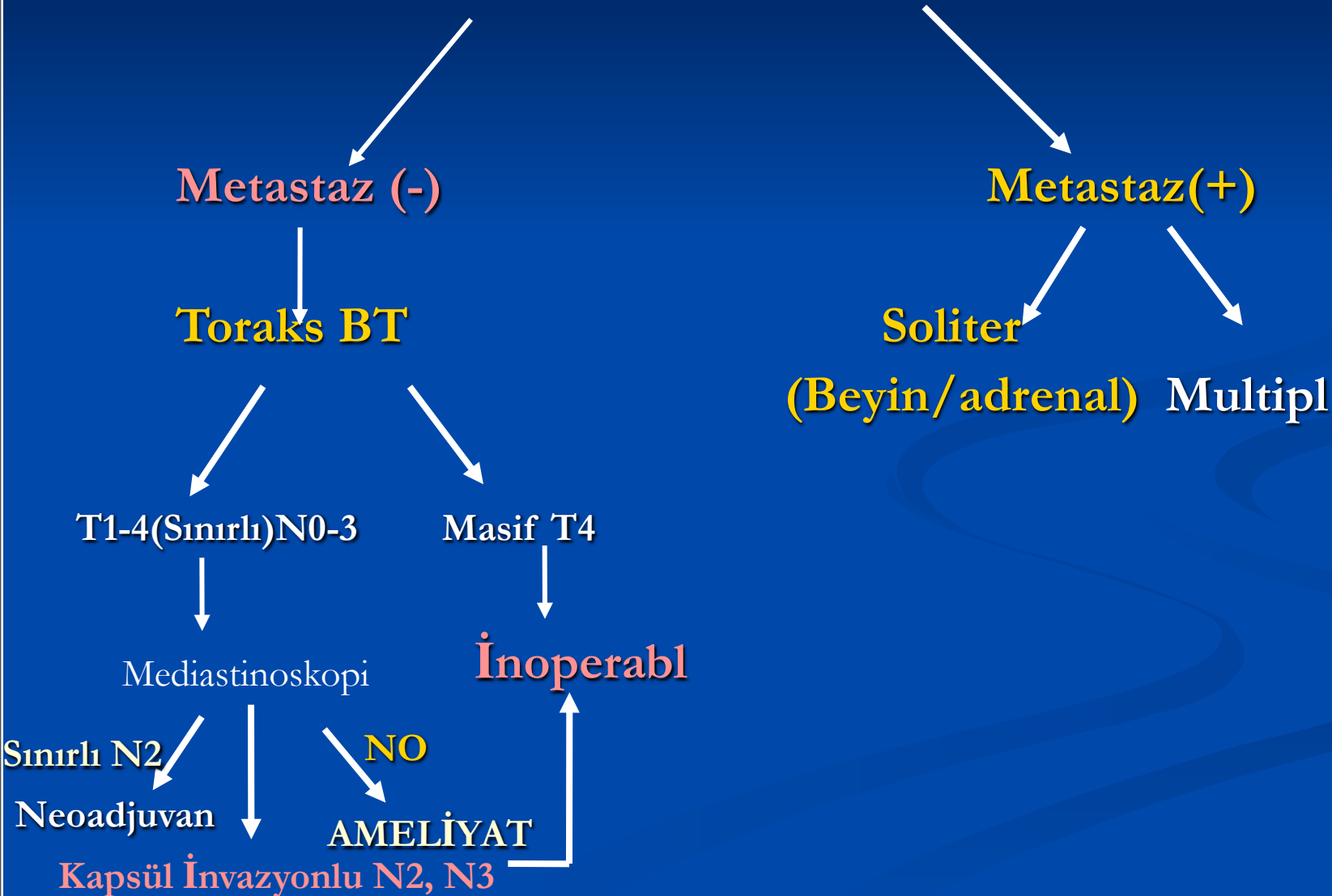
AMELİYAT

Kapsül İnvazyonlu N2, N3

Metastaz(+)

Soliter

(Beyin/adrenal) Multipl



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Toraks BT

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan

NO

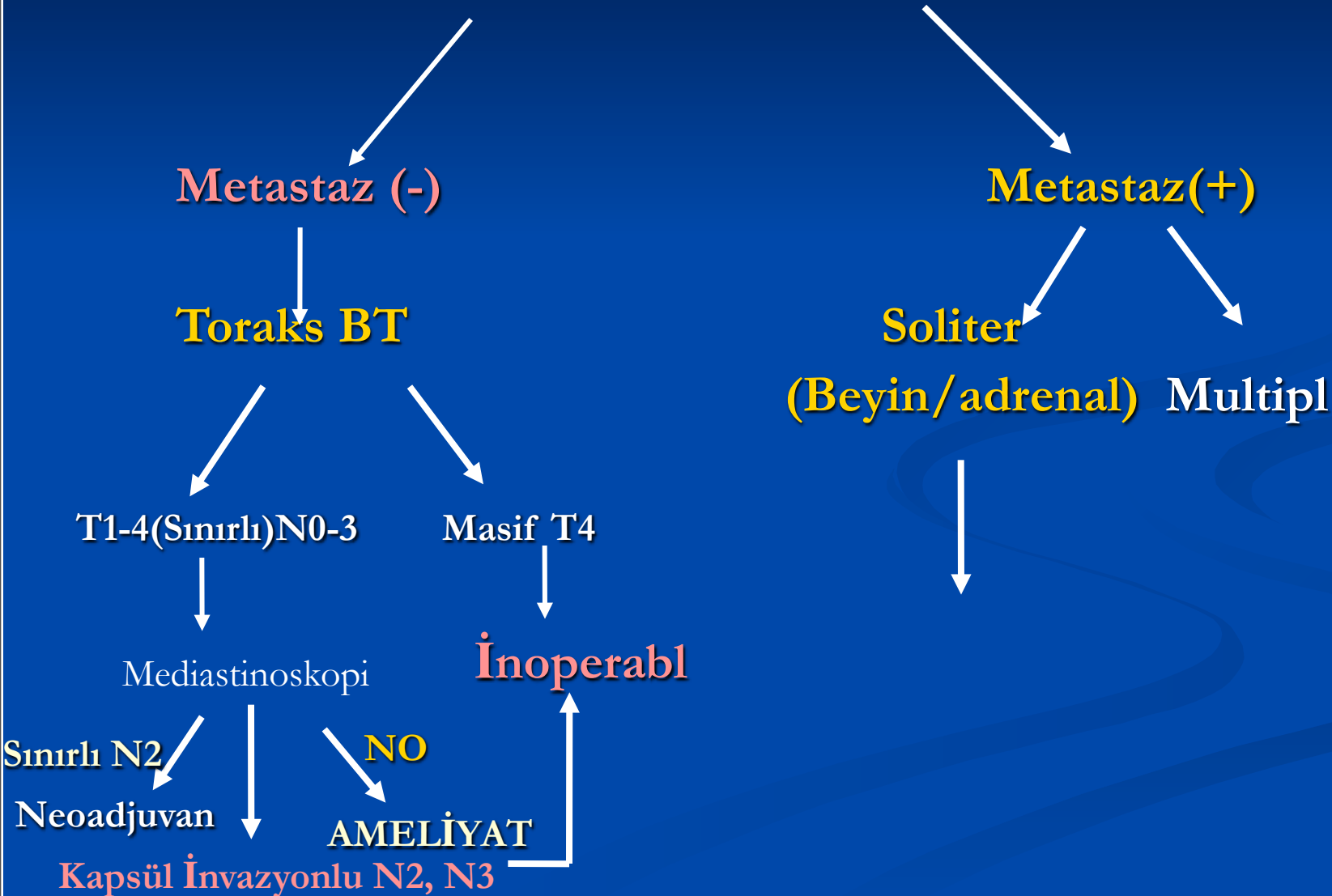
AMELİYAT

Kapsül İnvazyonlu N2, N3

Metastaz(+)

Soliter

(Beyin/adrenal) Multipl



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Toraks BT

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan

NO

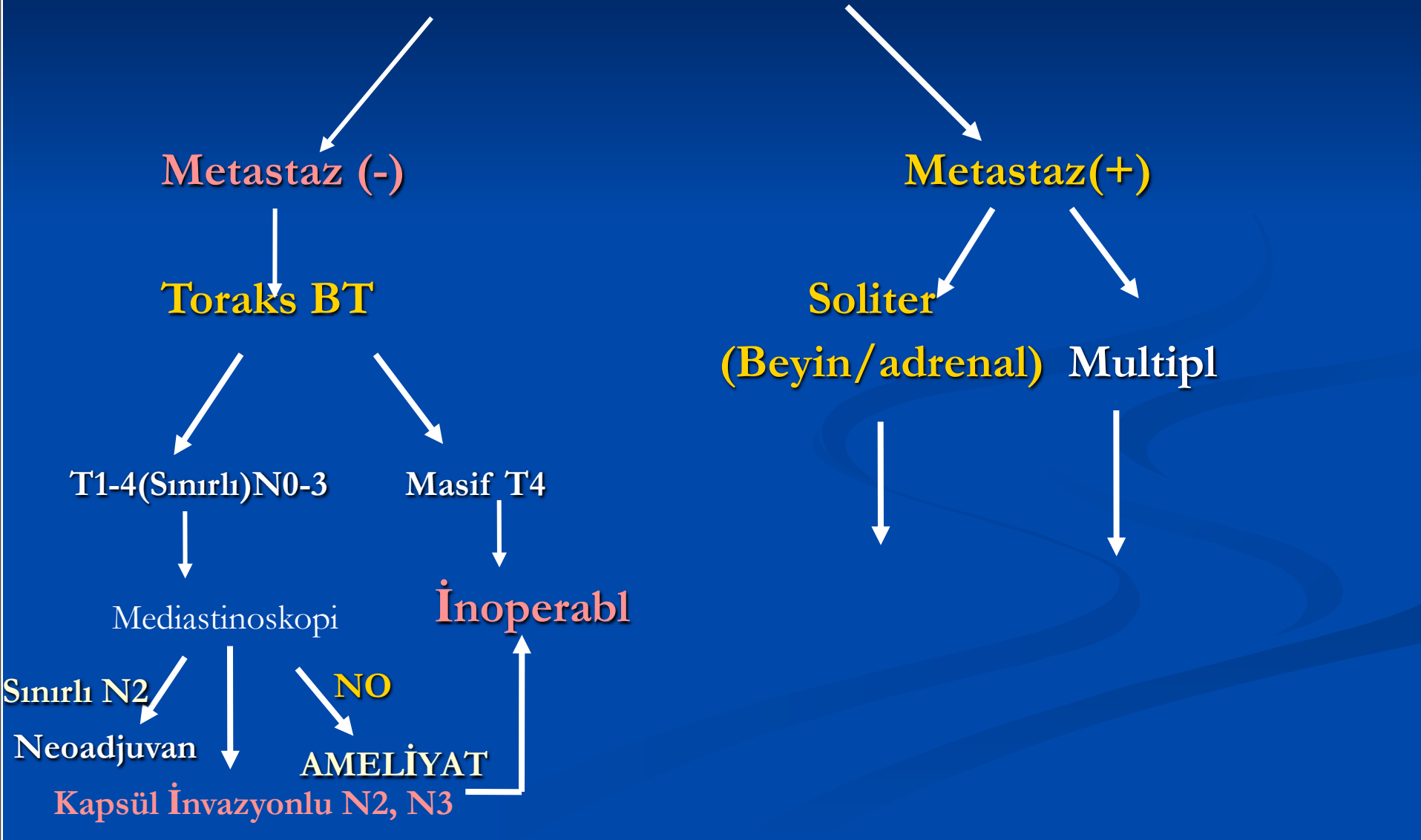
AMELİYAT

Kapsül İnvazyonlu N2, N3

Metastaz(+)

Soliter

(Beyin/adrenal) Multipl



# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Toraks BT

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan

NO

AMELİYAT

Kapsül İnvazyonlu N2, N3

Metastaz(+)

Soliter

(Beyin/adrenal) Multipl

Rezeksiyon

# PREOPERATİF DEĞERLENDİRME

## TAM KLİNİK DEĞERLENDİRME

Metastaz (-)

Toraks BT

T1-4(Sınırlı)N0-3

Masif T4

Mediastinoskopi

İnoperabl

Sınırlı N2  
Neoadjuvan

NO

AMELİYAT

Kapsül İnvazyonlu N2, N3

Metastaz(+)

Soliter

(Beyin/adrenal) Multipl

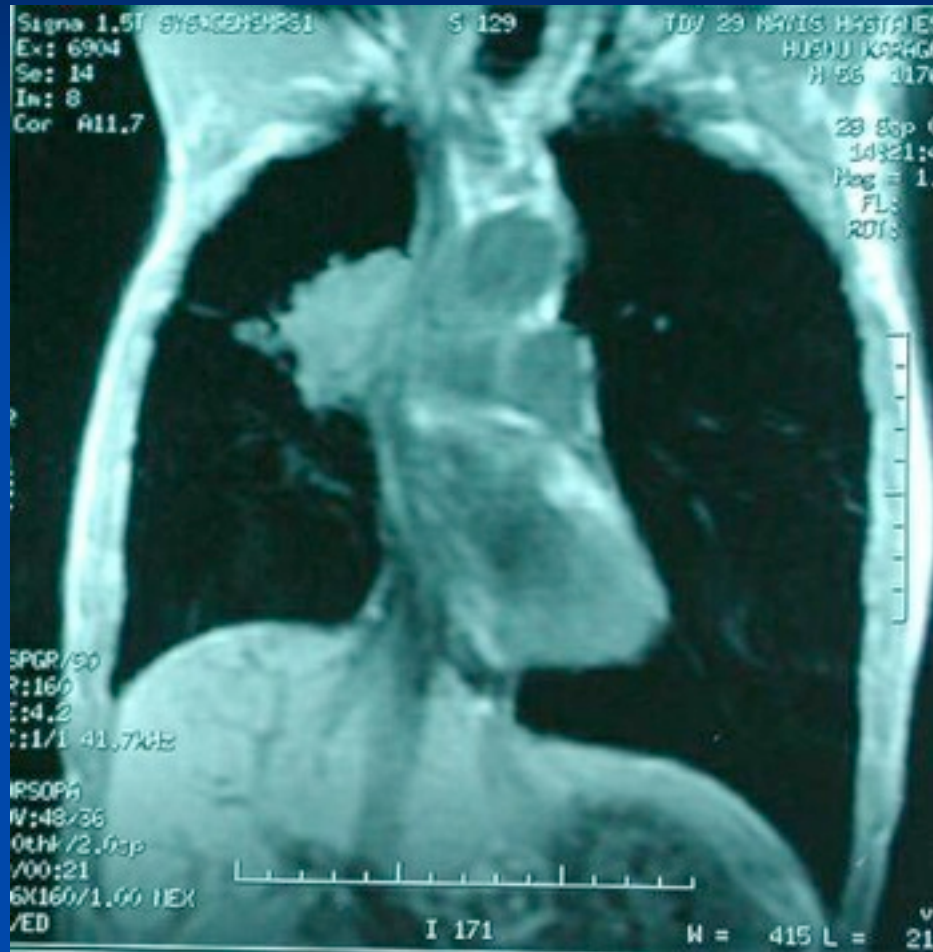
Rezeksiyon

Onkolojik Ted.

# Vena Cava Superior Tutulumu



# Vena Cava Superior Tutulumu

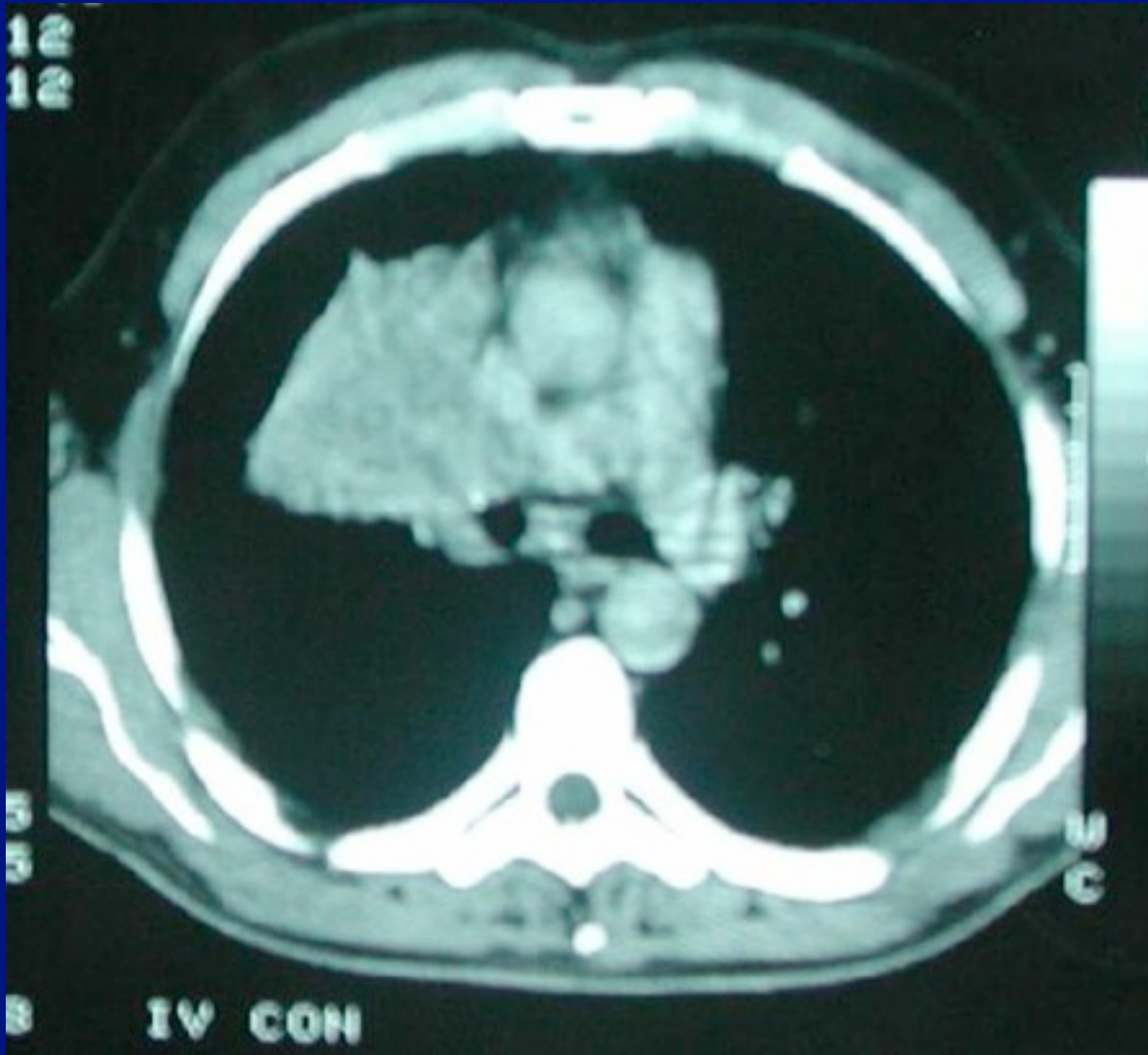


# NEOADJUVAN TEDAVI

# NEOADJUVAN TEDAVİ

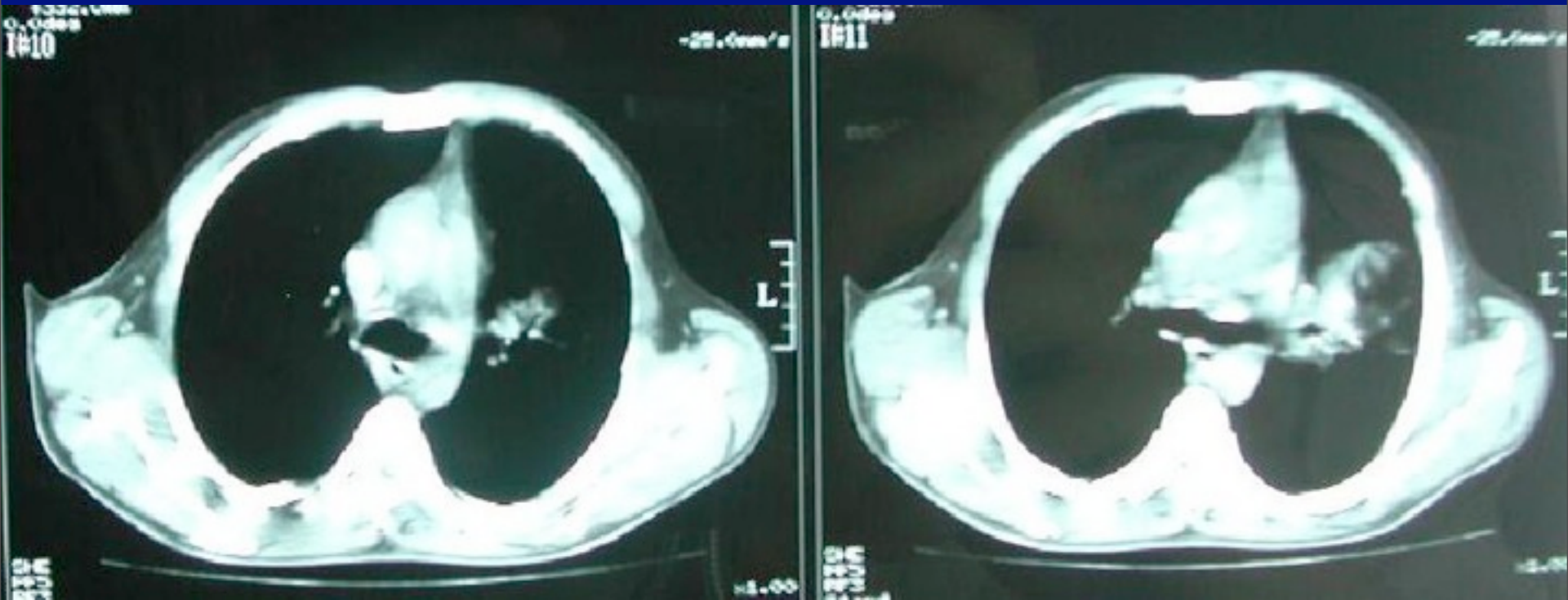






- Mediastinoskopi
- Neoadjuvan Kemoterapi -  
(Karinal N2 için)
- Torakotomi
- pT2N0

- Mediastinoskopi
- Neoadjuvan Kemoterapi -  
(Karinal N2 için)
- Torakotomi
- **pT2N0**



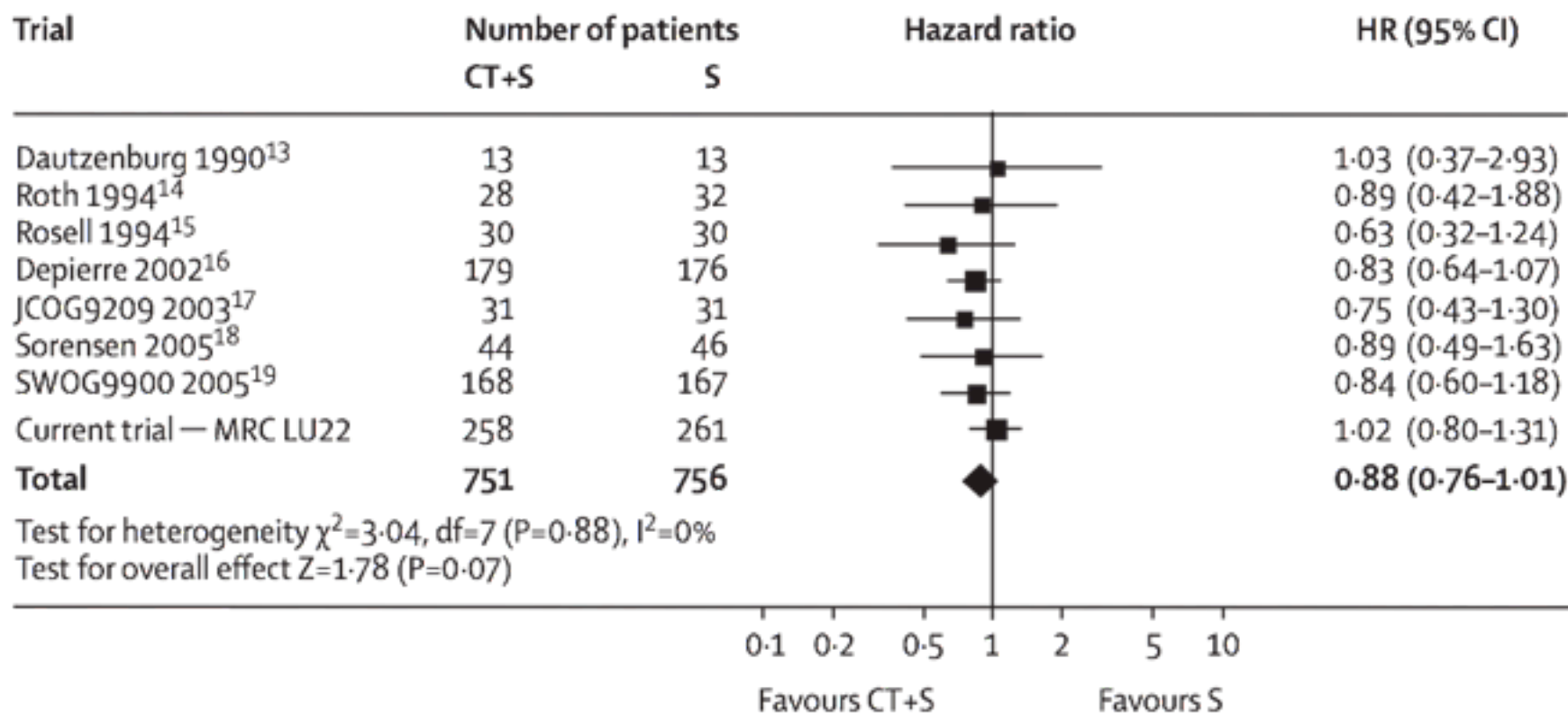


Figure 5: Updated systematic review

# EVRELER

Occult carcinoma	TX	N0	M0
Stage 0	Tis	N0	M0
Stage IA	T1a,b	N0	M0
Stage IB	T2a	N0	M0
Stage IIA	T2b	N0	M0
	T1a,b	N1	M0
	T2a	N1	M0
Stage IIB	T2b	N1	M0
	T3	N0	M0
Stage IIIA	T1a,b, T2a,b	N2	M0
	T3	N1, N2	M0
	T4	N0, N1	M0
Stage IIIB	T4	N2	M0
	Any T	N3	M0
Stage IV	Any T	Any N	M1

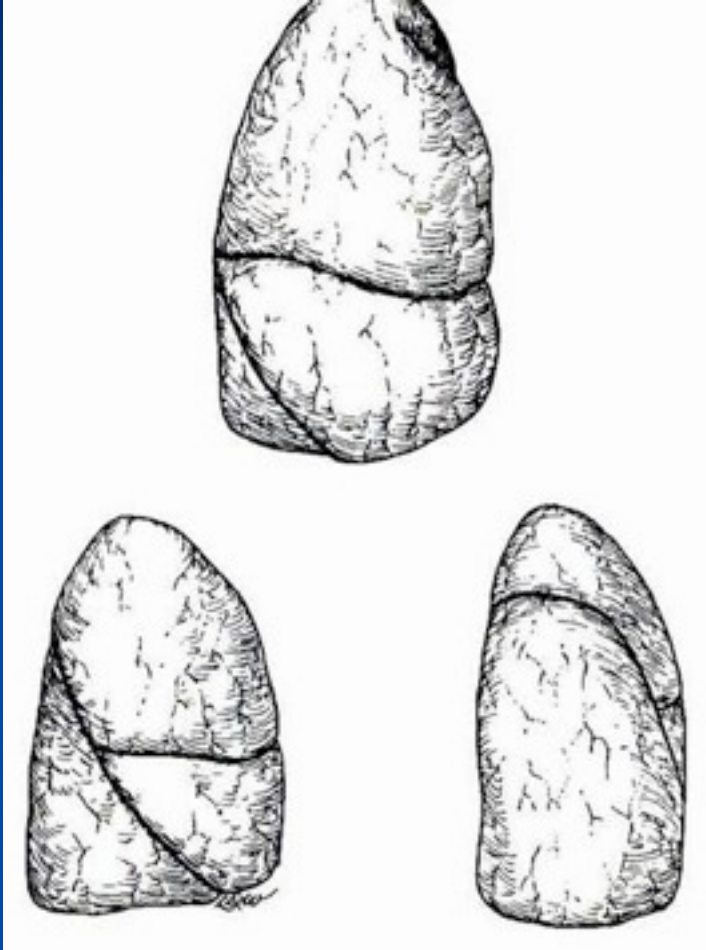




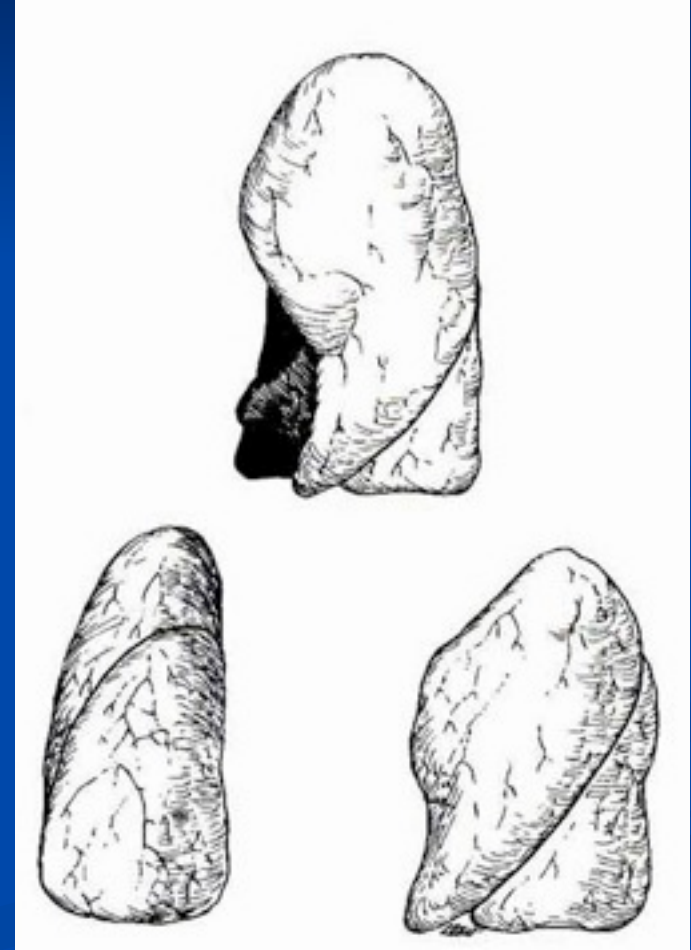
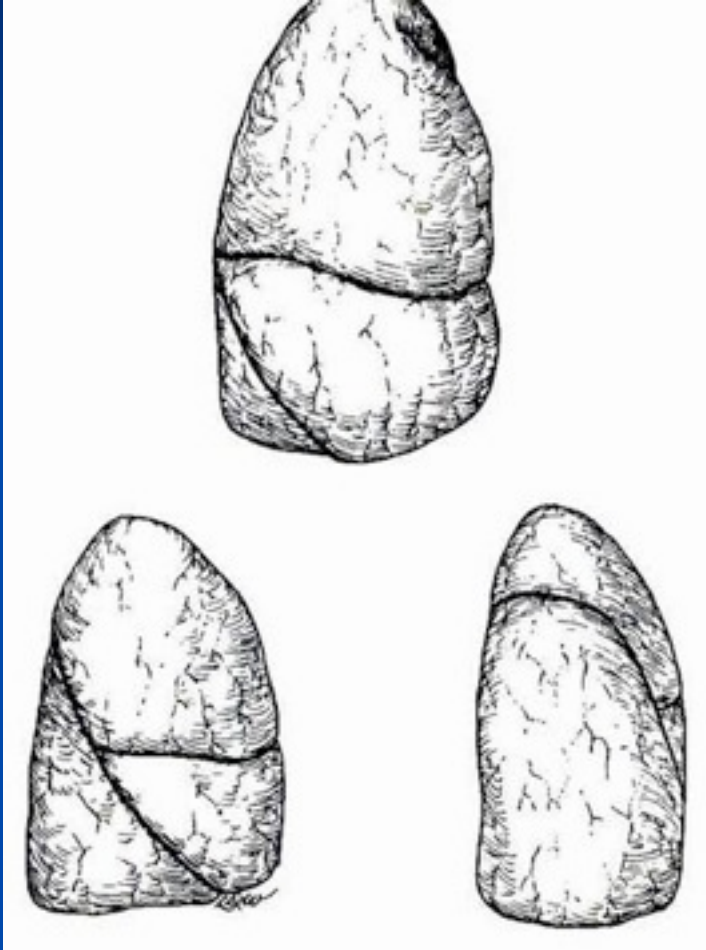
KÜÇÜK HÜCRE DIŐI  
AKCİĐER  
TÜMÖRLERİNDE İLERİ  
CERRAHİ GİRİŐİMLER

# STANDART REZEKSİYONLARDA ANATOMİ

# STANDART REZEKSİYONLARDA ANATOMİ

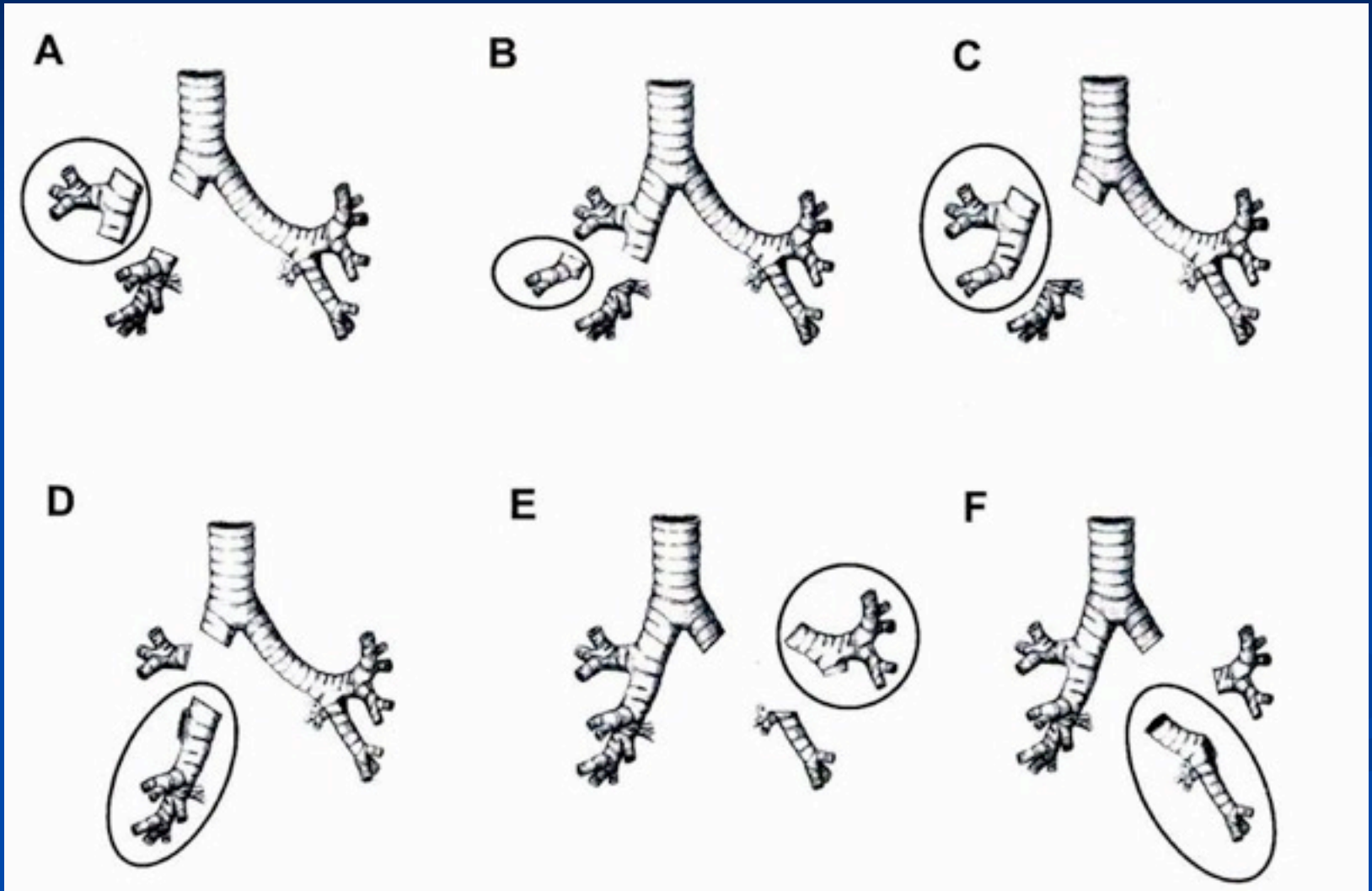


# STANDART REZEKSİYONLARDA ANATOMİ



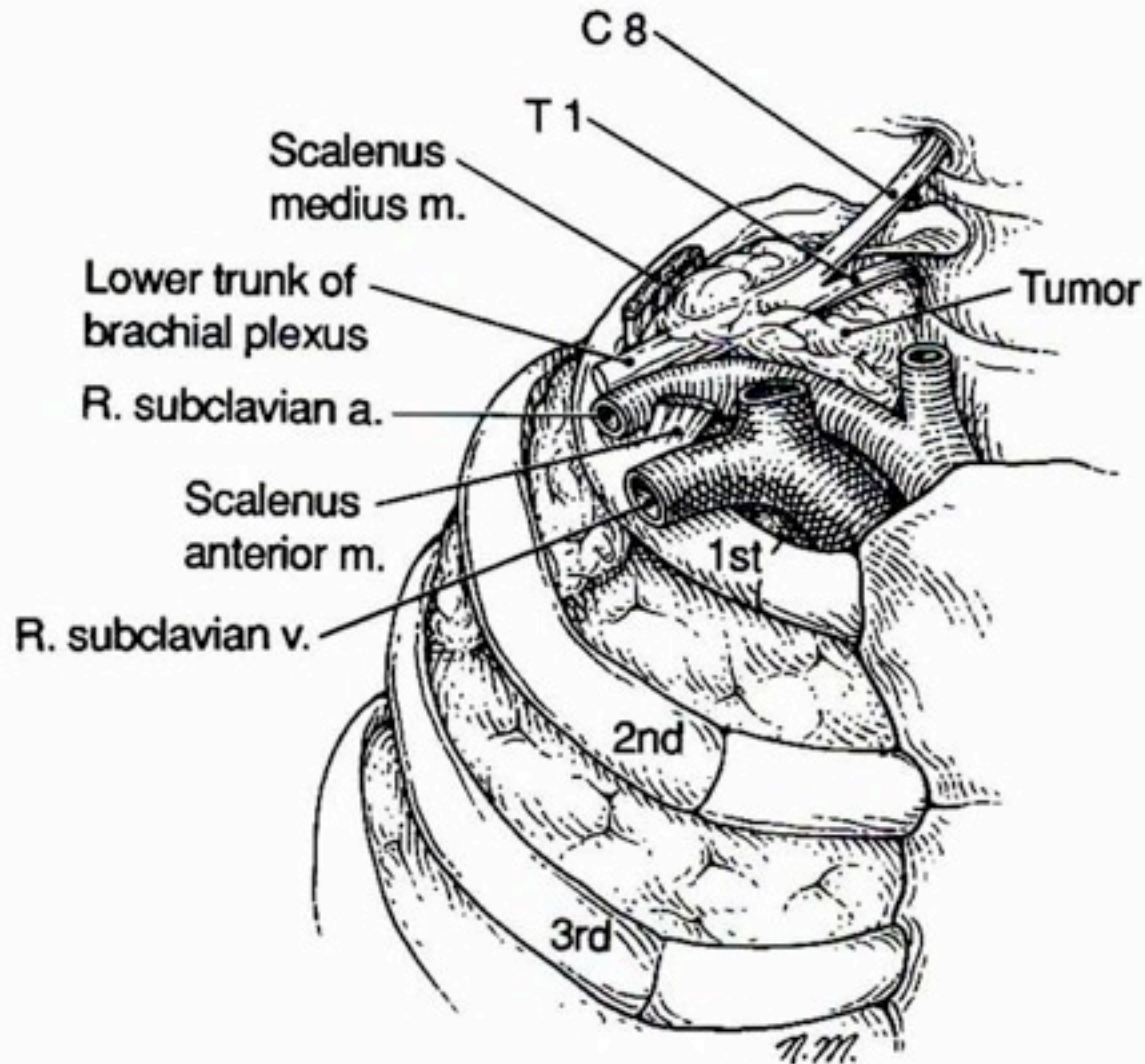


# SLEEVE LOBEKTOMİ -1



# SUPERIOR SULCUS TÜMÖRÜ (PANCOAST?)

# SUPERIOR SULCUS TUMÖRÜ (PANCOAST?)





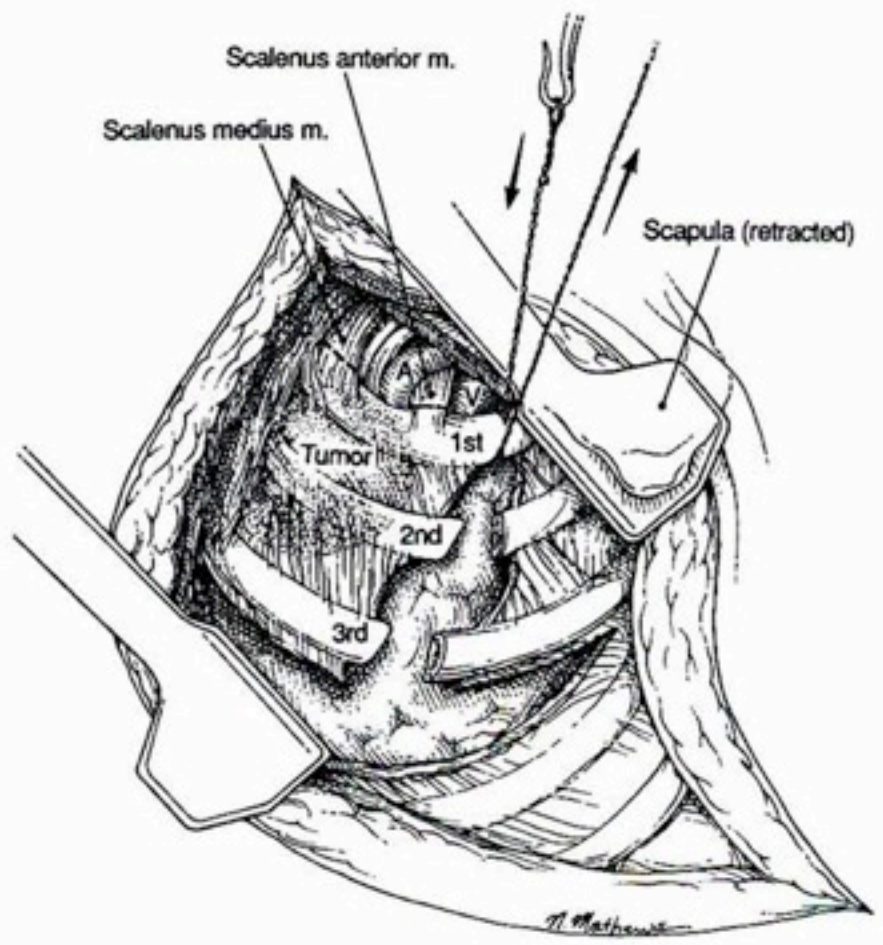
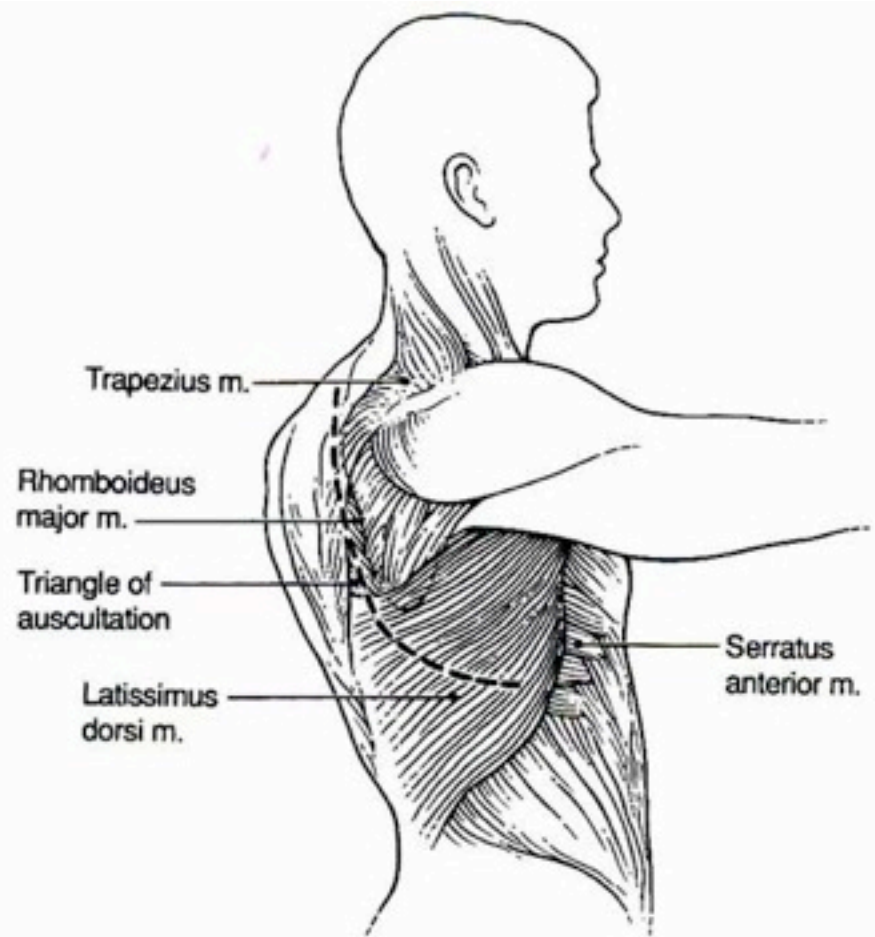


Fig. 35.2 The classic posterolateral therapeutic incision

Fig. 35.3 The classic posterolateral therapeutic incision



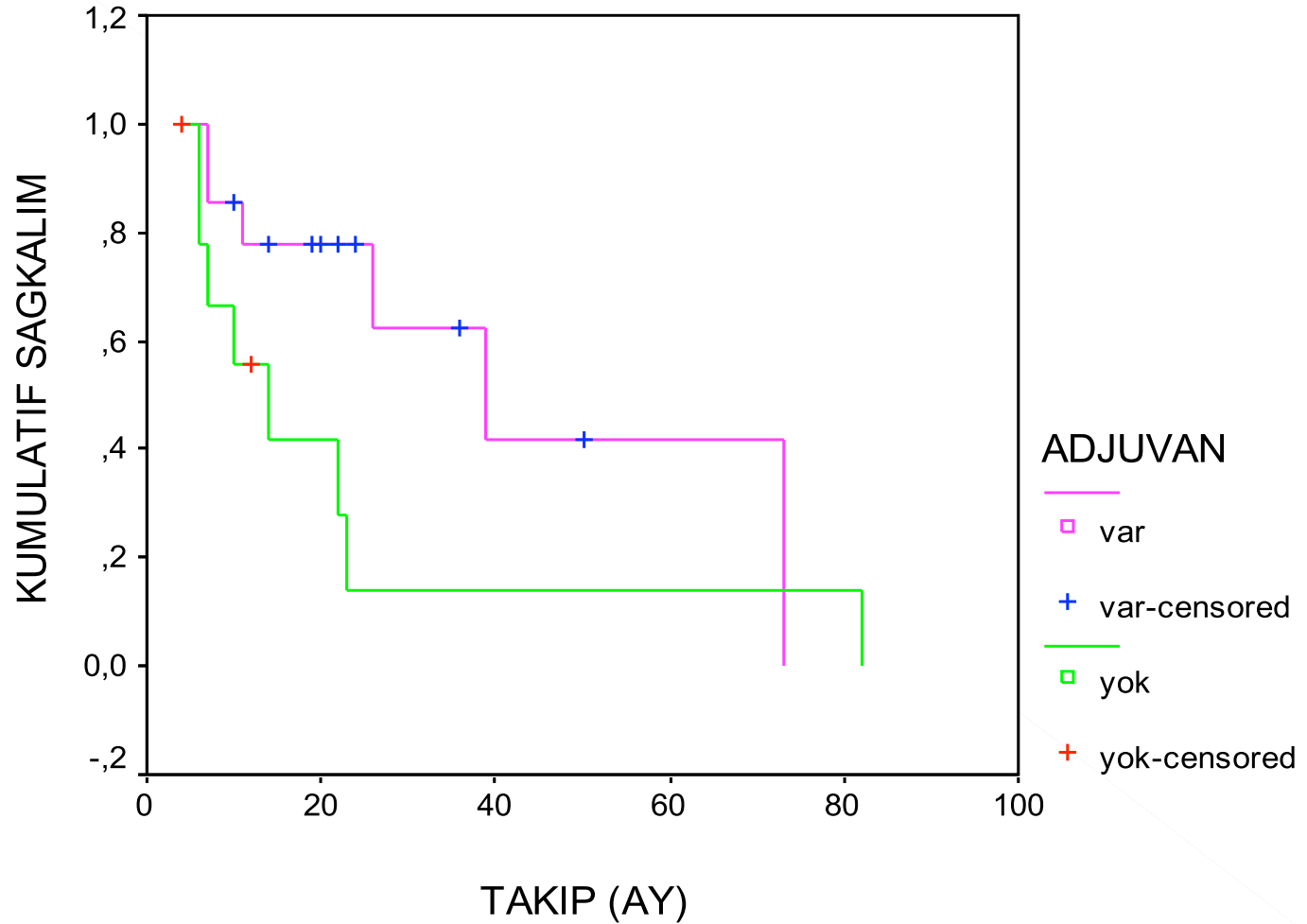
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# YEDİKULE DENEYİMİ: ADJUVAN TEDAVİNİN ETKİSİ

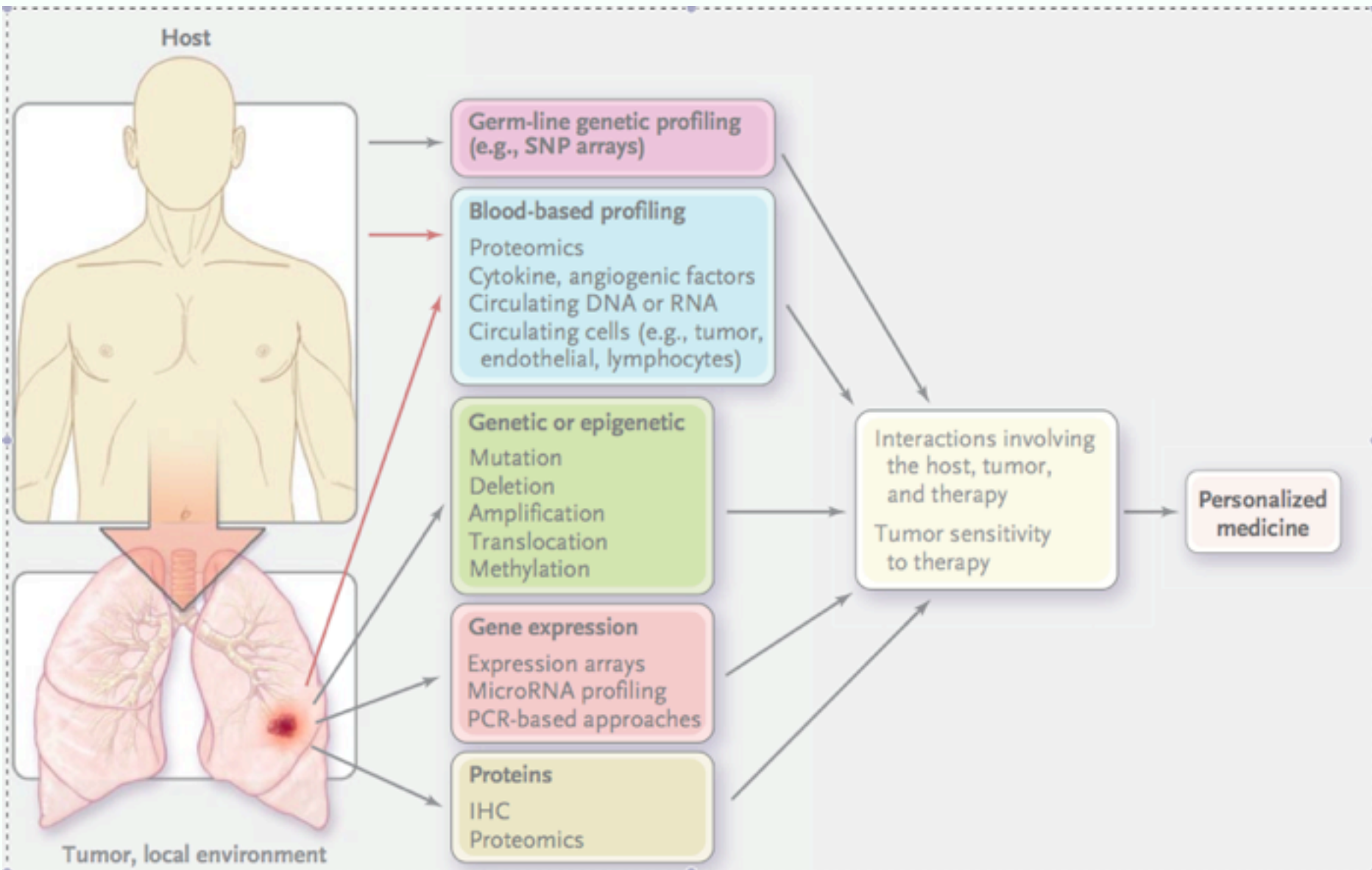


# Gelecek alıřmalar

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- ◆ ERCC1 ile ilgili İleri alıřmalar
- ◆ Moleküler olarak belirlenmiř cerrahi tedaviye ynelik randomize alıřmalar.
- ◆ Genomik ve Proteomik ile yapılmıř saėkalım alıřmaları
- ◆ Yeni moleküler PET-belirteleri ile yapılmıř alıřmalar.

# GELECEK TEDAVİLER



# Molecularly Tailored Adjuvant Chemotherapy for Resected Non-small Cell Lung Cancer

## *A Time for Excitement and Equipoise*

*Christopher G. Azzoli, MD,\* Bernard J. Park, MD,† William Pao, MD, PhD,\*  
Maureen Zakowski, MD,‡ and Mark G. Kris, MD\**

**TABLE 2.** Molecular Tests with Prognostic and Predictive Significance

	Prognosis	Prediction	Level of Evidence <sup>a</sup>
EGFR mutation (exon 19 deletion v. exon 21 missense)	Better	Higher chance of responding to EGFR tyrosine kinase inhibitors	II
EGFR amplification	Better	Higher chance of responding to EGFR tyrosine kinase inhibitors	II
EGFR IHC positive	Worse	Higher chance of responding to EGFR tyrosine kinase inhibitors	II
KRAS mutation	Worse	No benefit from adjuvant cisplatin + vinorelbine, lower chance of responding to EGFR tyrosine kinase inhibitors	II
ERCC1 IHC positive	Better	No benefit from adjuvant cisplatin-based chemotherapy, less responsive to cisplatin	II
RRM1 IHC positive	Better	Less responsive to gemcitabine	II
p27 IHC positive	Better	No benefit from adjuvant cisplatin-based chemotherapy	II
ERCC1 and p27 "double-positive" by IHC	Better	No benefit from adjuvant cisplatin-based chemotherapy	
ERCC1 and RRM1 "double-positive" by AQUA	Better	Less responsive to cisplatin and gemcitabine	
MRP2 IHC positive	Worse	?	II
FasL-negative by IHC	?	More benefit from cisplatin-based adjuvant chemotherapy	II
High bTubIII by IHC	Worse	More benefit from adjuvant cisplatin + vinorelbine	II
"High-Risk" gene expression profile (various platforms)	Worse	?	II

<sup>a</sup> Level I evidence has been validated by data from a prospective, randomized trial. Level II evidence is based on retrospective cohort studies.

EGFR, epidermal growth factor receptor; KRAS, Kirsten rat sarcoma viral oncogene homolog; ERCC1, excision repair cross-complementation group 1; RRM1, ribonucleotide reductase subunit 1; MRP2, multidrug resistance protein 2; FasL, ligand for tumor necrosis factor receptor superfamily member 6; bTubIII, class III beta-tubulin.