





Aort Diseksiyonu

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Acil Tıp Kliniği

Akut Aort Diseksiyonu

- Nispeten nadir
- Katastrofik düzeyde ölümcül
 - Doğru tanı konulsa bile hastane içi mortalitesi %27 (1)
 - ACC/AHA Kılavuzu (2)
 - %40 akut diseksiyon esnasında ölüm
 - %1 akut diseksiyon sırasında ölmezse her saat için ölüm oranı
 - %20 perioperatif ölüm oranı
 - Cerrahi sonrası %50-70 survi
- Acilde tanısı zor
- Tedavisi zor

(1) Ankel F. Aortic dissection. In: Rosen's EM. 7. baskı; 2010. p. 1088–92. Chapter 83.

(2) Hiratazka LF, Bakris GL, Beckman JA, et al. 2010 guidelines for the diagnosis and management of patients with thoracic aortic disease. Circulation 2010;121:e266–369.

Epidemiyoloji

- Uluslar arası Akut Aort Diseksiyonu Kayıt Sistemi (IRAD)
 - 2000 yılında başlatıldı
 - 464 vaka, Ortalama yaş 63, %65 Erkek
- İnsidans: 2,5-3 vaka/100.000 kişi ABD
- 16 vaka/100.000 kişi İsveç

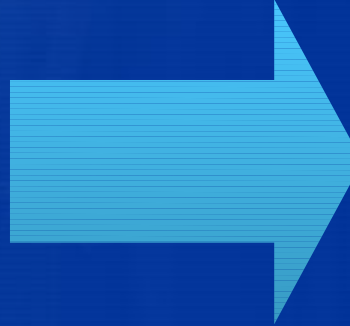
Mortalite	Tip A (Proksimal)	Tip B (Distal)
Cerrahi	%26	%10,7
Medikal	%58	%31
Toplam	%27,4	

Hagan PG, Neinaber CA, Isselbacher EM, et al. The International Registry of Acute AorticDissection (IRAD) – newinsights intoanolddisease. JAMA 2000;283:897–903.

Epidemiyoloji

- Tedavi verilmezse
- 2 hafta içindeki mortalite

%75



- Başarılı ilk müdahale ile 5-yıllık sürvisi

%75



Medikolegal

- Canada Medical Protection Agency
 - 32 vaka, 34 medikolegal dava
 - %56'sı ya düşürülmüş ya da hekim lehine sonuçlanmış

Hatalı Tanı	Oranı
Akut Koroner Sendrom	%19
Muskuloskeletal ağrı	%20
Pnömoni /Pulmoner Emboli	%20
Perikardit	%12
GİS ağrısı	%9
Diğer tanılar	%20

Klompas M. Does this patient have an acute thoracic aortic dissection?. JAMA. 2002;287(17):2262-2272.

Table 7. Final Diagnoses in Patients With Clinical Syndromes Suggestive of Thoracic Aortic Dissection But Without Thoracic Aortic Dissection on Further Study*

Diagnosis	No. (%) of Patients			
	Von Kodolitsch et al, ²⁹ 2000 (N = 122)	Enia et al, ⁴⁴ 1989 (N = 11)	Armstrong et al, ⁴⁵ 1998 (N = 41)†	Eagle et al, ³³ 1986 (N = 51)‡
Acute coronary syndrome	18 (15)	2 (18)	8 (20)	12 (24)
Chest wall syndrome	18 (15)	...	...	...
Mediastinal cyst or tumor	...	...	...	4 (8)
Neuroradicular syndrome	1 (0.8)	...	...	...
Pulmonary disease	1 (0.8)	...	...	...
Hypertensive crisis	11 (9)	...	...	...
Gastrointestinal disease (esophagitis, PUD, gastritis, pancreatitis)	12 (9.8)	...	...	2 (4)
Pneumothorax	2 (1.6)	...	...	...
Pulmonary embolism	6 (4.9)	1 (9)	...	1 (2)
Pleuritis	5 (4.0)	...	...	1 (2)
Pericarditis	7 (5.7)	4 (36)	3 (7)	3 (6)
Nondissecting aneurysm	...	1 (9)	13 (32)	4 (8)
Aortic plaque rupture and/or intramural hemorrhage	...	...	9 (22)	...
Valvular pathology	...	...	4 (10)	5 (10)
Arteriosclerotic emboli	...	...	...	1 (2)
No definitive diagnosis	4 (3.3)	3 (27)	14 (34)	14 (28)

*PUD indicates peptic ulcer disease. Ellipses indicate data not available.

†Some patients without thoracic aortic dissection were given multiple diagnoses.

‡Included 55 patients with suspected thoracic aortic dissections but negative aortograms; 4 patients were false negative cases and later demonstrated to have thoracic aortic dissection.

Medikolegal

Atlanan Muayene Bulguları

Şiddetli göğüs ağrısı

Viseral şikayetlerin eşlik etmesi
Bulantı, kusma, solukluk, soğuk terleme

Normal / Hafif anormal EKG

Kan basıncı / Nabız Uyumsuzluğu

Yeni kardiyak üfürüm

Akciğer grafisinde mediastinal genişleme

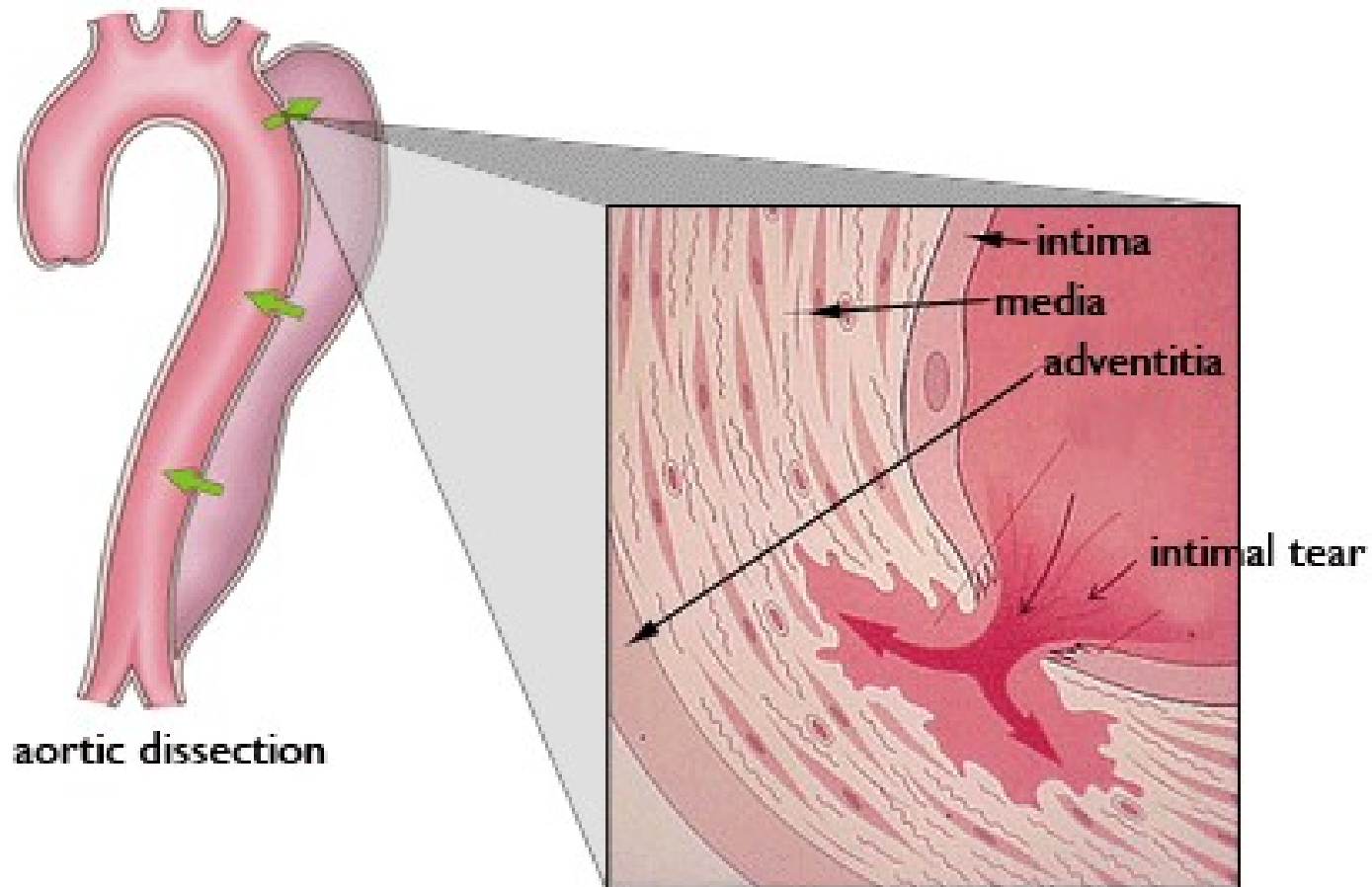
Patofizyoloji

- Normal kalp kasılmaları sonucu kalp perikard içinde salınma hareketi gerçekleştirir

37 000 000 vuru / yıl

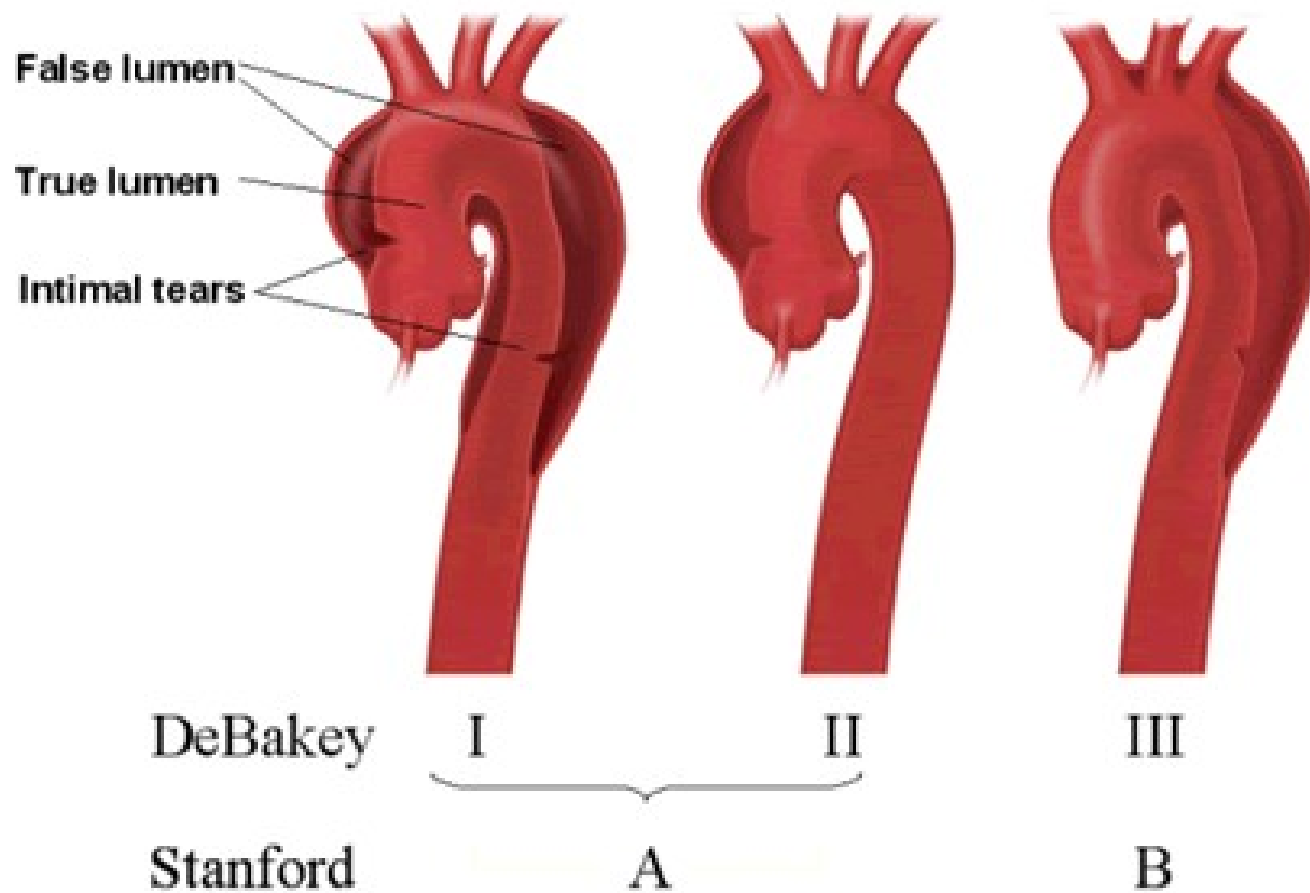
- Bu salınma esnasında asendan ve desendan aort hafif hafif fleksiyona uğrayıp geri yerine döner
- Bu ufak vuruşlar birikerek aort duvarlarında strese neden olur

Intima – media - adventisya

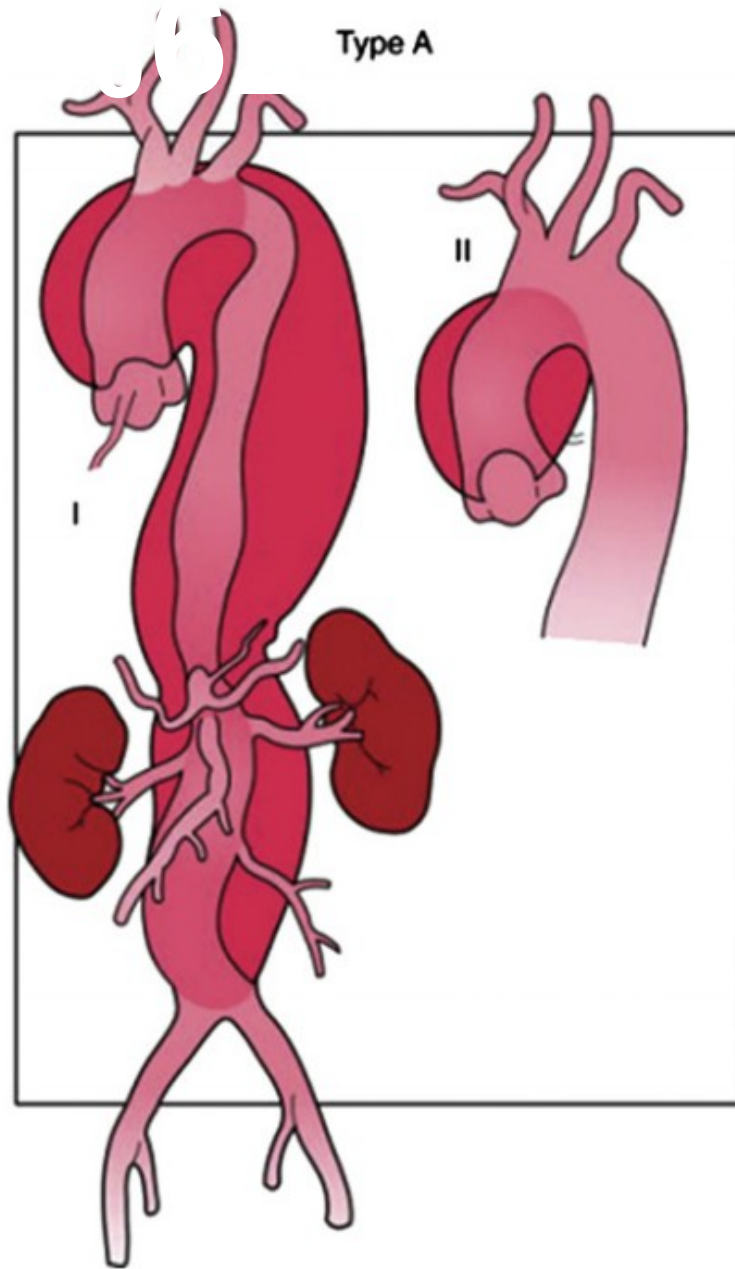


Sınıflandırma

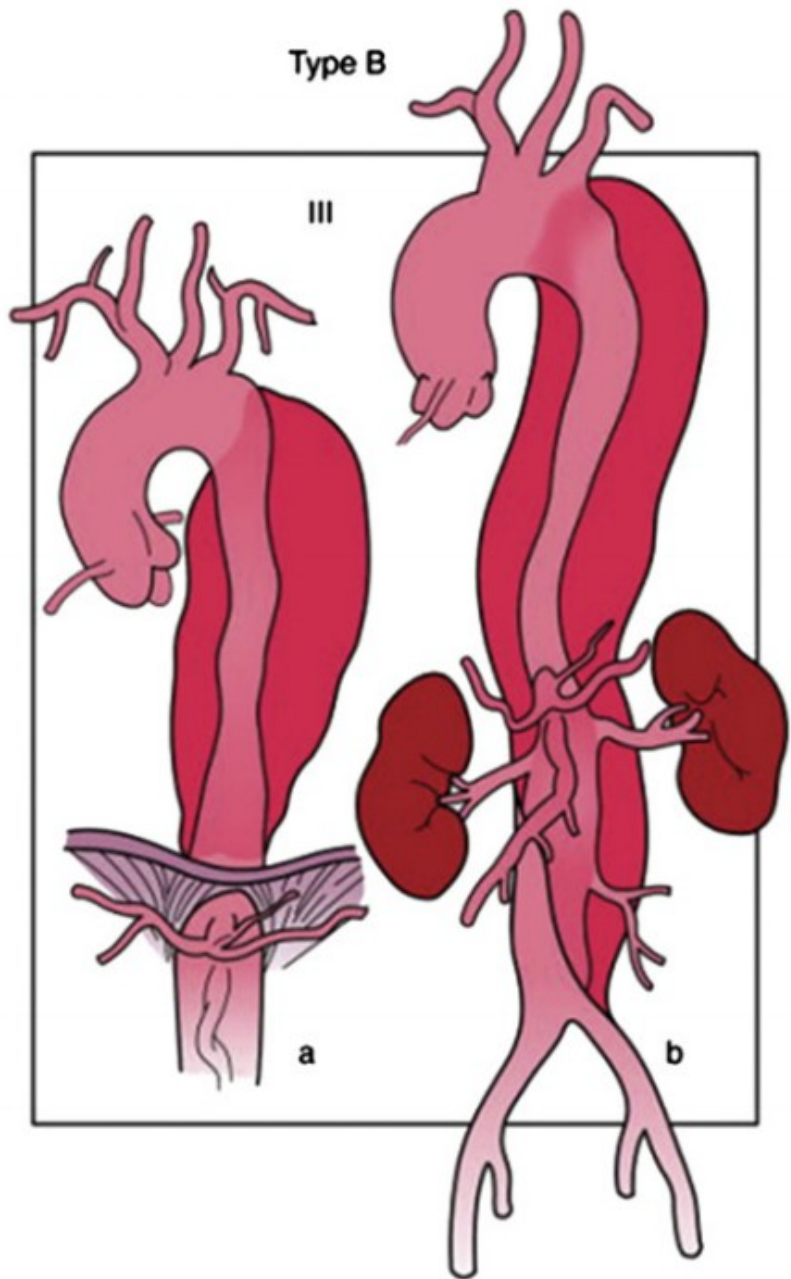
Anatomy and Classification of Aortic Dissection



Type A



Type B



Sınıflandırma

Tip	Ağrı başlangıcından itibaren geçen süre
Akut	< 2 hafta
Subakut	2-6 hafta
Kronik	>6 hafta

Klinik Değerlendirme

Risk Faktörleri

Risk Kategorisi	İlgili Hastalıklar
Aort duvar gerginliğini arttıranlar	Hipertansiyon (kontROLSÜZ) Feokromositom Kokain / Uyaran kullanımı Ağırlık kaldırma, Valsalva durumları Deselerasyon yaralanması, KÜNT travma Aort koarktasyonu
Aortun medyal katmanlarını etkileyen faktörler	Genetik: Ehler-Danlos, Marfan, Turner, Loeyz-Dietz, Noonan Enflamatuvar vaskülitler: Sfiliz, Tbc, salmonella, Takayasu, dev hücreli, lupus, Behçet
İatrojenik	Kardiyak/valf cerrahisi, İABP, aort kateterizasyonu
diğer	Erkek Yaş > 50 Gebelik Polikistik böbrek Kronik steroid kullanımı

**IT IS HARD
TO BE A WOMAN**

*You must think like a man,
Act like a lady,
Look like a young girl,
And work like a horse.*



Kadın Olmak ve Diseksiyon

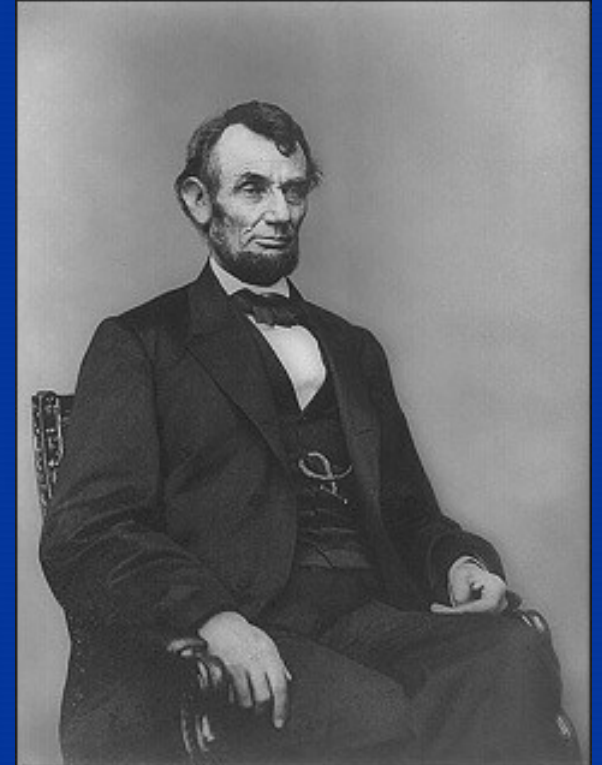
- Erkeklerle göre daha yaşlıdırlar >> 63
- Ağrı başlangıcından sonra 6 saat içinde gelmezler
- Ani başlangıçlı ağrıları olmaz
- Nabız defisitleri yoktur
- Bilinç değişikliği ya da KKY bulgularıyla başvurma ihtimalleri daha fazladır
- 24 saat içinde doğru tanı alma ihtimalleri daha düşük
- Hastane içi mortaliteleri daha yüksek (%30 vs %21)

WHAT'S THE BEST THING
ABOUT BEING A

Woman?

Genetik ve Diseksiyon

- 40 yaş altında diseksiyon geçiren hastaların yarısı Marfan
- 1. derece akrabalarında diseksiyon hikayesi olanların %13-19'u diseksiyon geçiriyor



Diğer Faktörler

- Kokain ve Ekstasi
- Akut B-Blokör bırakma
- Ağırılık kaldıranlarda
- Gebelik
 - 40 yaş altındaki kadınlardaki diseksiyonların yarısı



Klinik

Hikaye

- **Ani başlayan akut göğüs ağrısı (%90)**
 - Çok ızdırap veren
 - Başlangıç anından beri çok şiddetli
 - Keskin, yırtıcı, koparıcı karakterde
 - Yayılım
 - Ön – asendan aort
 - Boyun/çene – arkus
 - İnterskapular – desendan
 - Lomber/abdominal – subdiyafram
- Migrasyon nadir (%17)
- Zamanla azalabilir, şekil değiştirebilir

Hikaye

Tip A	Tip B
Göğüs ağrısı (%71)	Sırt ağrısı (%64)
Sırt ağrısı (%47)	Göğüs ağrısı (%63)
Karın ağrısı (%21)	Karın ağrısı (%43)

Hikaye

Atlanan Hastalarda Hikaye Özellikleri

Ani başlangıçlı göğüs ağrısı (%91)

Viseral semptomlar (%78)
solukluk, kusma, soğuk terleme

İntermitan ağrı (%75)

Sırt, boyun, kollar ya da çeneye yayılım (%69)

Plöretik, pozisyonel ağrı (%44)

Ateş (%22)

Senkop (%9)

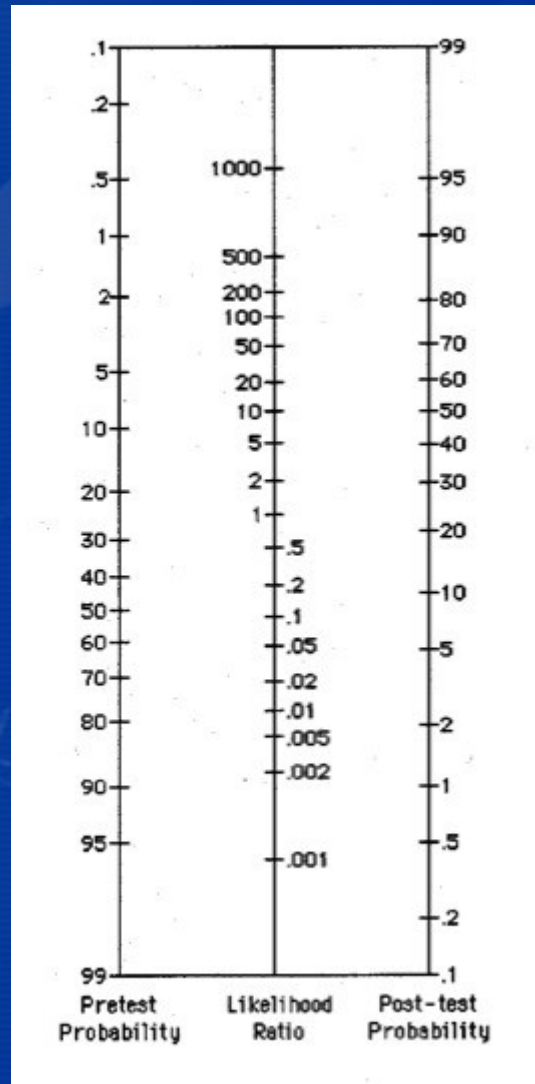
Yırtıcı tarzda ağrı (%3)

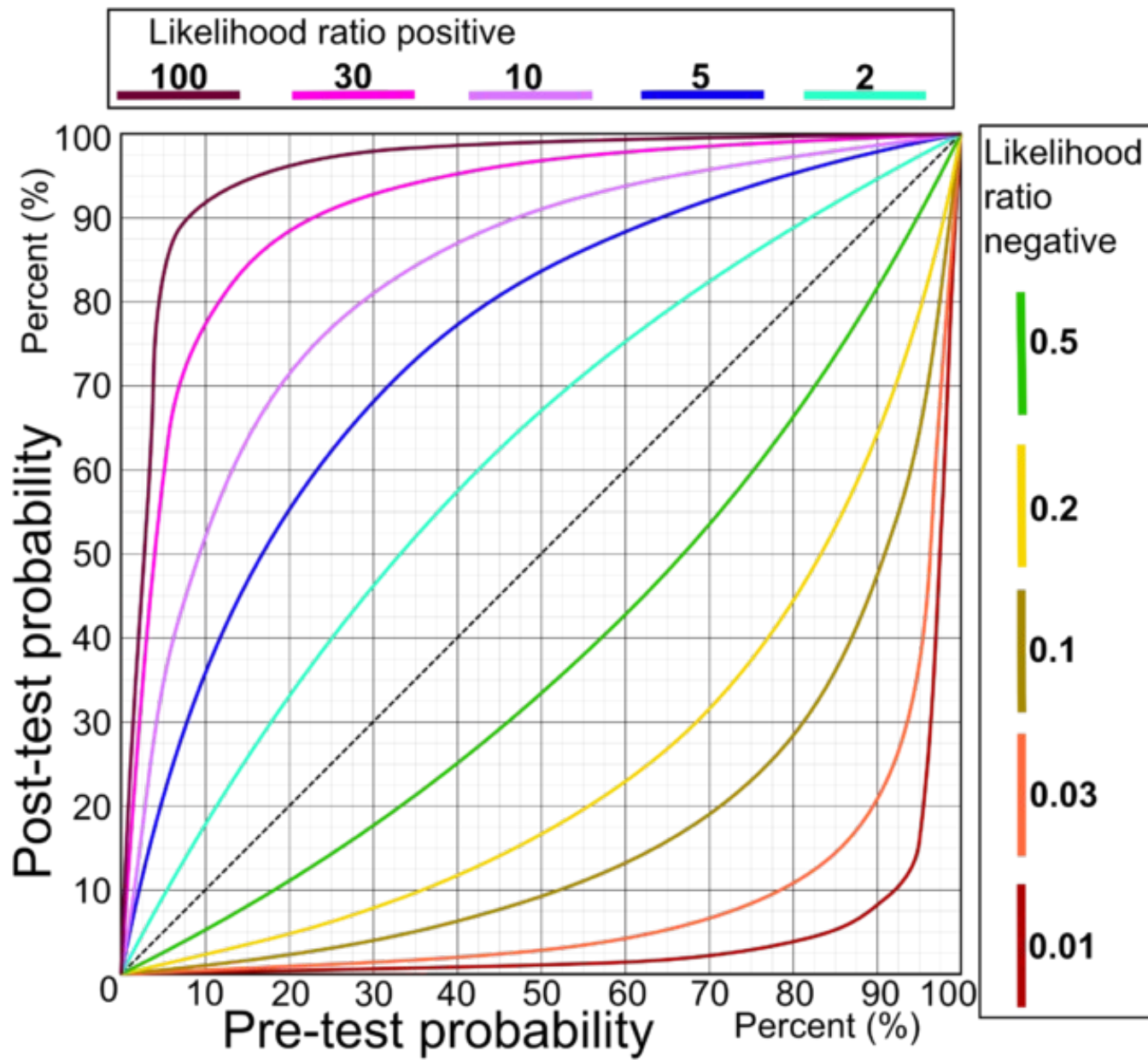
Ağrısız prezentasyon

- Sadece komplikasyonlarla başvuran hasta grubu
- Daha yaşlı
- Muhtemelen steroid kullanan
- Marfan sendromu olan
- Senkop
- İnme
- KKY ile başvuran

%12

Fagan Nomogramı





Akut Torasik Aort Diseksiyonu

Semptomlarının Değerliliği

Table 3

Summary of LR for symptoms/signs of TAD

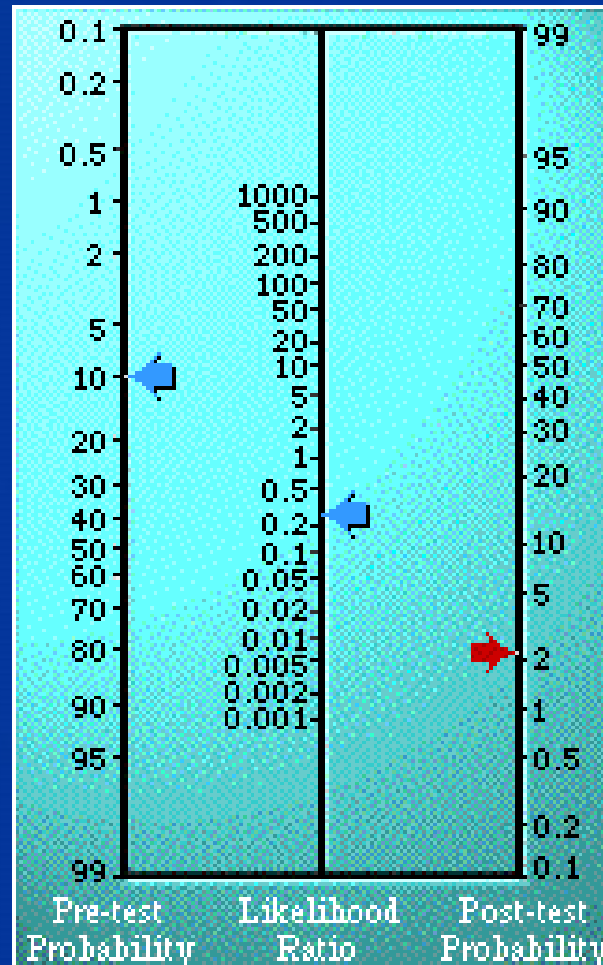
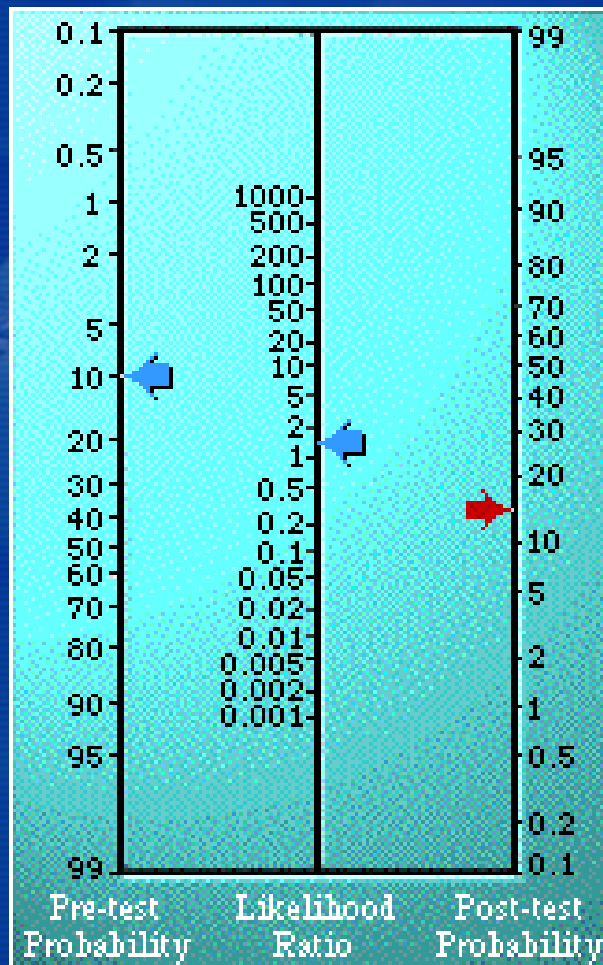
Symptom	+ LR (95% CI)	– LR (95% CI)
Sudden onset of pain	1.6 (1.0–2.4)	0.3 (0.2–0.5)
Ani başlangıçlı ağrı	1.2 (0.2–8.1)	0.99 (0.9–1.1)
Yırtıcı/Koparıcı karakterde ağrı	10.8 (5.2–22.0)	0.4 (0.3–0.5)
	1.1 (0.5–2.4)	0.97 (0.6–1.6)
Yer değiştiren ağrı	7.6 (3.6–16.0)	0.6 (0.5–0.7)
	1.6 (1.2–2.0)	0.5 (0.3–0.7)
Hipertansiyon hikayesi	6.6–33.0	0.71–0.87
Fokal nörolojik defisit	0.9–1.7	0.79–1.1
Diyastolik üfürüm	2.4–47.0	0.62–0.93
Nabız defisiti		

Does this patient have an acute thoracic aortic dissection? JAMA 2002;287:2262–72.

Klompas M. Does this patient have an acute thoracic aortic dissection? JAMA 2002;287:2262–72

Ani başlangıçlı ağrı

+ LR (95% CI)	– LR (95% CI)
1.6 (1.0–2.4)	0.3 (0.2–0.5)



Klompas M. Does this patient have an acute thoracic aortic dissection?. JAMA. 2002;287(17):2262-2272.

Table 2. Sensitivity of the Clinical History in the Diagnosis of Acute Thoracic Aortic Dissection*

Source, y	No. of Patients	Sensitivity, %												
		History of Hypertension	Marfan Syndrome	Any Pain	Chest Pain	Anterior Chest Pain	Posterior Chest Pain	Back Pain	Abdominal Pain	Sudden-Onset Pain	Severe Pain	Ripping or Tearing Pain	Migrating Pain	Syncope
Von Kodolitsch et al, ²⁹ 2000	128	77	7	100†	...	76	...	50‡	22	79	86	62	44	10
Hagan et al, ⁵ 2000	464	72	5	96	73	61	36	53	30	85	91	51	17	9
Armstrong et al, ⁴⁵ 1998	34	...	...	94	74	...	...	56	27	88	93	7	...	6
Slater and DeSanctis, ³⁷ 1976	124	65	5	94	91	43	38	76	4	93	94	...	71	5
Levinson et al, ²⁷ 1950	58	59	...	78	47	...	9	36	40	...	...	...	...	14
Lindsay and Hurst, ⁵⁰ 1967	62	...	...	90	...	61	14	13	11	...	...	...	...	...
Hume and Porter, ⁵¹ 1963	68	89	4	97	59	59	33	43	49	...	...	...	...	...
Nielsen, ⁴⁶ 1961	40	18	3	65	...	54	...	8	33	76	...	...	...	16
Erb and Tullis, ⁴⁷ 1960	30	53	7	70	40	...	...	...	17	...	...	...	...	...
Pinet et al, ⁵² 1984	191	53	7	96	63	...	30	...	...	...	89	...	6	...
Pate et al, ⁵³ 1976	126	...	...	88	63	...	38	22	...	88	...	...	...	10
Chan, ⁴³ 1991	18	56	...	78	...	...	...	...	...	78	...	...	39	...
Strong et al, ⁵⁵ 1974	59	75	3	...	...	32	...	25	27	...	...	...	...	...
Sullivan et al, ¹¹ 2000	44	70	0	98	66	...	...	...	34	...	...	...	...	2
Enia et al, ⁴⁴ 1989	35	80	...	...	...	...	...	...	...	...	...	...	...	...
Mészáros et al, ¹⁰ 2000	72	67	...	92	...	64	...	10	10	...	...	...	...	14
Pooled sensitivity (95% CI)	NA	64 (54-72)	5 (4-7)	90 (85-94)	67 (56-77)	57 (48-66)	32 (24-40)	32 (19-47)	23 (16-31)	84 (80-89)	90 (88-92)	39 (14-69)	31 (12-55)	9 (8-12)

*CI indicates confidence interval; NA, not applicable. Ellipses indicate data not available.

†Presence of pain inclusion criterion for study.

‡Posterior chest or lower back pain.

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Slater and DeSanctis, ³⁷ 1976	124	65	5	94	91	43	38	76	4	93	94	...	71	5
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Lindsay and Hurst, ⁵⁰ 1967	62	...	...	90	...	61	14	13	11	...	...	...	...	...
Hume and Porter, ⁵¹ 1963	68	89	4	97	59	59	33	43	49	...	...	...	...	...
Nielsen, ⁴⁸ 1961	40	18	3	65	...	54	...	8	33	76	...	...	...	16
Erb and Tullis, ⁴⁷ 1960	30	53	7	70	40	...	...	...	17	...	...	...	...	...
Pinet et al, ⁵² 1984	191	53	7	96	63	...	30	...	...	...	89	...	6	...
Pate et al, ⁵³ 1976	126	...	...	88	63	...	38	22	...	88	...	...	...	10
Chan, ⁴³ 1991	18	56	...	78	...	...	...	...	...	78	...	...	39	...
Strong et al, ⁵⁵ 1974	59	75	3	...	...	32	...	25	27	...	...	...	...	...
Sullivan et al, ¹¹ 2000	44	70	0	98	66	...	...	...	34	...	...	...	...	2
Enia et al, ⁴⁴ 1989	35	80	...	...	...	...	...	...	...	...	...	...	...	...
Mészáros et al, ¹⁰ 2000	72	67	...	92	...	64	...	10	10	...	...	...	...	14
Pooled sensitivity (95% CI)	NA	64 (54-72)	5 (4-7)	90 (85-94)	67 (56-77)	57 (48-66)	32 (24-40)	32 (19-47)	23 (16-31)	84 (80-89)	90 (88-92)	39 (14-69)	31 (12-55)	9 (8-12)

*CI indicates confidence interval; NA, not applicable. Ellipses indicate data not available.

†Presence of pain inclusion criterion for study.

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Table 3. Accuracy of Clinical Findings for Thoracic Aortic Dissection in Consecutive Patients Preselected for High Clinical Suspicion of Dissection Referred for Advanced Imaging*

Symptom or Sign	Source, y	Positive Likelihood Ratio (95% CI)	Negative Likelihood Ratio (95% CI)
History of hypertension	Chan, ⁴³ 1991†	1.5 (0.8-3.0)	0.7 (0.4-1.3)
	Enia et al, ⁴⁴ 1989‡	1.1 (0.7-1.6)	0.7 (0.4-2.4)
	Von Kodolitsch et al, ²⁹ 2000§	1.8 (1.4-2.3)	0.4 (0.3-0.6)
	Summary	1.6 (1.2-2.0)	0.5 (0.3-0.7)
Sudden chest pain	Chan, ⁴³ 1991†	1.0 (0.7-1.4)	0.98 (0.3-3.1)
	Armstrong et al, ⁴⁵ 1998	1.5 (1.1-1.9)	0.3 (0.1-0.8)
	Von Kodolitsch et al, ²⁹ 2000§	2.6 (2.0-3.5)	0.3 (0.2-0.4)
	Summary	1.6 (1.0-2.4)	0.3 (0.2-0.5)
"Tearing" or "ripping" pain	Armstrong et al, ⁴⁵ 1998	1.2 (0.2-8.1)	0.99 (0.9-1.1)
	Von Kodolitsch et al, ²⁹ 2000§	10.8 (5.2-22.0)	0.4 (0.3-0.5)
Migrating pain	Chan, ⁴³ 1991†	1.1 (0.5-2.4)	0.97 (0.6-1.6)
	Von Kodolitsch et al, ²⁹ 2000§	7.6 (3.6-16.0)	0.6 (0.5-0.7)
Pulse deficit	Armstrong et al, ⁴⁵ 1998	2.4 (0.5-12.0)	0.93 (0.8-1.1)
	Enia et al, ⁴⁴ 1989‡	2.7 (0.7-9.8)	0.63 (0.4-1.0)
	Von Kodolitsch et al, ²⁹ 2000§	47.0 (6.6-333.0)	0.62 (0.5-0.7)
	Summary	5.7 (1.4-23.0)	0.7 (0.6-0.9)
Focal neurological deficit	Armstrong et al, ⁴⁵ 1998	6.6 (1.6-28.0)	0.71 (0.6-0.9)
	Von Kodolitsch et al, ²⁹ 2000§	33.0 (2.0-549.0)	0.87 (0.8-0.9)
Diastolic murmur	Chan, ⁴³ 1991†	4.9 (0.6-40.0)	0.8 (0.6-1.1)
	Armstrong et al, ⁴⁵ 1998	1.2 (0.4-3.8)	0.97 (0.8-1.2)
	Enia et al, ⁴⁴ 1989‡	0.9 (0.5-1.7)	1.1 (0.6-1.7)
	Von Kodolitsch et al, ²⁹ 2000§	1.7 (1.1-2.5)	0.79 (0.6-0.9)
	Summary	1.4 (1.0-2.0)	0.9 (0.8-1.0)
Enlarged aorta or wide mediastinum	Chan, ⁴³ 1991†	1.6 (1.1-2.3)	0.13 (0.02-1.00)
	Armstrong et al, ⁴⁵ 1998	1.6 (1.1-2.2)	0.42 (0.2-0.9)
	Von Kodolitsch et al, ²⁹ 2000§	3.4 (2.4-4.8)	0.31 (0.2-0.4)
	Summary	2.0 (1.4-3.1)	0.3 (0.2-0.4)
Left ventricular hypertrophy on admission electrocardiogram	Chan, ⁴³ 1991†	0.2 (0.03-1.9)	1.2 (0.9-1.6)
	Von Kodolitsch et al, ²⁹ 2000§	3.2 (1.5-6.8)	0.84 (0.7-0.9)

*CI indicates confidence interval.

†A total of 18 (n = 40) patients with thoracic aortic dissection.

‡A total of 35 (n = 46) patients with thoracic aortic dissection.

§A total of 128 (n = 250) patients with thoracic aortic dissection.

||A total of 34 (n = 75) patients with thoracic aortic dissection.

von Koloditsch et al (2000)

- Prospektif göğüs ağrısı hastaları (n=250)
- 128 konfirme edilmiş torasik aort diseksiyonu
- Ortalama Yaş 53, %78 Erkek, %61 Tip A diseksiyon

	+ LR (%95 GA)	- LR (%95 GA)
Yırtıcı/Koparıcı karakterde ağrı	10,8 (5,2-22,0)	0,4 (0,3-0,5)
Yer değiştiren ağrı	7,6 (3,6-16,0)	0,6 (0,5-0,7)

Fizik Muayene

- Güvenilir değil
- Çoğunlukla muayene bulgusu dahi yok
- En önemlilerinden biri **TA farkı**
 - Kitap bilgisi olarak **20-30 mmHg TA farkı** TAD lehine
 - **>20 mmHg fark** TAD'nin anlamlı bir prediktörü (1)
 - **Normal insanların %20'sinde nabız farkı >20 mmHg (2)**
 - **%53'ünde 10 mmHg (3)**

(1) Von Koloditsch Y, Schwartz AG, Nienaber CA. Clinical prediction of acute aortic dissection. Arch Intern Med 2000;160:2977–82. (

(2) Rogers RL, McCormack R. Aortic disasters. Emerg Med Clin North Am 2004;22: 887–908. (

(3) Woo K, Schneider JI. High-risk chief complaints I: chest pain – the big three. Emerg Med Clin North Am 2009;27:685–712.

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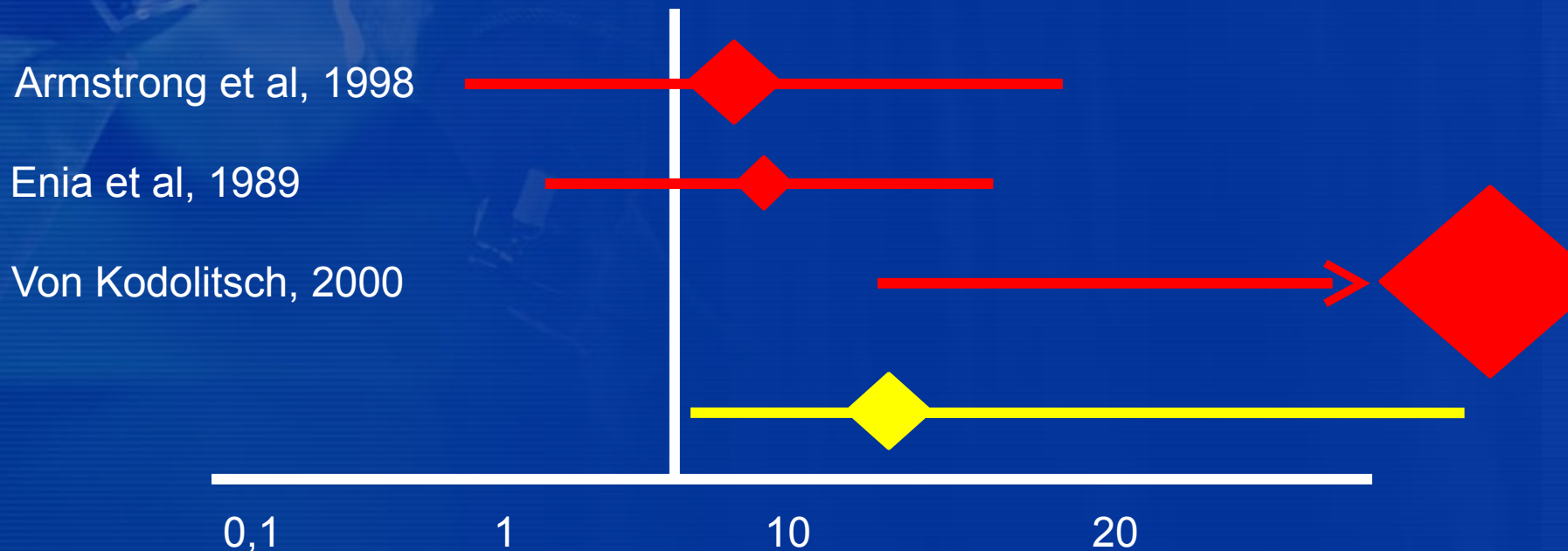
Table 4. Sensitivity of the Physical Examination in the Diagnosis of Acute Thoracic Aortic Dissection*

Source, y	No. of Patients	Sensitivity, %							
		Elevated BP	Diastolic Murmur	Pulse Deficit	Pericardial Rub	Congestive Heart Failure	Focal Neurological Deficit	Shock	New MI on ECG
Von Kodolitsch et al, ²⁹ 2000	128	41	40	38	...	...	13	12	2
Hagan et al, ⁵ 2000	464	49	32	15	...	7	5	16	3
Armstrong et al, ⁴⁵ 1998	34	...	15	12	...	...	32	26	11
Slater and DeSanctis, ³⁷ 1976	124	36	32	31	...	...	19	10	3
Levinson et al, ²⁷ 1950	58	66	28	19	5	...	16	22	32
Enia et al, ⁴⁴ 1989	35	...	49	49	...	...	...	...	...
Lindsay and Hurst, ⁵⁰ 1967	62	29	35	45	...	...	23	13	...
Hume and Porter, ⁵¹ 1963	68	68	4	34	...	...	...	10	...
Nielsen, ⁴⁶ 1961	40	...	...	...	...	...	...	30	10
Erb and Tullis, ⁴⁷ 1960	30	...	27	72	0	...	13	...	25
Pinet et al, ⁵² 1984	191	...	35	55	12	...	...	38	...
Pate et al, ⁵³ 1976	126	37	21	33	...	...	13	21	...
Miller et al, ⁵⁴ 1979	73	58	64	...	...	29	12	...	...
Viljanen, ¹² 1986	73	...	29	37	...	...	22	30	...
Chan, ⁴³ 1991	18	...	22	...	...	...	...	...	...
Strong et al, ⁵⁵ 1974	59	66	20	34	...	...	...	5	...
Sullivan et al, ¹¹ 2000	44	...	...	12	...	...	14	...	2
Itzchak et al, ⁴⁹ 1975	24	...	...	21	...	...	21	...	...
Mészáros et al, ¹⁰ 2000	66	44	11	20	2	...	41	36	9
Pooled sensitivity (95% CI)	NA	49 (41-57)	28 (21-36)	31 (24-39)	6 (3-13)	15 (4-33)	17 (12-23)	19 (15-26)	7 (4-14)

*BP indicates blood pressure; MI, myocardial infarction; ECG, electrocardiogram; NA, not applicable; and CI, confidence interval. Ellipses indicate data not available.

Nabız Defisiti

	TAD/n	+ LR (%95 GA)	- LR (%95 GA)
Armstrong et al, 1998	34/75	2,4 (0,5-12,0)	0,93 (0,8-1,1)
Enia et al, 1989	18/40	2,7 (0,7-9,8)	0,63 (0,4-1,0)
Von Kodolitsch, 2000	128/250	47,0 (6,6-333,0)	0,62 (0,5-0,7)
Duyarlılık %31 (24-39)		5,7 (1,4-23,0)	0,7 (0,6-0,9)



Yeni Aort Regürjitasyon Üfürümü

- %32 - %76 arasında görülür
- Duyarlılık %28 (%95 GA 21-36)
- + LR 1,4 (%95 GA 1,0-2,0)

Klompas M. Does this patient have an acute thoracic aortic dissection?. JAMA. 2002;287(17):2262-2272.

Table 6. Positive Likelihood Ratio of Aortic Dissection in Patients With Combinations of Findings*

No. of Findings	Positive Likelihood Ratio (95% Confidence Interval)
0	0.1 (0.0-0.2)
1	0.5 (0.3-0.8)
2	5.3 (3.0-9.4)
3	66.0 (4.1-1062.0)

Ancak 3 bulgu
birden 128 AD
vakasının
sadece
%27'sinde
mevcuttu

*Data from Von Kodolitsch et al.²⁹ Findings include aortic pain (severe, sudden-onset tearing pain), blood pressure or pulse differential between arms, and/or wide mediastinum on chest radiograph.

Uç Organ Prezantasyonlari



Kardiyovasküler Prezantasyonlar

- Aort rejürjitasyonu ve ilgili diğer bozukluklar
- Nabız defisiti
- Kan basıncı farkı
- Senkop
- AMI
- KKY
- Kardiyojenik şok

Klompas M. Does this patient have an acute thoracic aortic dissection?. JAMA. 2002;287(17):2262-2272.

Table 4. Sensitivity of the Physical Examination in the Diagnosis of Acute Thoracic Aortic Dissection*

Source, y	No. of Patients	Sensitivity, %							
		Elevated BP	Diastolic Murmur	Pulse Deficit	Pericardial Rub	Congestive Heart Failure	Focal Neurological Deficit	Shock	New MI on ECG
Von Kodolitsch et al, ²⁹ 2000	128	41	40	38	...	...	13	12	2
Hagan et al, ⁵ 2000	464	49	32	15	...	7	5	16	3
Armstrong et al, ⁴⁵ 1998	34	...	15	12	...	...	...	...	...
Slater and DeSanctis, ³⁷ 1976	124	36	32	31	...	...	...	...	...
Levinson et al, ²⁷ 1950	58	66	28	19	5	...	...	...	...
Enia et al, ⁴⁴ 1989	35	...	49	49	...	...	...	...	...
Lindsay and Hurst, ⁵⁰ 1967	62	29	35	45	...	...	...	...	...
Hume and Porter, ⁵¹ 1963	68	68	4	34	...	...	...	...	...
Nielsen, ⁴⁶ 1961	40	...	...	...	...	...	...	...	...
Erb and Tullis, ⁴⁷ 1960	30	...	27	72	0	...	...	...	...
Pinet et al, ⁵² 1984	191	...	35	55	12	...	...	38	...
Pate et al, ⁵³ 1976	126	37	21	33	...	...	13	21	...
Miller et al, ⁵⁴ 1979	73	58	64	...	...	29	12	...	...
Viljanen, ¹² 1986	73	...	29	37	...	...	22	30	...
Chan, ⁴³ 1991	18	...	22	...	...	...	...	...	...
Strong et al, ⁵⁵ 1974	59	66	20	34	...	...	...	5	...
Sullivan et al, ¹¹ 2000	44	...	...	12	...	...	14	...	2
Itzchak et al, ⁴⁹ 1975	24	...	...	21	...	...	21	...	...
Mészáros et al, ¹⁰ 2000	66	44	11	20	2	...	41	36	9
Pooled sensitivity (95% CI)	NA	49 (41-57)	28 (21-36)	31 (24-39)	6 (3-13)	15 (4-33)	17 (12-23)	19 (15-26)	7 (4-14)

*BP indicates blood pressure; MI, myocardial infarction; ECG, electrocardiogram; NA, not applicable; and CI, confidence interval. Ellipses indicate data not available.

**Trombolitikler
KONTRAENDİKE!!!**
Vakaların %0.1-0.2'si
En sık RCA
Posteroinferior MI

Kardiyovasküler Prezantasyonlar

- Senkop
 - %13 vakada
 - Vasküler çıkım obstrüksiyonu
 - Nörolojik vazovagal ağrı yanıtı
 - Kanamaya bağlı akut hipovolemi
 - Ağrısız, genç bir AAD hastasında sıcak çarpması zannedildiği bile olmuş (1)

Vuckovic SA. An usual presentation of ascending aortic arch dissection. J Emerg Med 2000;19:149–52.



- Fokal nörolojik defisit

- | Source | Sensitivity % | | | | | | | | | | Max. ΔT (°C) |
|----------------------------|---------------|-----------|-----------|---------|--------|-----------|---------|----------|--------|-------|----------------------|
| | North Pole | East Pole | Greenland | North | Pole | Composite | | North | East | North | |
| | | | | | | Pole | North | | | | |
| Wendlandt et al. (2000) | 13 | 4 | 4 | 38 | ... | ... | ... | 13 | 12 | 1 | |
| Agnew et al. (2000) | 49 | 49 | 32 | 16 | ... | ... | 7 | 6 | 16 | 1 | |
| Armstrong et al. (1998) | 24 | ... | 16 | 12 | ... | ... | 32 | 35 | 10 | ... | |
| Steele and Liberman (1997) | 19 | 38 | 32 | 31 | ... | ... | ... | 49 | 10 | 1 | |
| Larwood et al. (1993) | 58 | 68 | 28 | 18 | ... | ... | ... | 16 | 22 | 32 | |
| Field et al. (1992) | 35 | ... | 49 | 48 | ... | ... | ... | ... | ... | ... | |
| Armstrong et al. (1991) | 52 | 23 | 35 | 45 | ... | ... | ... | 23 | 13 | ... | |
| Armstrong et al. (1990) | 58 | 58 | 4 | 34 | ... | ... | ... | ... | 10 | ... | |
| Menzies (1987) | 49 | ... | ... | ... | ... | ... | ... | ... | 38 | 16 | |
| Field et al. (1985) | 38 | ... | 27 | 72 | 1 | ... | ... | 13 | ... | 25 | |
| Field et al. (1984) | 19 | ... | 35 | 55 | 12 | ... | ... | ... | 38 | ... | |
| Field et al. (1983) | 125 | 57 | 21 | 33 | ... | ... | ... | 13 | 21 | ... | |
| Menzies (1979) | 73 | 58 | 64 | ... | ... | ... | 25 | 12 | ... | ... | |
| Agnew (1988) | 73 | ... | 29 | 17 | ... | ... | ... | 22 | 38 | ... | |
| Dyer (1984) | 18 | ... | 22 | ... | ... | ... | ... | ... | ... | ... | |
| Strong et al. (1974) | 58 | 68 | 20 | 34 | ... | ... | ... | ... | 6 | ... | |
| Schmidt et al. (1990) | 44 | ... | ... | 12 | ... | ... | ... | 14 | ... | 1 | |
| Armstrong (1985) | 24 | ... | ... | 21 | ... | ... | ... | 21 | ... | ... | |
| Macdonald (1980) | 66 | 44 | 11 | 33 | 1 | ... | ... | 41 | 36 | 6 | |
| Field (1980) (4th) | 18 | 64-87 | 20-28 | 2-24-28 | 1-8-23 | 6-4-20 | 7-19-23 | 10-15-28 | 7-8-24 | ... | |
- SP: physical response; M: mechanical; C: electromagnetic; W: magnetic; and C: combined. Response values are in degrees Celsius.

Nörolojik Prezantasyonlar

- Strok

- Proksimal AD'nin en sık SSS bulgusu
 - %5-%15 görülür
- Göğüs ağrısı + yeni fokal defisit = AD
- Trombolitikler kontraendike!!!
- Ağrısız AD'de görülmüş bazı olgular:
 - Baziler arter oklüzyonuna bağlı ani koma
 - Geçici locked-in sendromu
 - Akut vertigo

Nörolojik Prezantasyonlar

- Spinal kord hasarı

- Tutulan arterler

- İnterkostal spinal arterler
 - Adamkiewicz arteri
 - Torasik radiküler arter

- Klinik

- Parapleji
 - Quadripleji
 - Transvers miyelit
 - Anterior kord sendromu

- **Göğüs bulguları olmaksızın ani başlayan, bacaklarda ağrısız nörolojik defisit durumunda AD şüphelenilmelidir**



Nörolojik Prezantasyonlar

Geçici

%50

Göğüs ağrısı yok

%33

GIS Komplikasyonları

- En sık GIS komplikasyonu Mezenter İskemi
- Tip B Diseksiyonda en sık ölüm sebebi

The image shows two individuals in a clinical setting, likely a surgical team. They are wearing white surgical masks and caps. The person on the left is holding a surgical instrument, possibly a scalpel or forceps. The person on the right is also holding a surgical instrument. The background is a solid blue color. The text 'Tanısal Yaklaşım' is overlaid in the center in a bold, yellow font.

Tanısal Yaklaşım

EKG

- Çoğunlukla normal ya da non-spesifik **%31**
- LV hipertrofisi (HT'a bağlı) **%26**

Çalışma	+LR (%95GA)	-LR (%95GA)
Chan, 1991	0,2 (0,03-1,9)	1,2 (0,9-1,6)
Von Kodolitsch, 2000	3,2 (1,5-6,8)	0,84 (0,7-0,9)

- EKG'nin faydası alternatif tanıların ekarte edilmesi
- AD hastalarının %7'sinde EKG'de iskemi var
- AHA 2010 kılavuzu AD için yüksek risk olmayan ST elevasyonlu hastalarda bu sebeple trombolitik öneriyor

D-Dimer

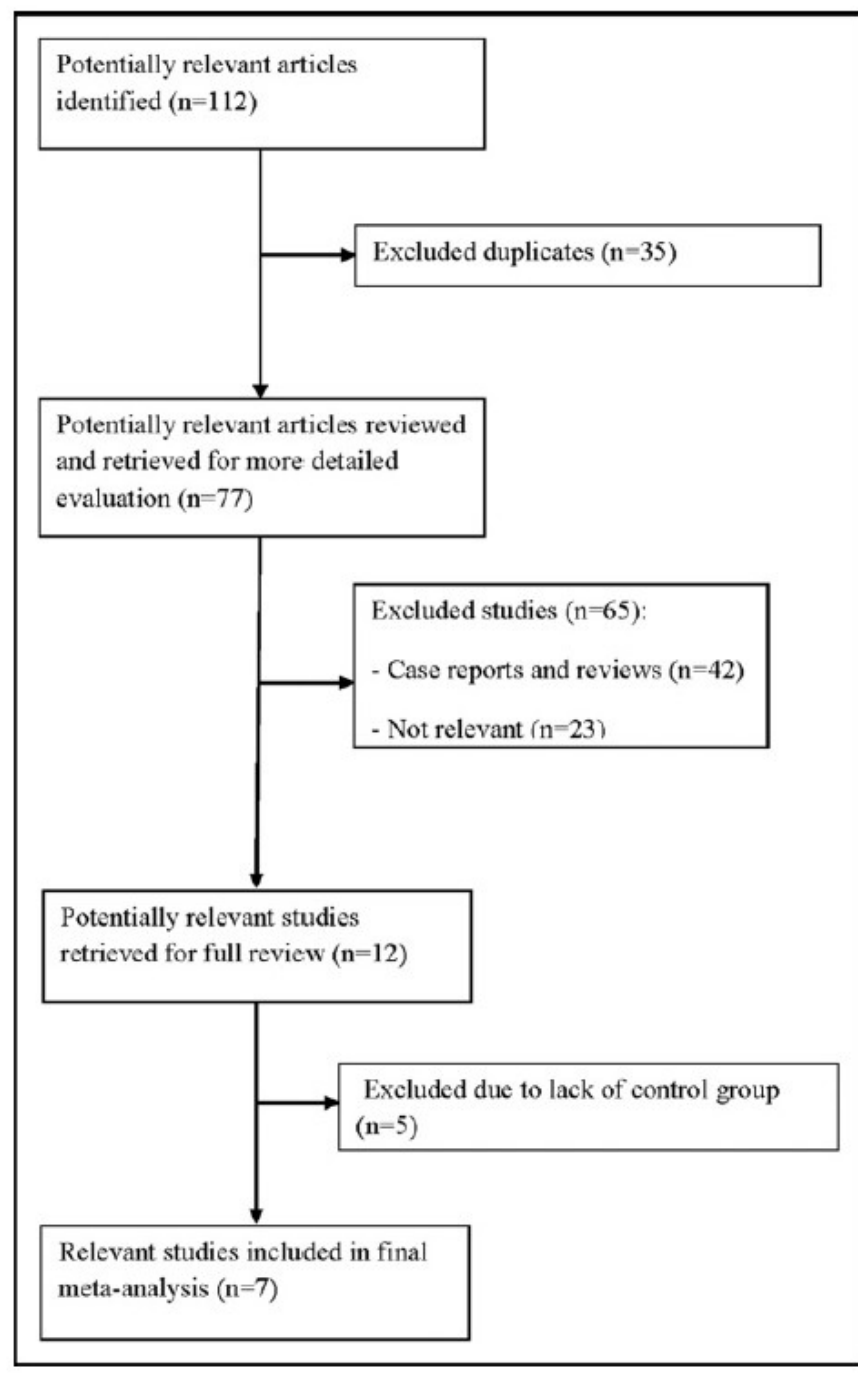
- TAD'da sensitivitesi %94-99 arası bildirilmiş
- Ancak bu analizlerde ciddi bias mevcut olup, prospektif geniş veri olmadığından AHA 2010 kılavuzu tarama amaçlı D-Dimer kullanımını önermemekte
 - Negatif D-Dimer'in post-test olasılığını düzgün hesaplayamıyoruz
- Tromboze lümen vakalarında D-Dimer negatif çıkabiliyor

Meta-Analysis of Usefulness of D-Dimer to Diagnose Acute Aortic Dissection

Avi Shimony, MD^{a,b,*}, Kristian B. Fillion, PhD^c, Salvatore Mottillo, BSc^{a,d}, Tara Dourian^a, and
Mark J. Eisenberg, MD, MPH^{a,b,e}

further aortic imaging. © 2011 Elsevier Inc. All rights reserved. (Am J Cardiol 2011;107:
1227–1234)





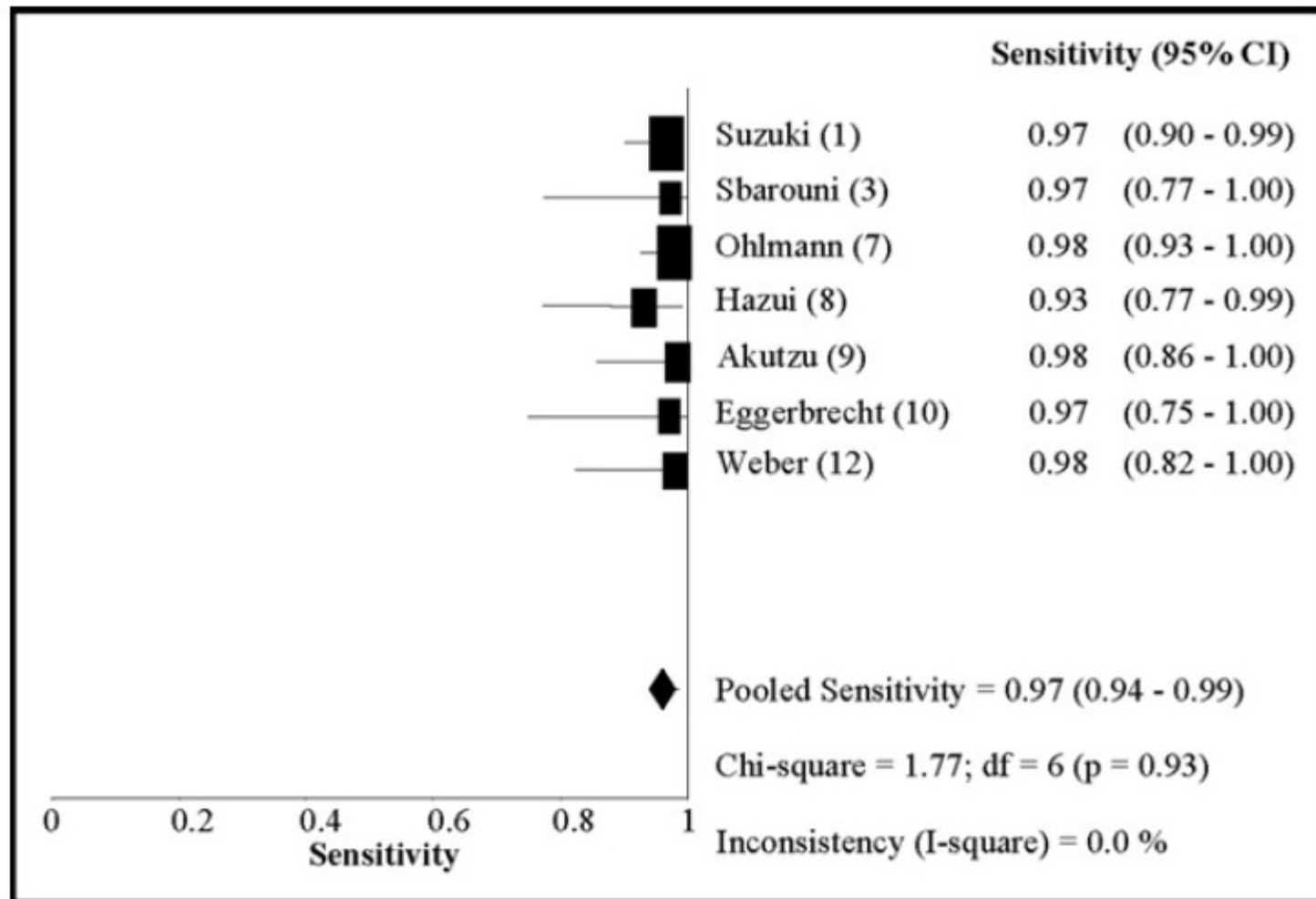


Figure 2. Individual study and pooled estimates of sensitivity and their 95% confidence intervals for D-dimer as a screening tool for acute aortic dissection. Data were pooled using the random-effects models of DerSimonian and Laird.¹⁶ A threshold of 500 ng/ml was used to define a positive plasma D-dimer finding.

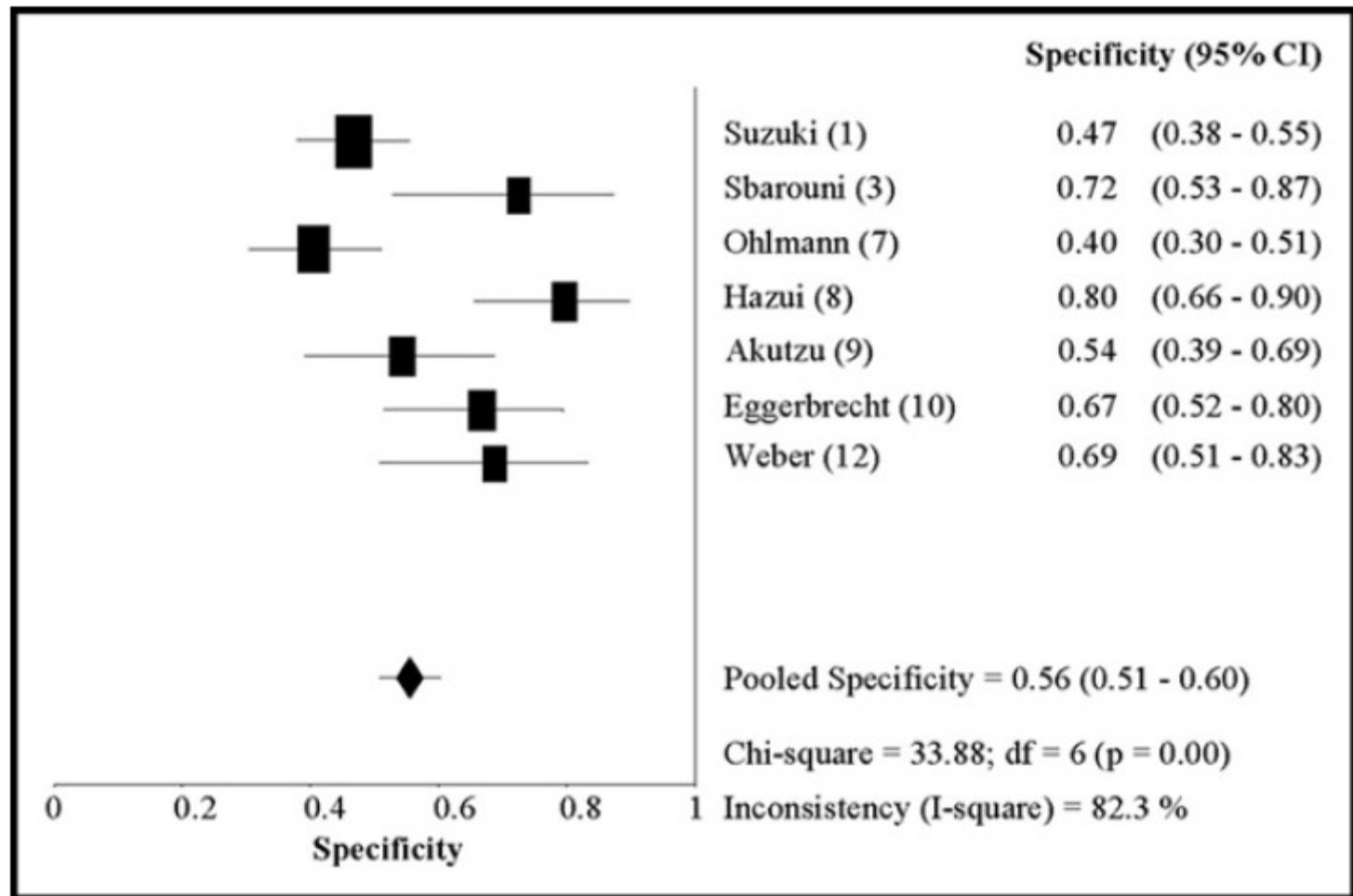


Figure 3. Individual study and pooled estimates of specificity and their 95% confidence intervals for D-dimer as a screening tool for acute aortic dissection. Data were pooled using the random-effects models of DerSimonian and Laird.¹⁶ A threshold of 500 ng/ml was used to define a positive plasma D-dimer finding.

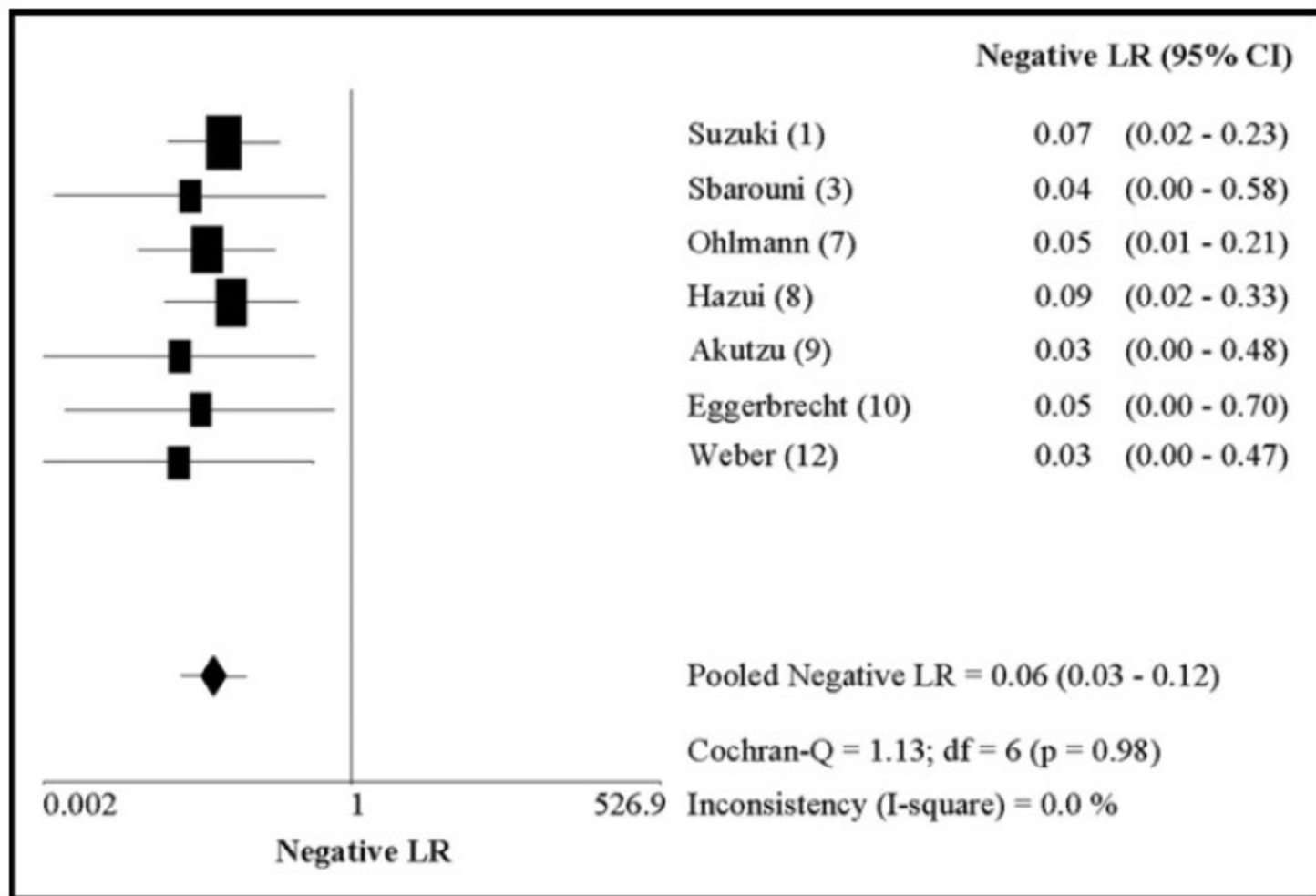


Figure 4. Individual study and pooled estimates of negative likelihood ratios and their 95% confidence intervals for D-dimer as a screening tool for acute aortic dissection. Data were pooled using the random-effects models of DerSimonian and Laird.¹⁶ A threshold of 500 ng/ml was used to define a positive plasma D-dimer finding.

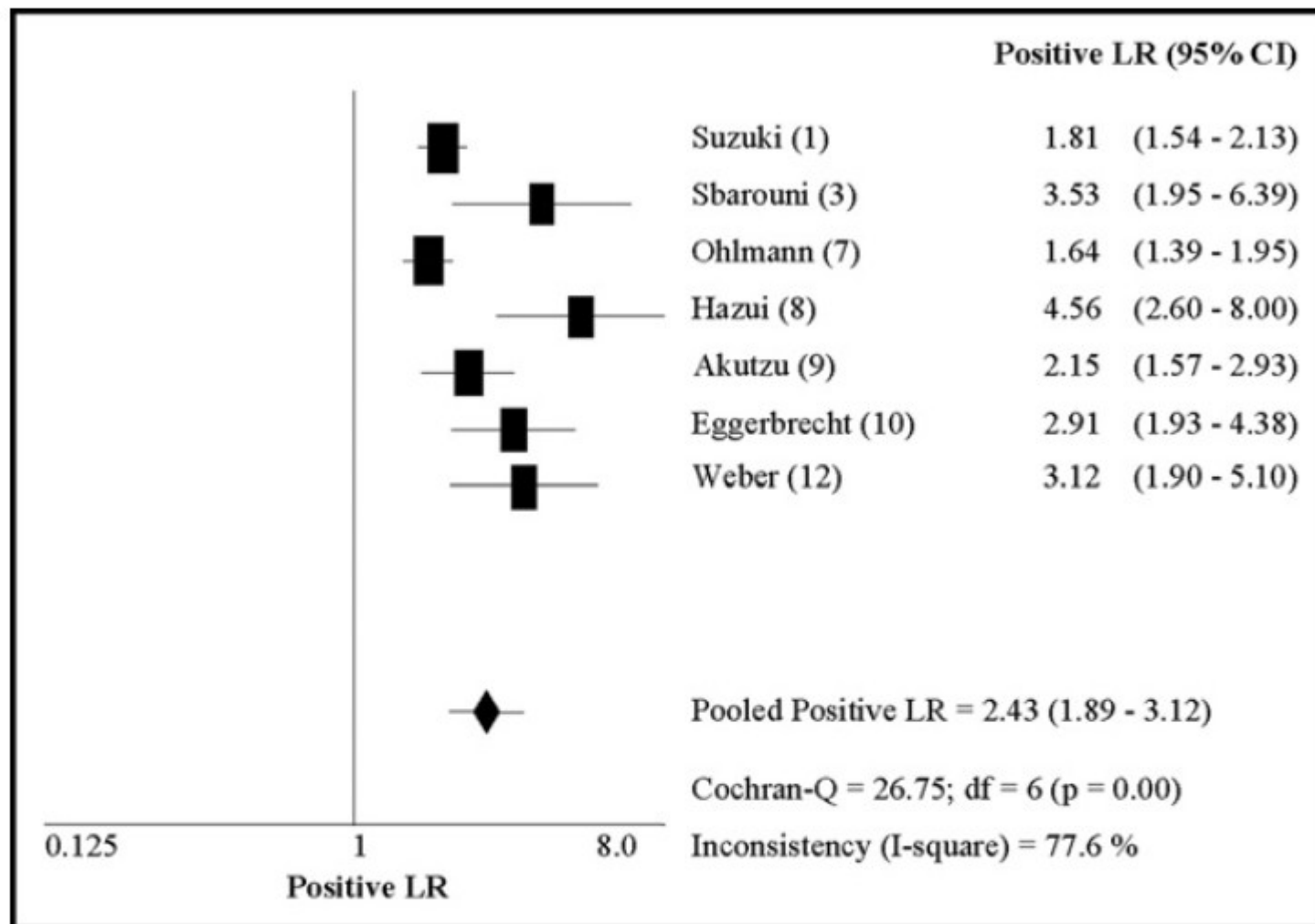


Figure 5. Individual study and pooled estimates of positive likelihood ratios and their 95% confidence intervals for D-dimer as a screening tool for acute aortic dissection. Data were pooled using the random-effects models of DerSimonian and Laird.¹⁶ A threshold of 500 ng/ml was used to define a positive plasma D-dimer finding.

D-Dimer

- TAD'da sensitivitesi %94-99 arası bildirilmiş
- Ancak bu analizlerde ciddi bias mevcut olup, prospektif geniş veri olmadığından AHA 2010 kılavuzu tarama amaçlı D-Dimer kullanımını önermemekte
 - Negatif D-Dimer'in post-test olasılığını düzgün hesaplayamıyoruz
 - Tromboze lümen vakalarında D-Dimer negatif çıkabiliyor
- 500 ng/ml altını eşik değer olarak alırsak, negatif D-Dimer AD tanısını ekarte ettirmede yardımcı olabilir
- Ama hala prospektif verisi olmadığından kanıt değeri yüksek değil

Araştırılan markerler

- Serum düz kas miyozin ağır zinciri
- Kalponin
- CRP
 - Tanı ve taramada değil, prognoz ve advers olay belirlemede

Akciğer Grafisi

- %90'ında akciğer grafisinde bir anormallik var
- Normal akciğer grafisi ekartasyona yardımcı olabilir
 - Ama normalin değerlendirmesinde tutarlılığımız kötü
 - 2 çalışma; Acil Tıp Dr vs Radyolog
 - **AD için interobserver tutarlılık $\kappa=0,25$**
 - **Geniş mediasten, aort kontur düzensizliği için interobserver tutarlılık $\kappa=0,23-0,33$**
- **Anormal aort konturu ve mediastinal genişleme yoksa AD olasılığı ciddi biçimde azalmakta (negatif LR 0.3; 95%GA 0.2–0.4) – ama akciğer grafisi okuma için validifiye standartlar olmalı ve ona göre okunmalı**

Klompas M. Does this patient have an acute thoracic aortic dissection?. JAMA. 2002;287(17):2262-2272.

Table 5. Sensitivity of the Plain Chest Radiograph in the Diagnosis of Acute Thoracic Aortic Dissection*

Source, y	No. of Patients	Sensitivity, %				
		Abnormal Aortic Contour	Pleural Effusion	Displaced Intimal Calcification	Wide Mediastinum	Abnormal Chest Radiograph Findings
Von Kodolitsch et al, ²⁹ 2000	128	76†	13	...	...	...
Hagan et al, ⁵ 2000	427	50	19	14	62	88
Armstrong et al, ⁴⁵ 1998	34	...	...	...	86	100
Slater and DeSanctis, ³⁷ 1976	116	96	9	9	...	96
Luker et al, ⁴⁸ 1994	75	76	...	8	...	85
Chan, ⁴³ 1991	18	...	...	...	94	...
Pinet et al, ⁵² 1984	191	...	...	...	56	...
Pate et al, ⁵³ 1976	87	...	10	...	70	90
Earnest et al, ³⁹ 1979	74	66	27	7	11	93
Viljanen, ¹² 1986	73	...	...	...	75	...
Strong et al, ⁵⁵ 1974	59	54	...	2	34	95
Sullivan et al, ¹¹ 2000	31	42	...	...	...	84
Itzchak et al, ⁴⁹ 1975	24	88	17	4	83	...
Pooled sensitivity (95% CI)	NA	71 (56-84)	16 (12-21)	9 (6-13)	64 (44-80)	90 (87-92)

*CI indicates confidence interval; NA, not applicable. Ellipses indicate data not available.

†Mediastinal and/or aortic widening.

İleri Görüntüleme

- TTE – duyarlılığı çok düşük %59, tüm aortu gösteremez
- TEE – hemodinamik olarak anstabil hasta eğer radyoloji departmanına gidemeyecekse, duyarlılığı %95-98
- BT – duyarlılığı %98-100
 - Pretest olasılığı düşük hastalarda ekartasyon için en uygun test

Diagnostic Accuracy of Transesophageal Echocardiography, Helical Computed Tomography, and Magnetic Resonance Imaging for Suspected Thoracic Aortic Dissection

Systematic Review and Meta-analysis

Arch Intern Med. 2006;166:1350-1356

Toshiya Shiga, MD, PhD; Zen'ichiro Wajima, MD, PhD; Christian C. Apfel, MD, PhD;
Tetsuo Inoue, MD, PhD; Yoko Ohe, MD, PhD

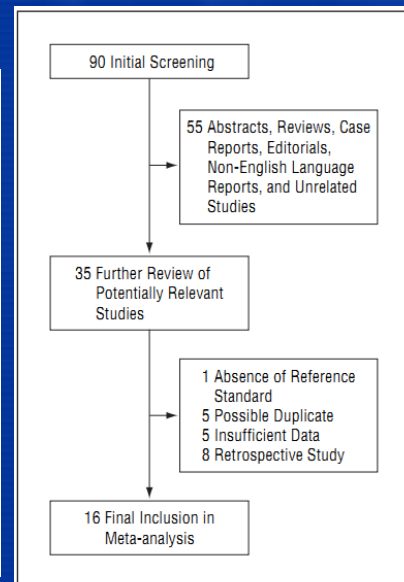


Figure 1. Meta-analysis flowchart.

Table 3. Results of Meta-analysis*

Imaging Technique	Studies Included, No.	Sensitivity	Specificity	Likelihood Ratio†		Diagnostic Odds Ratio	Moses et al ⁷ Model (Weighted)‡		
				Positive	Negative		a	b	P Value
TEE	10	98 (95-99)	95 (92-97)§	14.1 (6.0-33.2)§	0.04 (0.02-0.08)	6.1 (5.0-7.2)	6.2	-0.35	.45
Helical CT	3	100 (96-100)§	98 (87-99)	13.9 (4.2-46.0)	0.02 (0.01-0.11)	6.5 (4.4-8.7)	3.9	3.2	.53
MRI	7	98 (95-99)	98 (95-100)	25.3 (11.1-57.1)	0.05 (0.03-0.10)	6.8 (5.5-8.0)	6.8	0.25	.53

Abbreviations: CI, confidence interval; CT, computed tomography; MRI, magnetic resonance imaging; TEE, transesophageal echocardiography.

*Unless otherwise indicated, data are reported with 95% confidence intervals. The DerSimonian-Laird random-effects model⁶ was used throughout.

†Likelihood ratios greater than 10 and less than 0.1 are considered strong evidence for confirming or ruling out a diagnosis, respectively, under most circumstances.



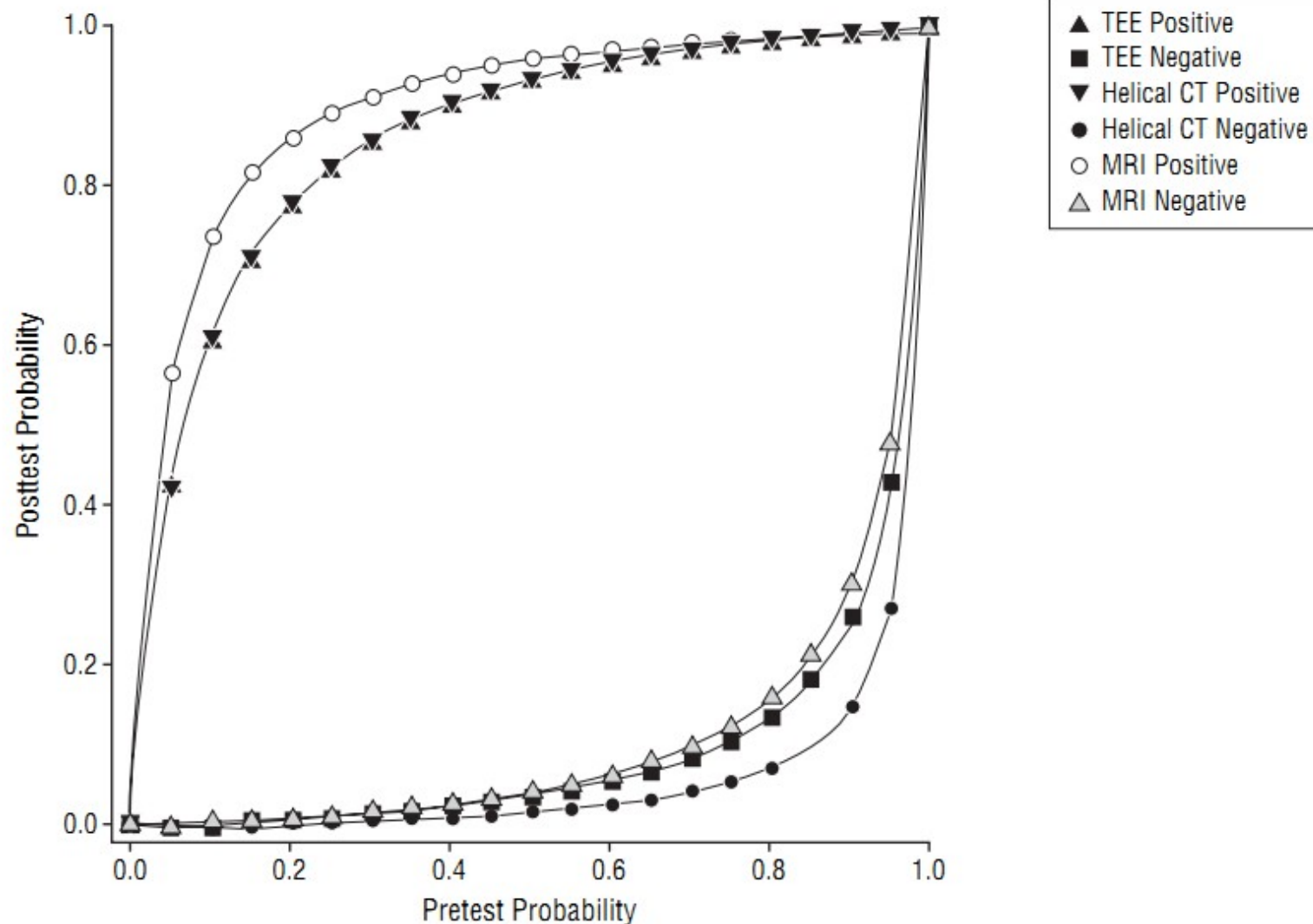


Figure 3. Posttest probability according to pretest probability. Posttest probability was calculated as follows: $\text{Posttest probability} = [\text{pretest odds} \times \text{likelihood ratio}] / [(1 + \text{pretest odds}) \times \text{likelihood ratio}]$; where $\text{pretest odds} = \text{pretest probability} / (1 - \text{pretest probability})$. CT indicates computed tomography; MRI, magnetic resonance imaging; and TEE, transesophageal echocardiography.

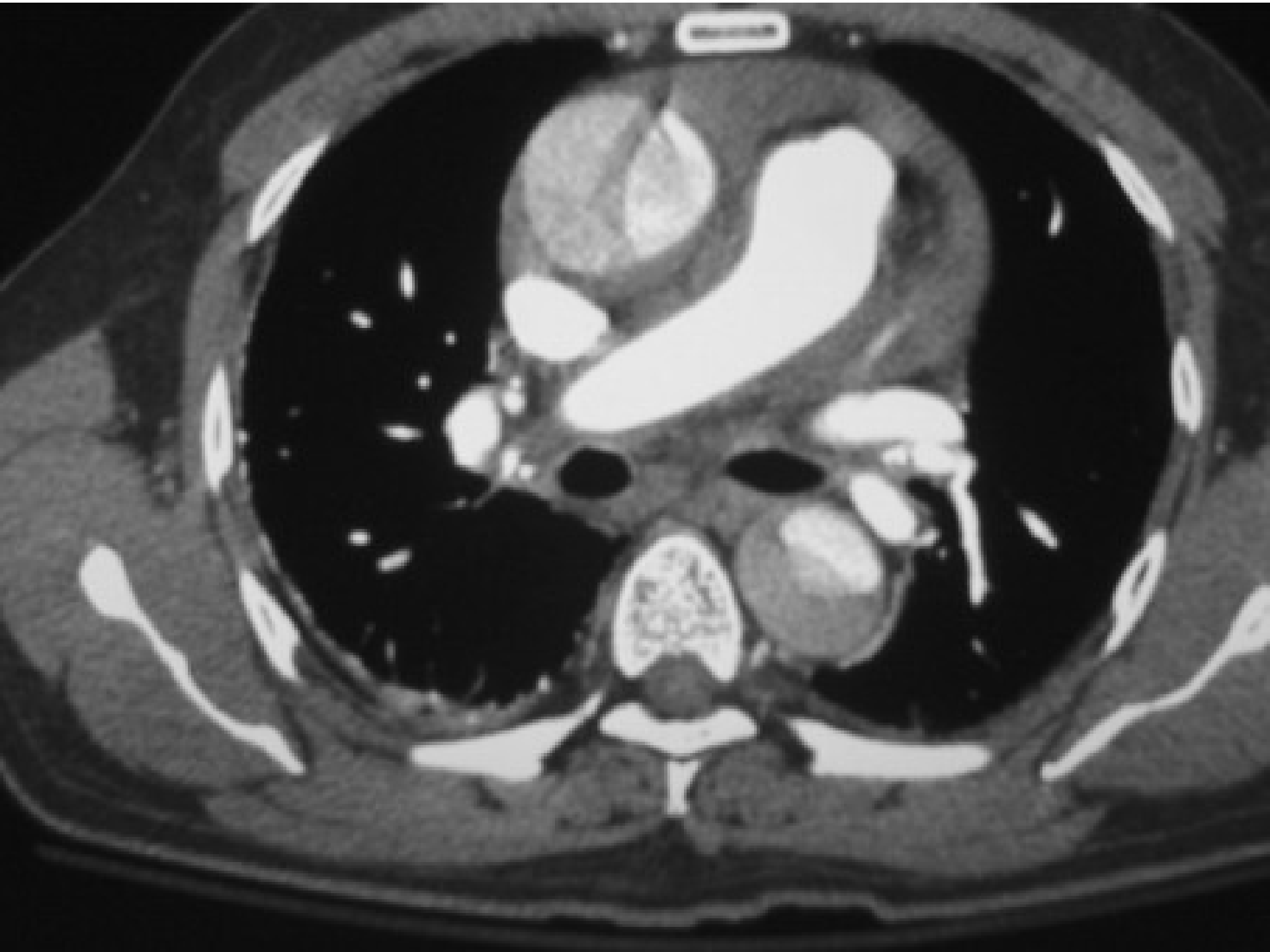
ACCF/AHA Guideline

2010 ACCF/AHA/AATS/ACR/ASA/SCA/SCAI/SIR/STS/SVM Guidelines for the Diagnosis and Management of Patients With Thoracic Aortic Disease

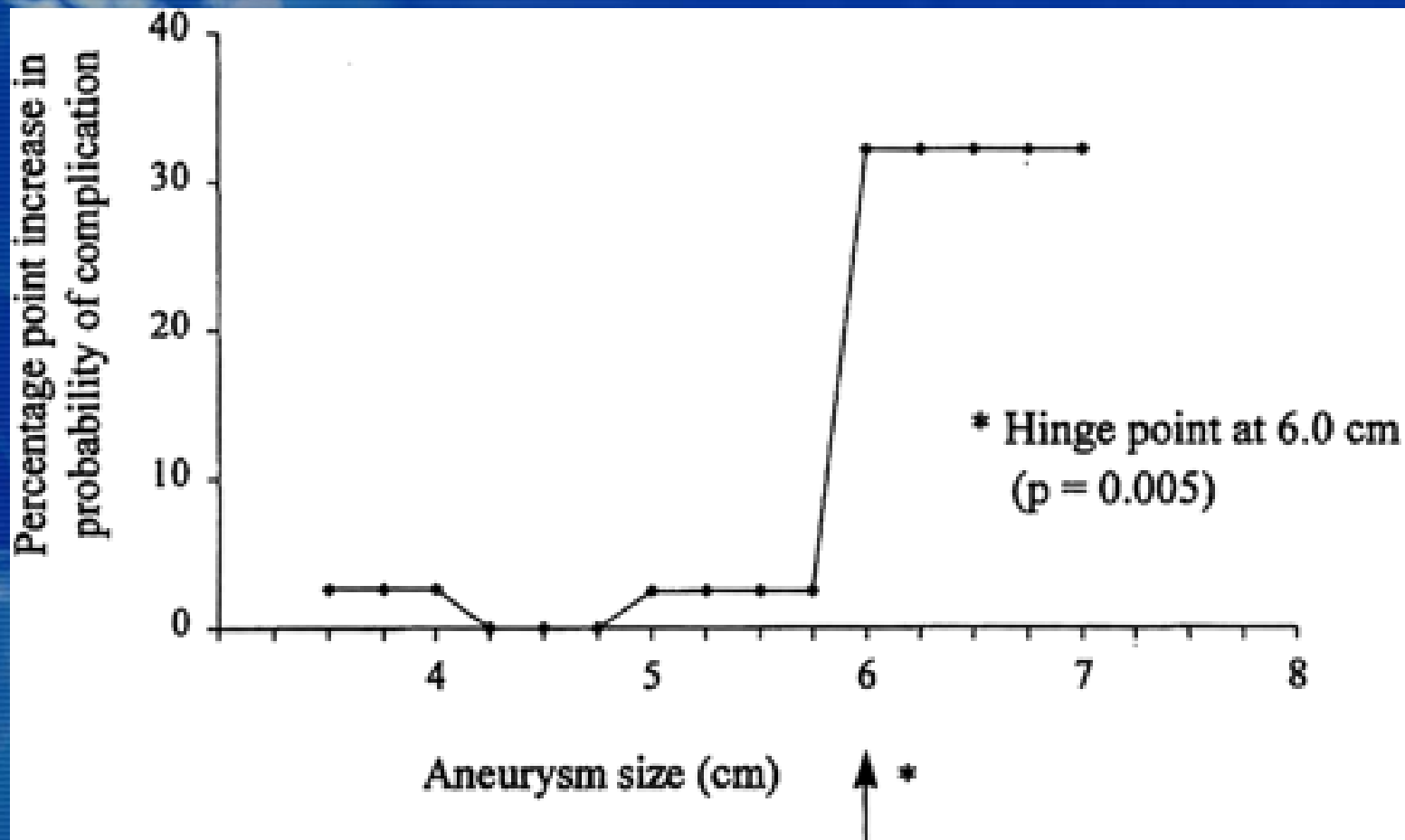
3. Urgent and definitive imaging of the aorta using transesophageal echocardiogram, computed tomographic imaging, or magnetic resonance imaging is recommended to identify or exclude thoracic aortic dissection in patients at high risk for the disease by initial screening.^{42–46,67,73} (*Level of Evidence: B*)

2. If a high clinical suspicion exists for acute aortic dissection but initial aortic imaging is negative, a second imaging study should be obtained.²¹² (*Level of Evidence: C*)

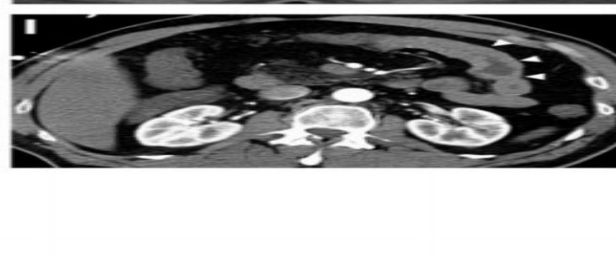
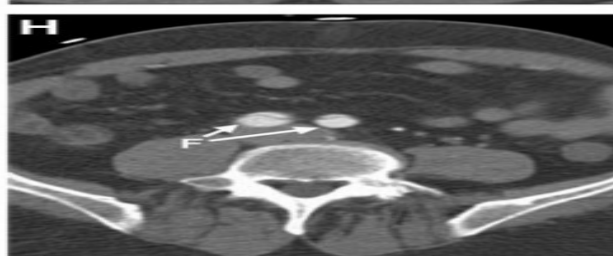
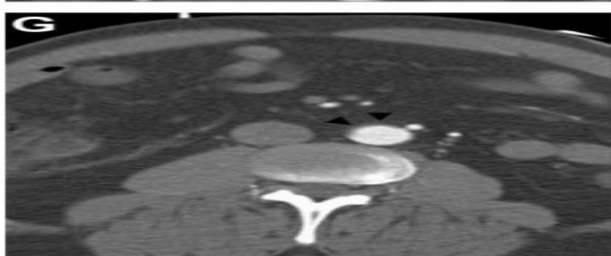
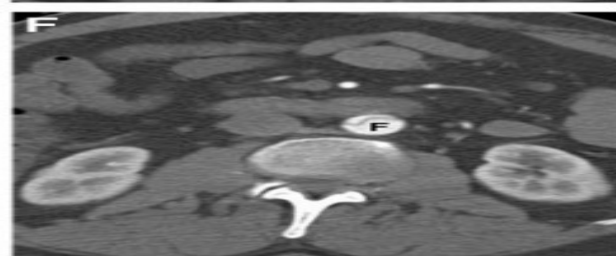
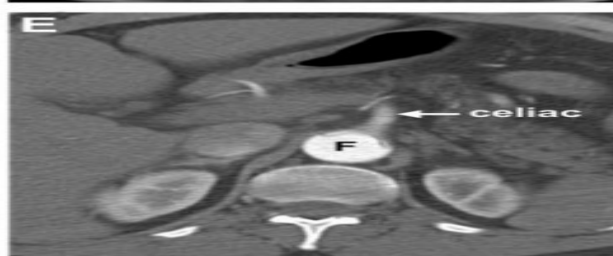
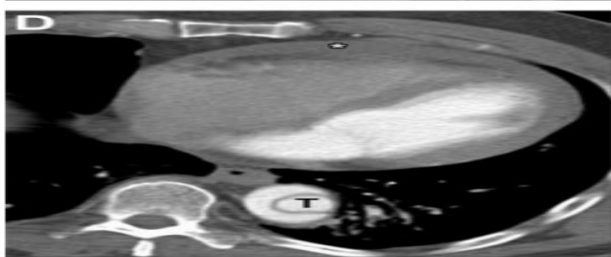
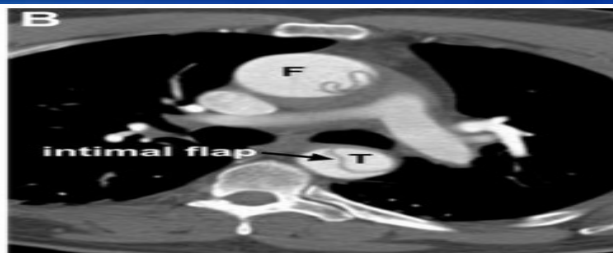
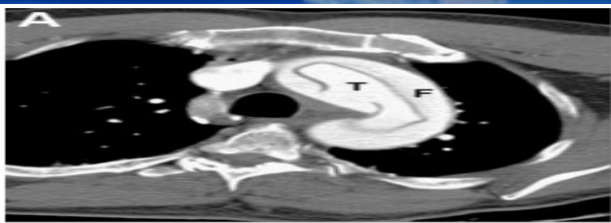


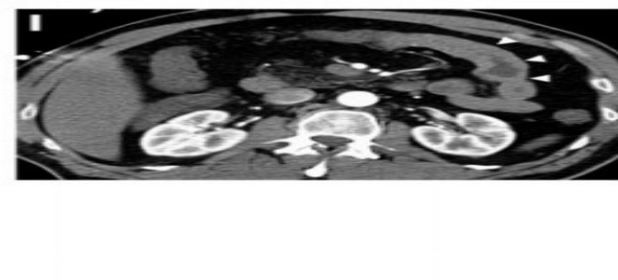
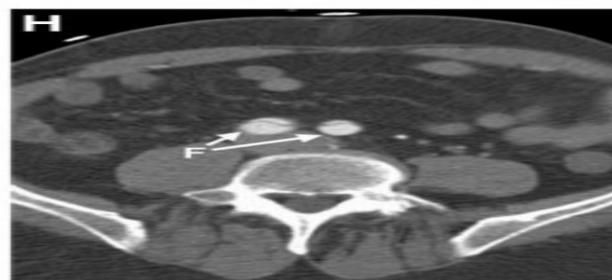
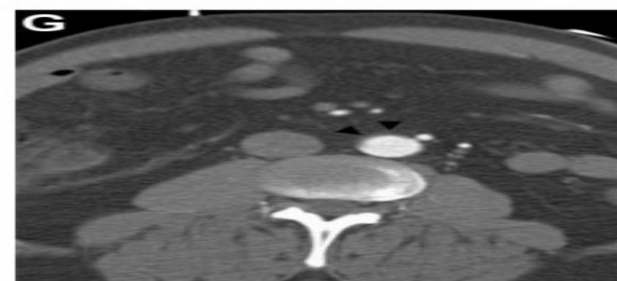
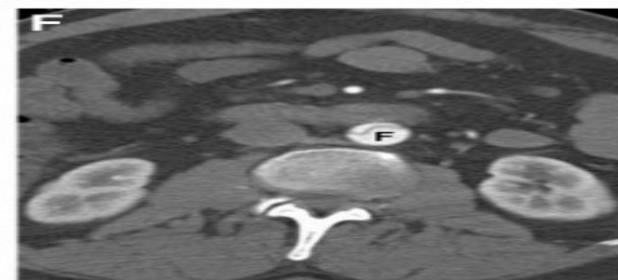
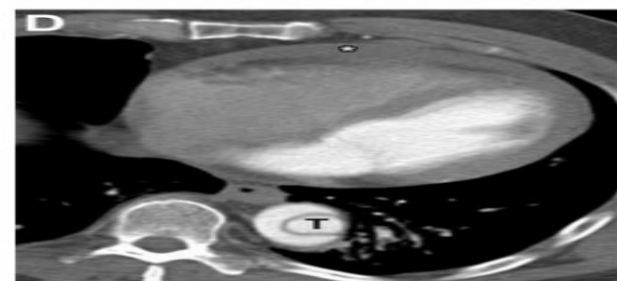
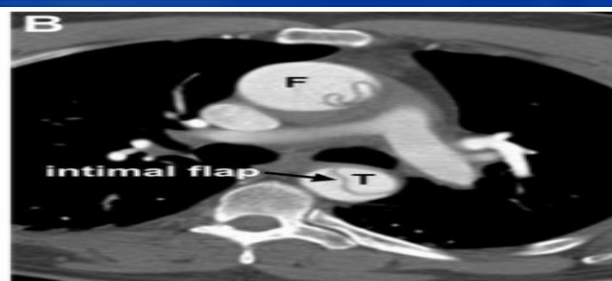
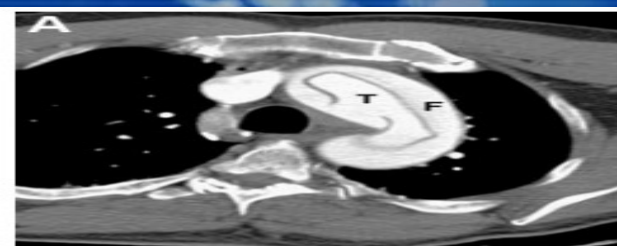


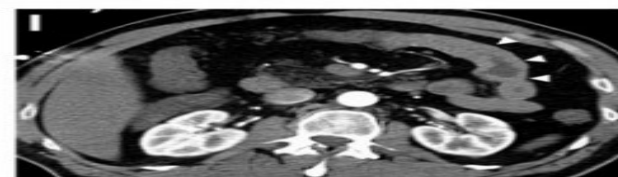
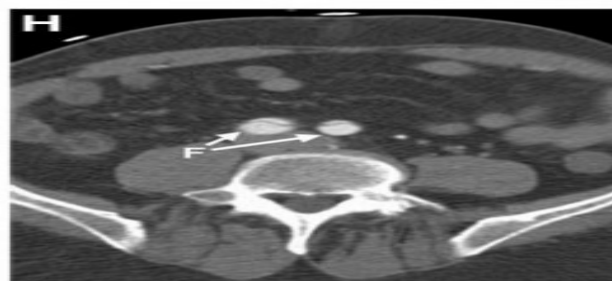
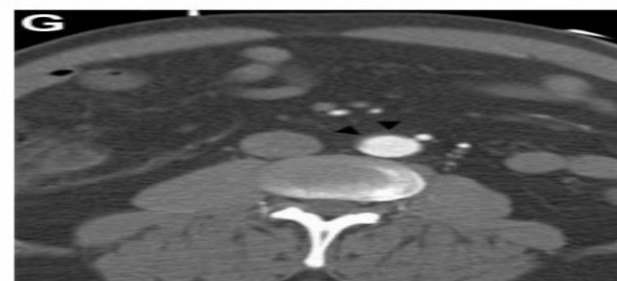
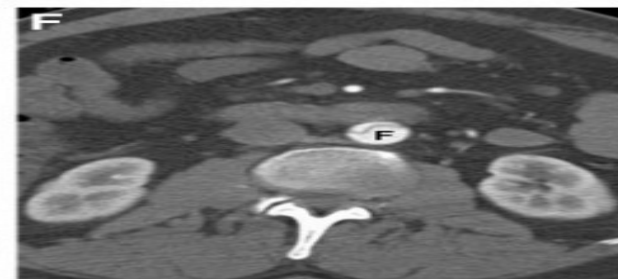
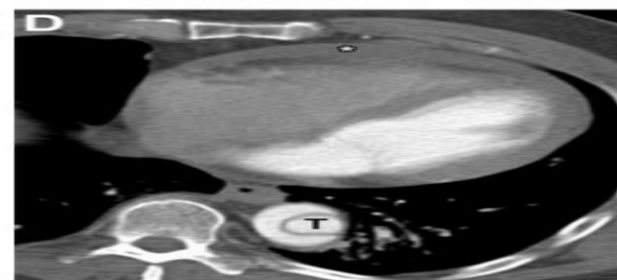
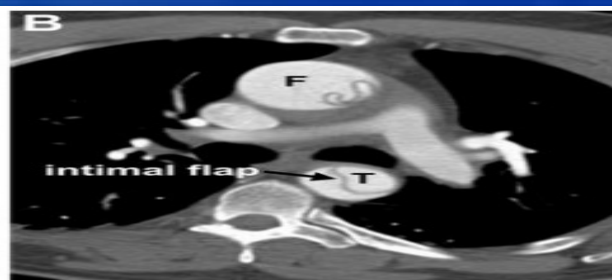
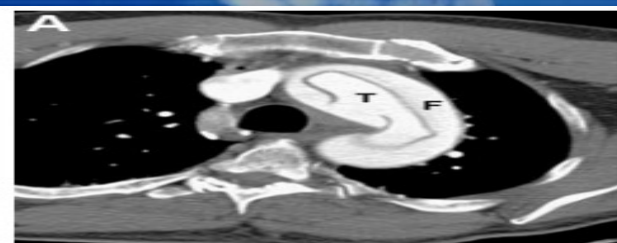


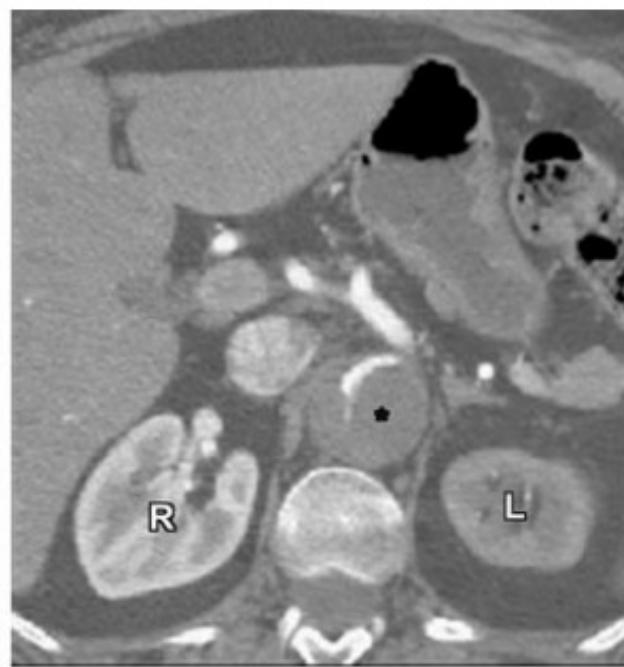


Estimated effect of ascending aortic aneurysm size on risk of complication.









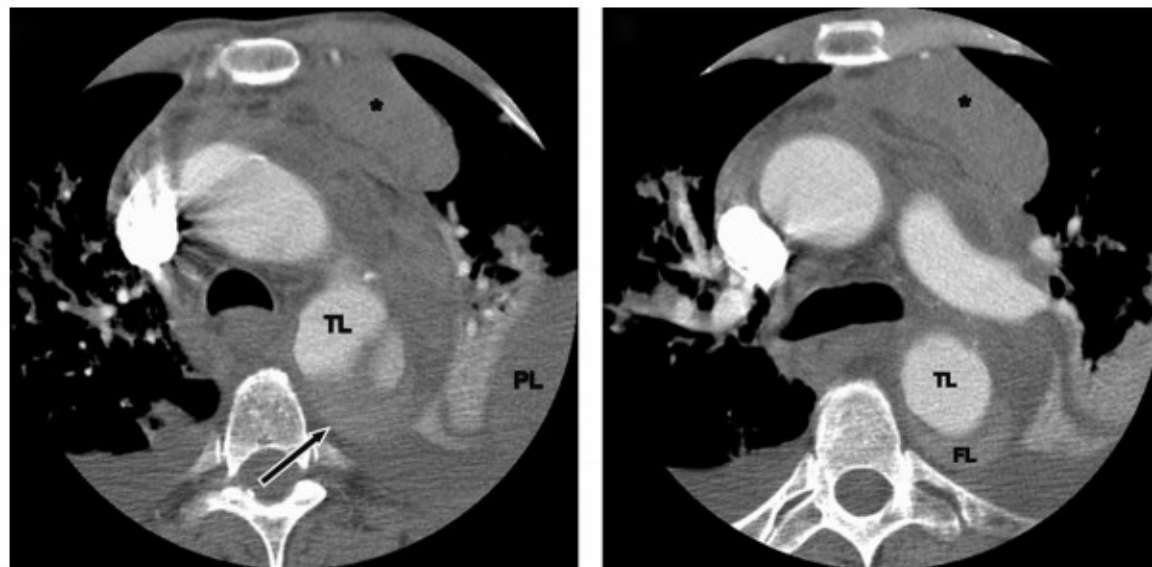
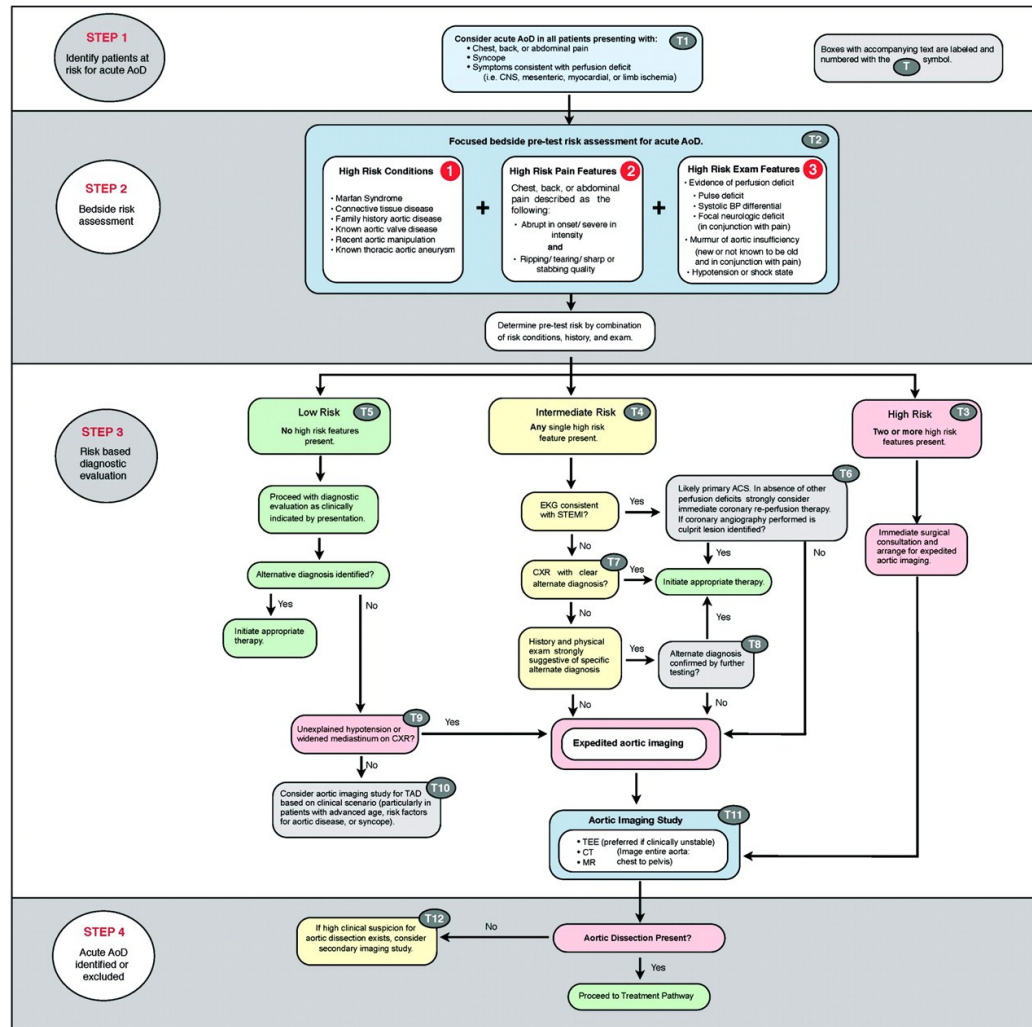


Figure 21. Type B aortic dissection with mediastinal hematoma and pleural blood. Ruptured Type B aortic dissection with mediastinal hematoma (*) and pleural blood. Left, Flap arises in the proximal descending thoracic aorta, with faint contrast-enhanced blood adjacent to the site of rupture outside the confines of the aortic wall (arrow). Right, At the level of the aortopulmonary window. FL indicates false lumen; PL, pleural blood; and TL, true lumen.

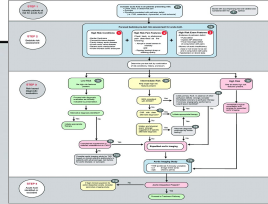
Aort Diseksiyonuna Yaklaşım Algoritması



et al. Circulation 2010;121:e266-e369

Aort Diseksiyonuna Yaklaşım Algoritması

STEP 1 Identify patients at risk for acute AoD



Consider acute AoD in all patients presenting with:

- Chest, back, or abdominal pain
- Syncope
- Symptoms consistent with perfusion deficit (i.e. CNS, mesenteric, myocardial, or limb ischemia)

Boxes with accompanying text are labeled and numbered with the **T** symbol.

Focused bedside pre-test risk assessment for acute AoD.

High Risk Conditions 1

- Marfan Syndrome
- Connective tissue disease
- Family history aortic disease
- Known aortic valve disease
- Recent aortic manipulation
- Known thoracic aortic aneurysm

+

High Risk Pain Features 2

Chest, back, or abdominal pain described as the following:

- Abrupt in onset/ severe in intensity and
- Ripping/ tearing/ sharp or stabbing quality

+

High Risk Exam Features 3

- Evidence of perfusion deficit
- Pulse deficit
- Systolic BP differential
- Focal neurologic deficit (in conjunction with pain)
- Murmur of aortic insufficiency (new or not known to be old and in conjunction with pain)
- Hypotension or shock state

Determine pre-test risk by combination of risk conditions, history, and exam.

STEP 3 Risk based diagnostic evaluation

Low Risk T5
No high risk features present.

Proceed with diagnostic evaluation as clinically indicated by presentation.

Alternative diagnosis identified?

Initiate appropriate therapy.

Intermediate Risk T4
Any single high risk feature present.

EKG consistent with STEMI?

Yes

Likely primary ACS. In absence of other perfusion deficits, strongly consider immediate coronary re-perfusion therapy. If coronary angiography performed is culprit lesion identified?

Yes

Initiate appropriate therapy.

No

CXR with clear alternate diagnosis?

Yes

No

History and physical exam strongly suggestive of specific alternate diagnosis

Yes

Alternate diagnosis confirmed by further testing?

Yes

No

No

High Risk T3
Two or more high risk features present.

Immediate surgical consultation and arrange for expedited aortic imaging.

Unexplained hypotension or widened mediastinum on CXR?

Yes

No

Consider aortic imaging study for TAD based on clinical scenario (particularly in patients with advanced age, risk factors for aortic disease, or syncope).

Expedited aortic imaging

Aortic Imaging Study T11

- TEE (preferred if clinically unstable)
- CT (Image entire aorta: chest to pelvis)
- MR

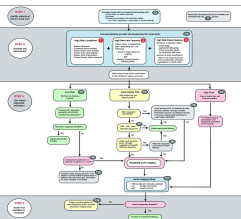
Aortic Dissection Present?

Proceed to Treatment Pathway

No

If high clinical suspicion for aortic dissection exists, consider secondary imaging study.

No



STEP 1

Identify patients at risk for acute AoD

Consider acute AoD in all patients presenting with:

- Chest, back, or abdominal pain
- Syncope
- Symptoms consistent with perfusion deficit (i.e. CNS, mesenteric, myocardial, or limb ischemia)

Boxes with accompanying text are labeled and numbered with the **T** symbol.

STEP 2

Bedside risk assessment

Focused bedside pre-test risk assessment for acute AoD.**High Risk Conditions 1**

- Marfan Syndrome
- Connective tissue disease
- Family history aortic disease
- Known aortic valve disease
- Recent aortic manipulation
- Known thoracic aortic aneurysm

+

High Risk Pain Features 2

- Chest, back, or abdominal pain described as the following:
- Abrupt in onset/ severe in intensity
 - and
 - Ripping/ tearing/ sharp or stabbing quality

+

High Risk Exam Features 3

- Evidence of perfusion deficit
- Pulse deficit
- Systolic BP differential
- Focal neurologic deficit (in conjunction with pain)
- Murmur of aortic insufficiency (new or not known to be old and in conjunction with pain)
- Hypotension or shock state

Determine pre-test risk by combination of risk conditions, history, and exam.

STEP 3

Risk based diagnostic evaluation

Low Risk T5

No high risk features present.

Proceed with diagnostic evaluation as clinically indicated by presentation.

Alternative diagnosis identified?

Yes

Initiate appropriate therapy.

No

Unexplained hypotension or widened mediastinum on CXR? T9

Yes

Expedited aortic imaging

Consider aortic imaging study for TAD based on clinical scenario (particularly in patients with advanced age, risk factors for aortic disease, or syncope). T10

No

Aortic Imaging Study T11

- TEE (preferred if clinically unstable)
- CT (Image entire aorta: chest to pelvis)
- MR

Aortic Dissection Present?

No

If high clinical suspicion for aortic dissection exists, consider secondary imaging study. T12

Proceed to Treatment Pathway

Yes

EKG consistent with STEMI? T4

Yes

Likely primary ACS. In absence of other perfusion deficits, strongly consider immediate coronary re-perfusion therapy. If coronary angiography performed is culprit lesion identified? T6

Yes

Initiate appropriate therapy.

Yes

Alternate diagnosis confirmed by further testing? T8

No

CXR with clear alternate diagnosis? T7

Yes

History and physical exam strongly suggestive of specific alternate diagnosis

Yes

No

High Risk T3

Two or more high risk features present.

Immediate surgical consultation and arrange for expedited aortic imaging.

No

STEP 4

Acute AoD identified or excluded



Tedavi

Tedavi Hedefleri

- Analjezi
 - Opioidler
- TA SKB 100-120 mmHg arası
 - Esmolol, labetolol
 - Nitroprussid – tek başına verme, refleks taşikardi
 - Nitrogliserin – tek başına verme, refleks taşikardi
- N <60/dk
 - Esmolol, labetolol
- **Tercih edilecek kombinasyon:**
 - **Morfin + Esmolol + Nitroprussid**

Table 5

Initial medications for blood pressure control in aortic dissection

Medication

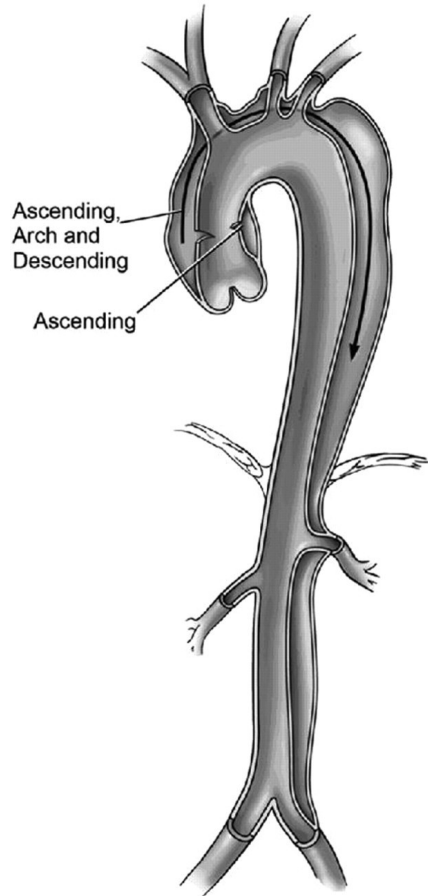
Class (Agent)	Starting Dose	Infusion Regimen	Cautions for Use
<u>β-Blockers</u>			
1. Esmolol	Bolus 500 µg/kg	50–200 µg/kg/min	COPD or high-risk bronchospasm; consider selective β-blocker such as metoprolol or atenolol
2. Labetalol	Bolus 20 mg every 5–10 min to 80–300 mg total	1–2 mg/min	
Sodium Nitroprusside		0.5–3.0 µg/kg/min	Concomitant use of β-blocker to avoid reflex tachycardia, possible cyanide toxicity with prolonged use

AHA 2010 Tedavi Önerileri

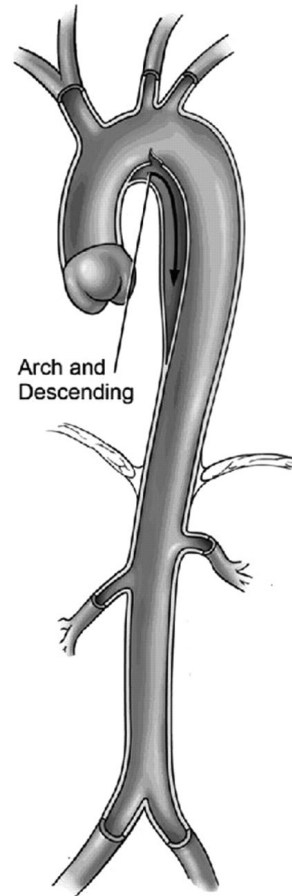
- İlk tedavi
 - Nabız 60 olacak şekilde IV B-blokör (*Brevibloc®*)
 - *Tabi kontraendikasyon yoksa*
 - *Kontraendikasyon varsa (Diltizem®)*
 - Hedef nabza ulaşıldıktan sonra SKB hala >120 mmHg ise vazodilatör ver (*Nipruss®*)
 - Refleks taşikardi olmasın diye önce hız kontrolü sonra vazodilatör ver
- Kesin tedavi
 - Herkese acil cerrahi konsültasyonu iste
 - Asendan AD hemen ameliyathaneye
 - Desendan AD hayatı tehdit eden komplikasyon gelişmediği sürece medikal tedavi
 - Uç organlarda malperfüzyon, ilerleyen diseksiyon,



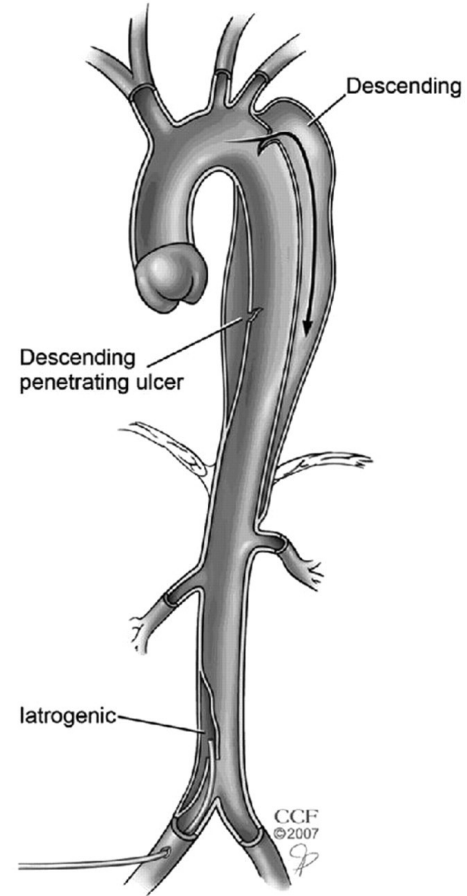
Proximal
DeBakey I and II
Stanford A



Proximal
Stanford B



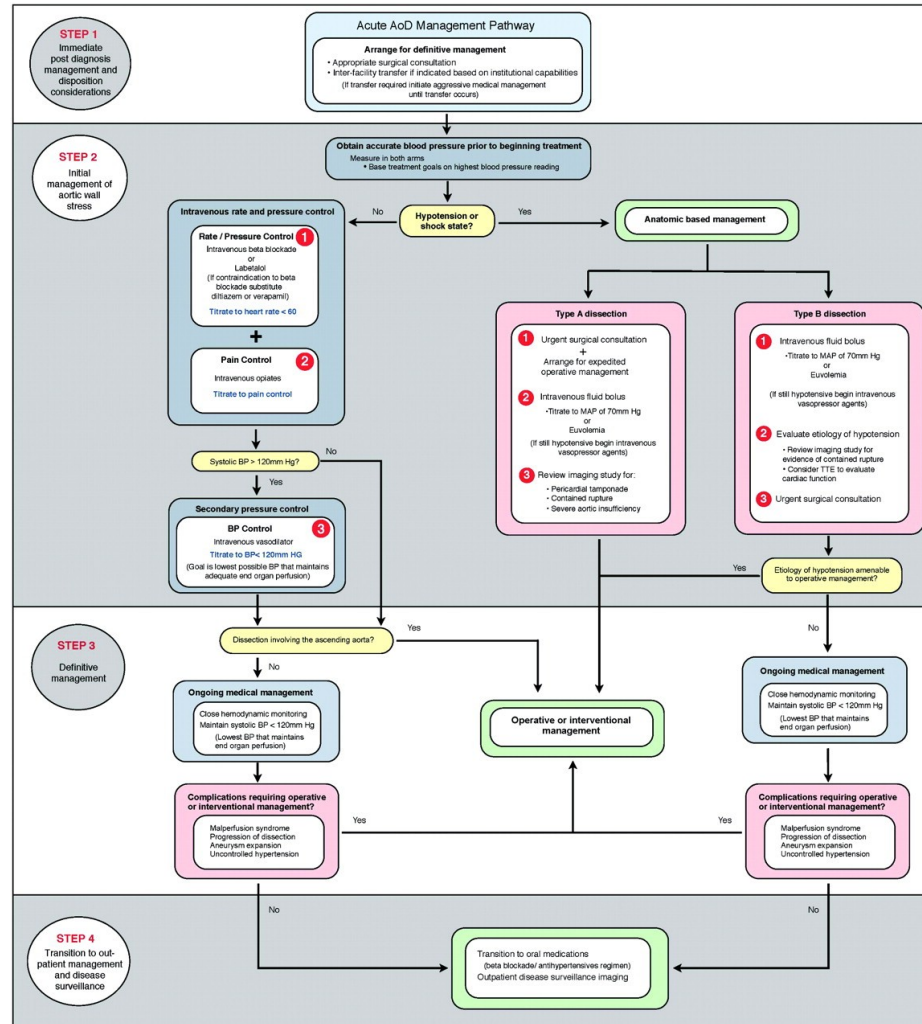
Distal
DeBakey IIIa and IIIb
Stanford B



Hemen Cerrahi
Medikal Tx Mortalitesi %56

Net Değil
Uygun medikal tx ile mortalite %10

Akut AD Yönetim Algoritması



et al. Circulation 2010;121:e266-e369

Akut AD Yönetim Algoritması

STEP 1

Immediate post diagnosis management and disposition considerations

Acute AoD Management Pathway

Arrange for definitive management

- Appropriate surgical consultation
- Inter-facility transfer if indicated based on institutional capabilities
(If transfer required initiate aggressive medical management until transfer occurs)

STEP 2

Initial management of aortic wall stress

Obtain accurate blood pressure prior to beginning treatment

- Measure in both arms
- Base treatment goals on highest blood pressure reading

Hypotension or shock state?

No

Yes

Anatomic based management

Intravenous rate and pressure control

Rate / Pressure Control ¹

Intravenous beta blockade or
Labetalol
(If contraindication to beta blockade substitute
diltiazem or verapamil)

Titrate to heart rate < 60

+

Pain Control ²

Intravenous opiates

Titrate to pain control

Systolic BP > 120mm Hg?

No

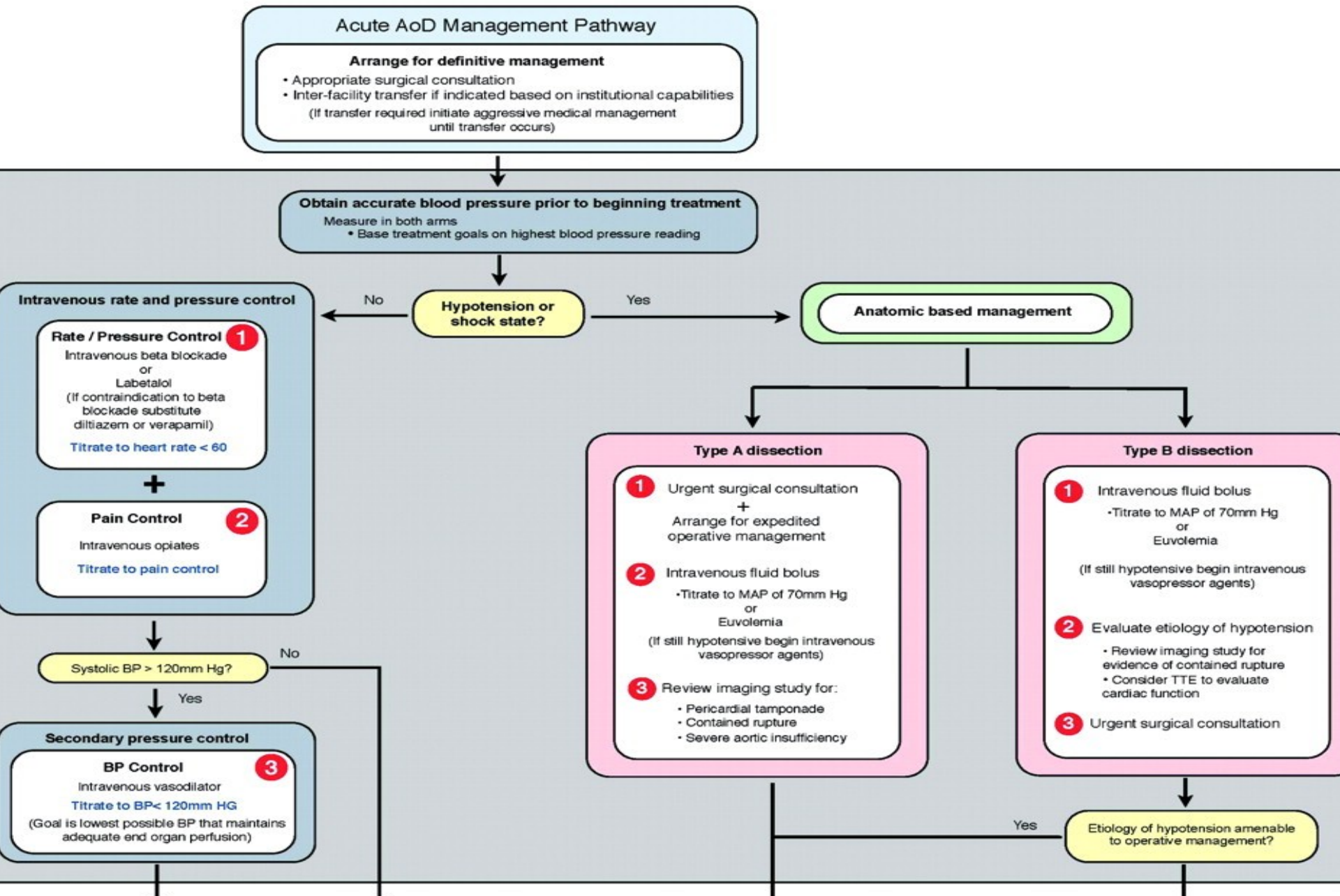
Type A dissection

¹ Urgent surgical consultation
+
Arrange for expedited operative management

² Intravenous fluid bolus
• Titrate to MAP of 70mm Hg or
Euvolemia
(If still hypotensive begin intravenous vasopressor agents)

³ Review imaging study for:

Akut AD Yönetim Algoritması



Acute AoD Management Pathway

- Arrange for definitive management**
- Appropriate surgical consultation
 - Inter-facility transfer if indicated based on institutional capabilities (If transfer required initiate aggressive medical management until transfer occurs)

Obtain accurate blood pressure prior to beginning treatment

- Measure in both arms
- Base treatment goals on highest blood pressure reading

Hypotension or shock state?

No

Yes

Anatomic based management

Intravenous rate and pressure control

Rate / Pressure Control ¹

Intravenous beta blockade or Labetalol
(If contraindication to beta blockade substitute diltiazem or verapamil)
Titrate to heart rate < 60

+

Pain Control ²

Intravenous opiates
Titrate to pain control

Systolic BP > 120mm Hg?

No

Yes

Secondary pressure control

BP Control ³

Intravenous vasodilator
Titrate to BP < 120mm HG
(Goal is lowest possible BP that maintains adequate end organ perfusion)

Dissection involving the ascending aorta?

No

Yes

Ongoing medical management

Close hemodynamic monitoring
Maintain systolic BP < 120mm Hg
(Lowest BP that maintains end organ perfusion)

Complications requiring operative or interventional management?

Malperfusion syndrome
Progression of dissection
Aneurysm expansion
Uncontrolled hypertension

No

Operative or interventional management

Type A dissection

- 1 Urgent surgical consultation + Arrange for expedited operative management
- 2 Intravenous fluid bolus
• Titrate to MAP of 70mm Hg or Euvolemia
(If still hypotensive begin intravenous vasopressor agents)
- 3 Review imaging study for:
 - Pericardial tamponade
 - Contained rupture
 - Severe aortic insufficiency

Type B dissection

- 1 Intravenous fluid bolus
• Titrate to MAP of 70mm Hg or Euvolemia
(If still hypotensive begin intravenous vasopressor agents)
- 2 Evaluate etiology of hypotension
 - Review imaging study for evidence of contained rupture
 - Consider TTE to evaluate cardiac function
- 3 Urgent surgical consultation

Etiology of hypotension amenable to operative management?

No

Ongoing medical management

Close hemodynamic monitoring
Maintain systolic BP < 120mm Hg
(Lowest BP that maintains end organ perfusion)

Complications requiring operative or interventional management?

Malperfusion syndrome
Progression of dissection
Aneurysm expansion
Uncontrolled hypertension

No

Transition to oral medications
(beta blockade/ antihypertensives regimen)
Outpatient disease surveillance imaging



Teşekkürler

Uzm. Dr. Haldun Akoğlu
Dr. Lütfi Kırdar Kartal EAH
Acil Tıp Kliniği