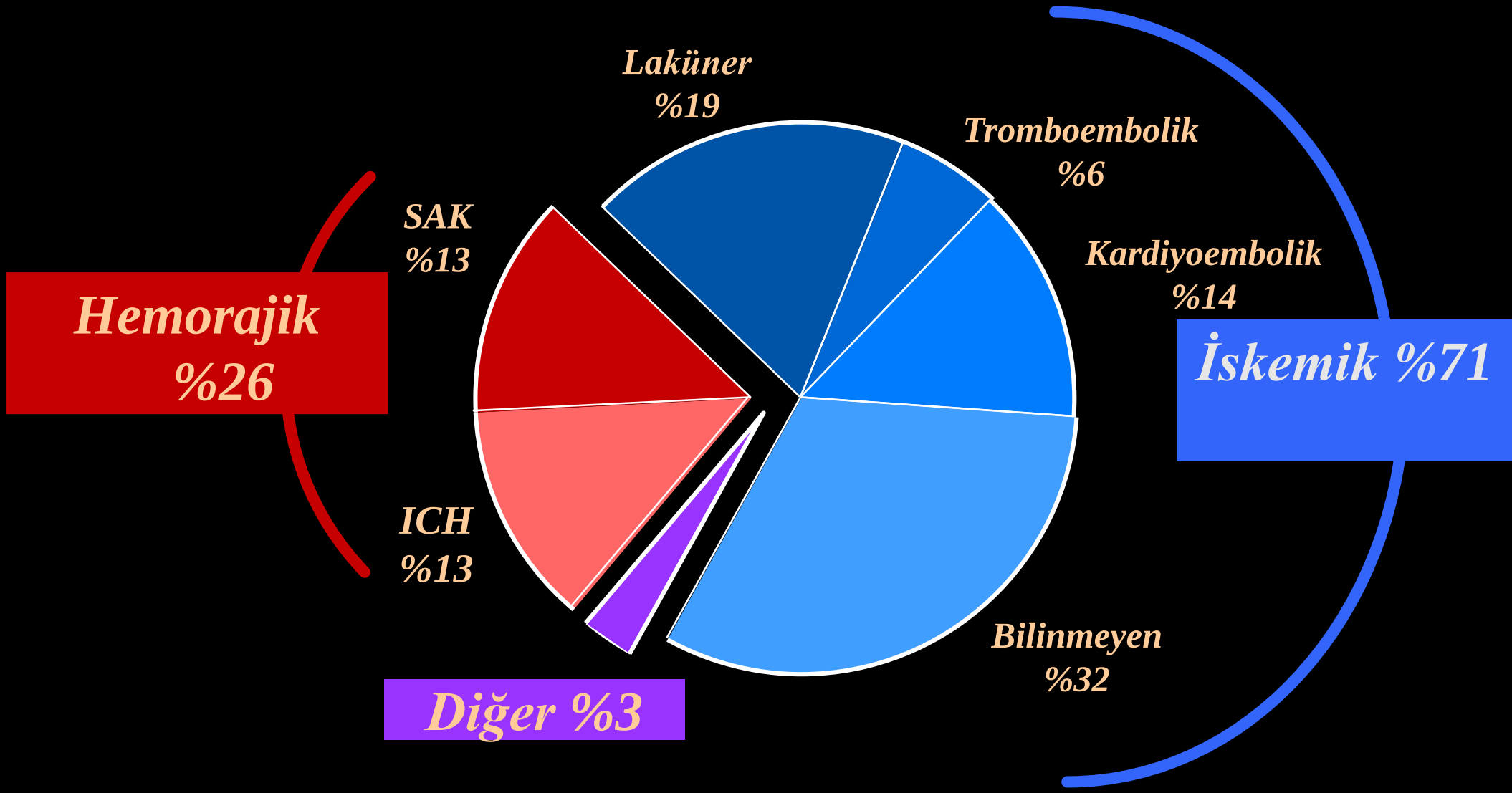
Akut İskemik İnmenin Hastane Öncesi Yönetimi

Prof Dr Talip Asil
Memorial Hizmet Hastanesi İnme Ünitesi

BEZMİÂLEM VAKIF ÜNİVERSİTESİ

İnme tipleri



Data from NINCDS Stroke Data Bank: Foulkes et al. Stroke. 1988;19:547.

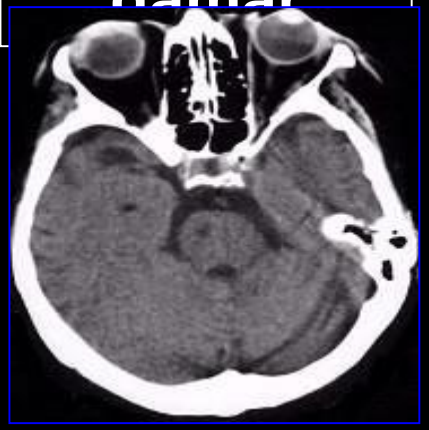
BEZMİÂLEM VAKIF ÜNİVERSİTESİ

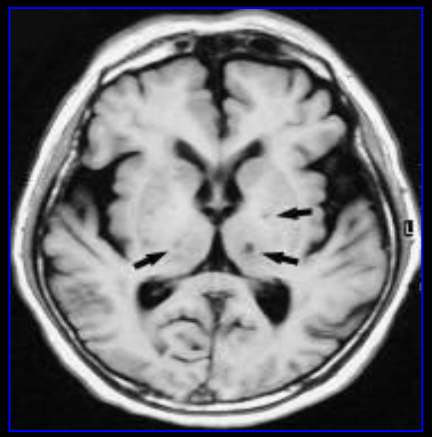
İnme

İskemik

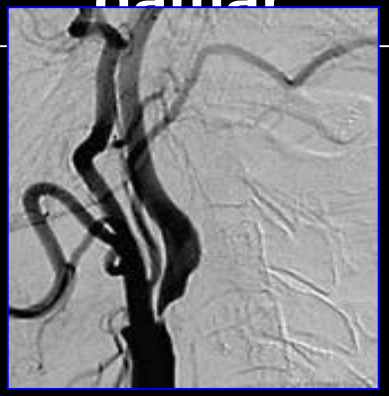
Hemorajik

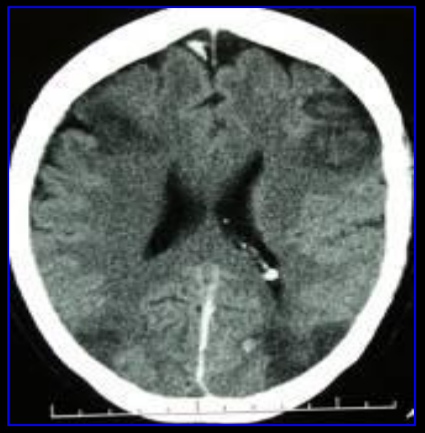
Küçük damar





Büyük damar





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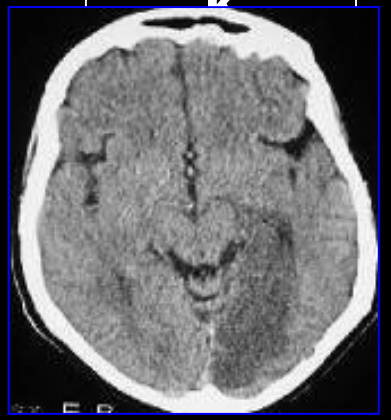
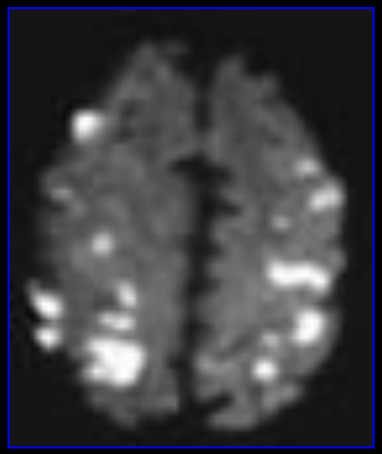




Tissue Plasminogen Activator iv

Trombolitik

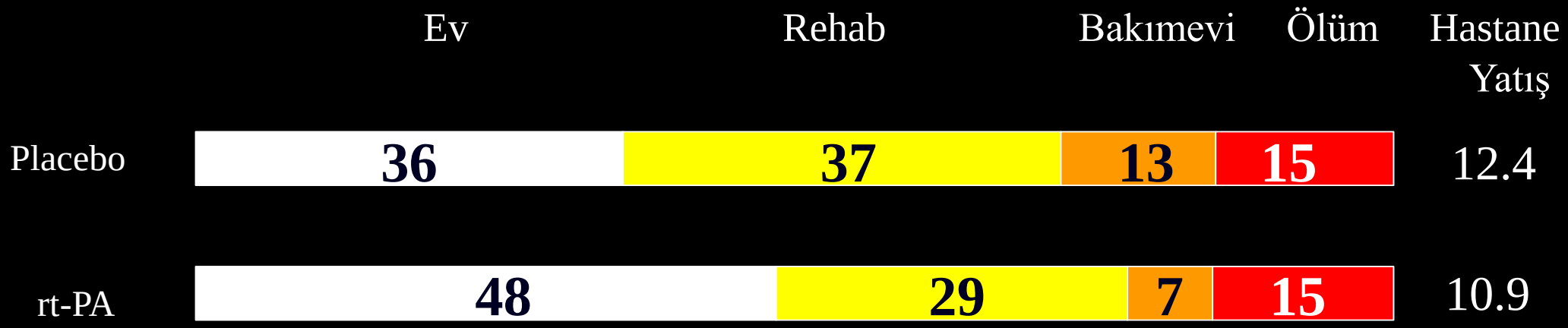
İlk 3 saatte IV tPA akut iskemik inmede onay almış tedavidir

FDA onayı	Haziran	1996
Full Kanada onayı	Şubat	2005
EU onayı		2003
Türkiye		2006

İlk 3 saatte IV TPA

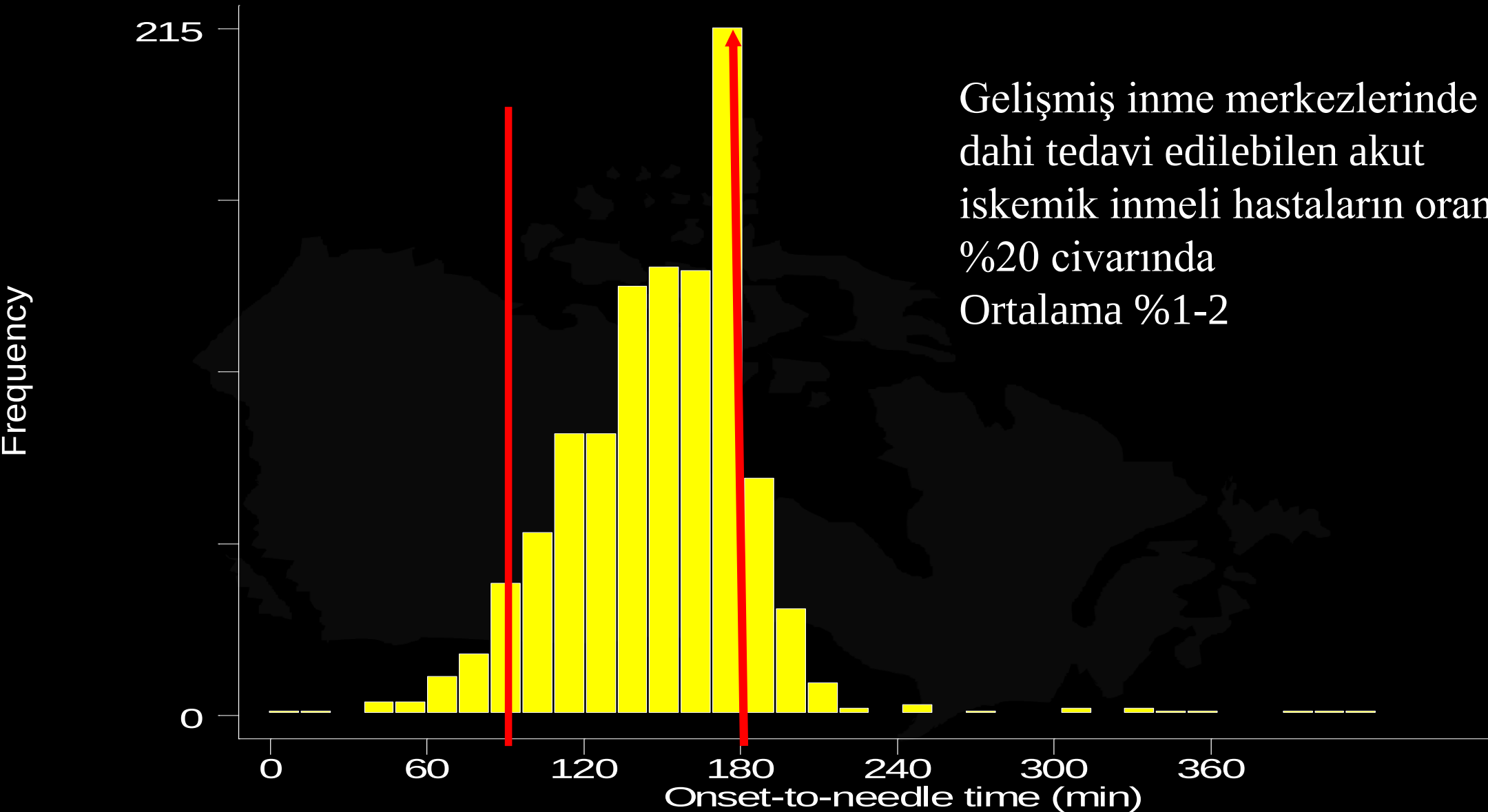
Neurology 1998;50:883-890

100 hastada 12 hasta daha fazla eve taburcu oluyor
6 hasta daha az bakım evine gidiyor



Tedavi Zamanı

Hill MD et al. CASES. CMAJ 2005



Gelişmiş inme merkezlerinde dahi tedavi edilebilen akut iskemik inmeli hastaların oran %20 civarında
Ortalama %1-2

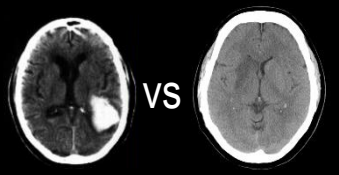
8 miles

Lokal hastane
No CT

En azından %20 inmeli hasta ilk 2 saatte hastaneye ulaşmakta.

40 miles

CT

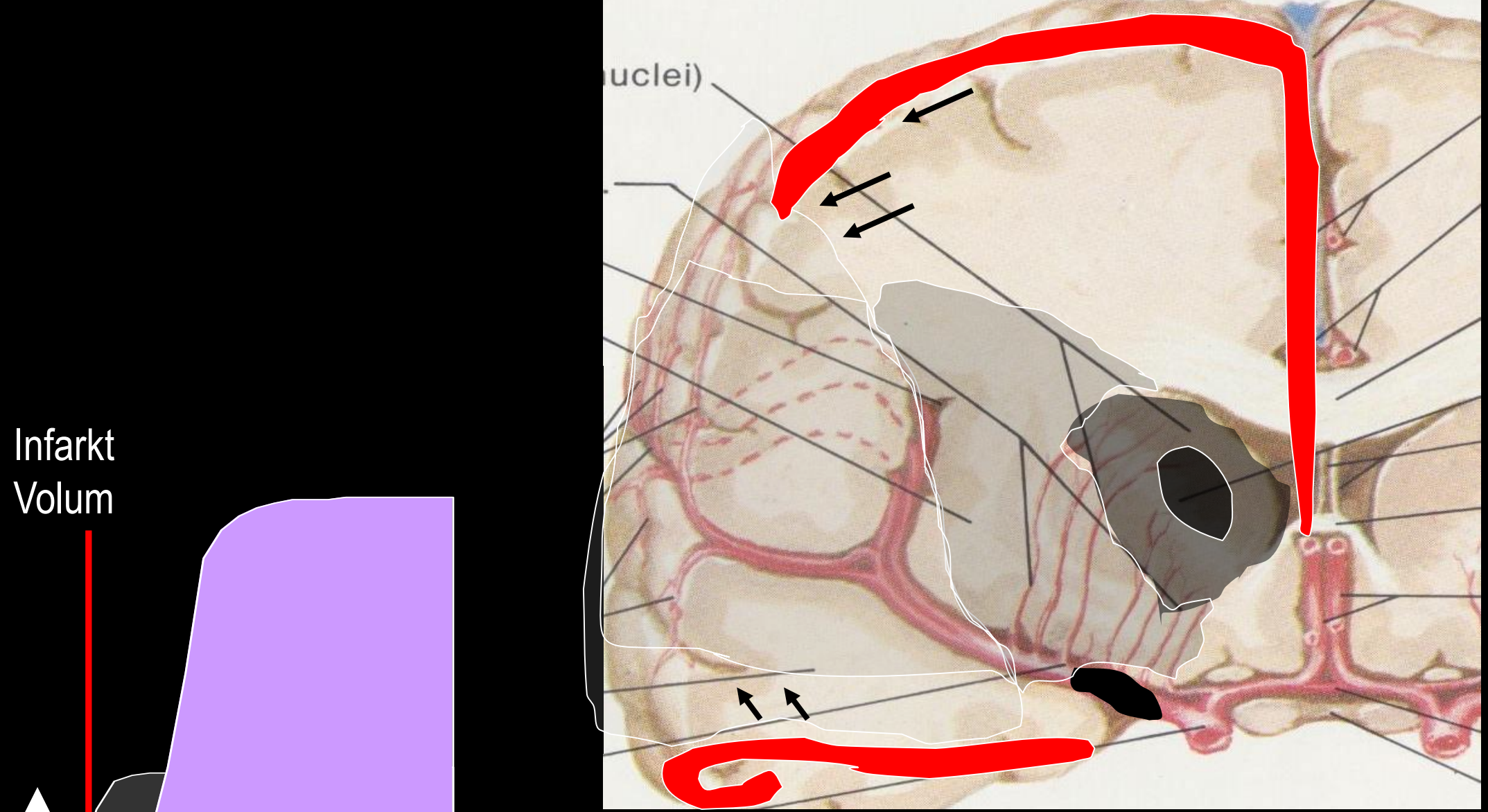


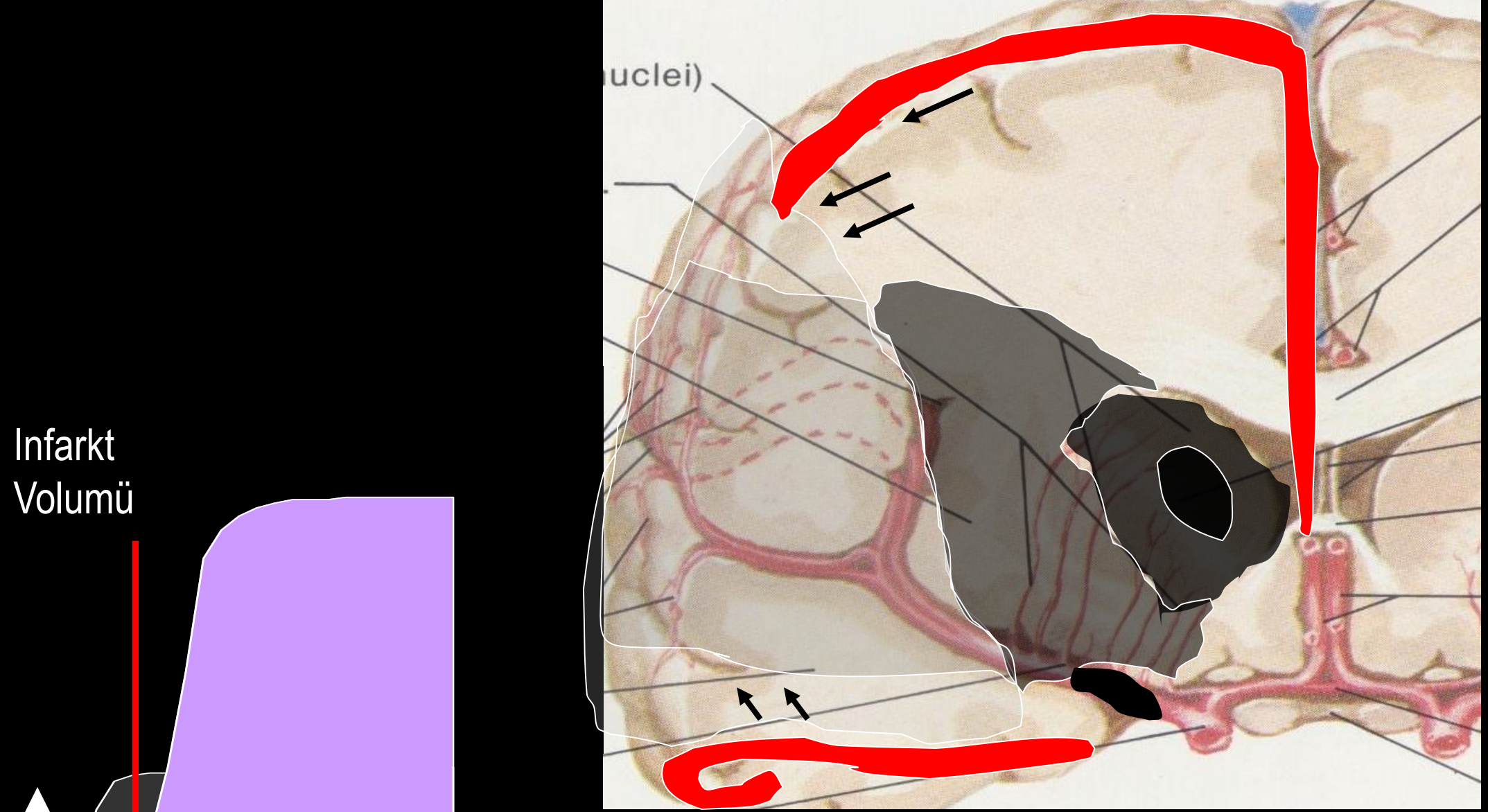
8 miles

Lokal Hastane
No CT

CTvar fakat:

İnme uzmanı yok
sınırlı/gecikmiş CT değerlendirme
tPA yok
sistem yeterince hızlı değil


uclei)
Infarkt
Volum
0 30 60 120 180 240 360 480 720 1080 1440
dak
Zaman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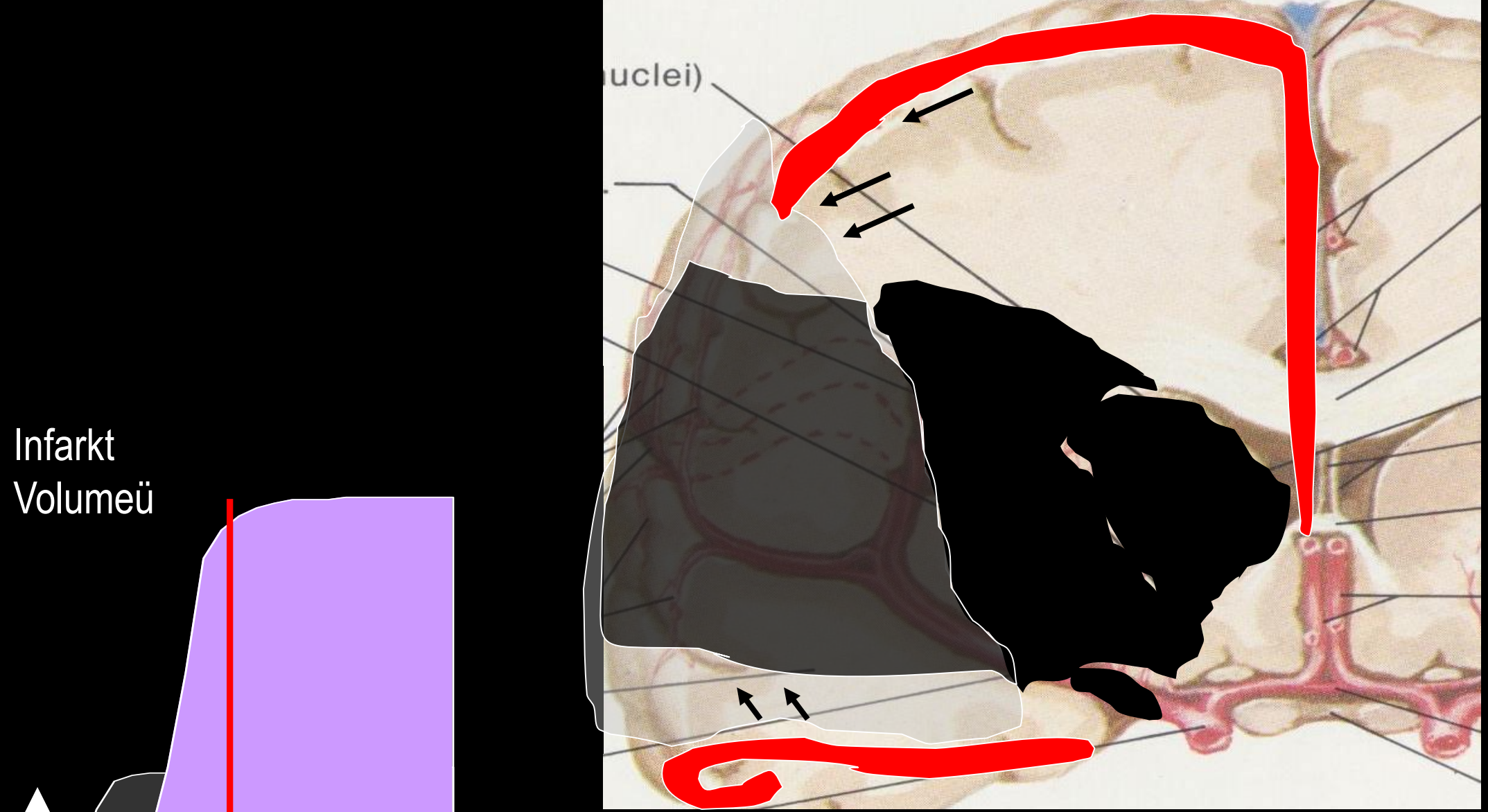
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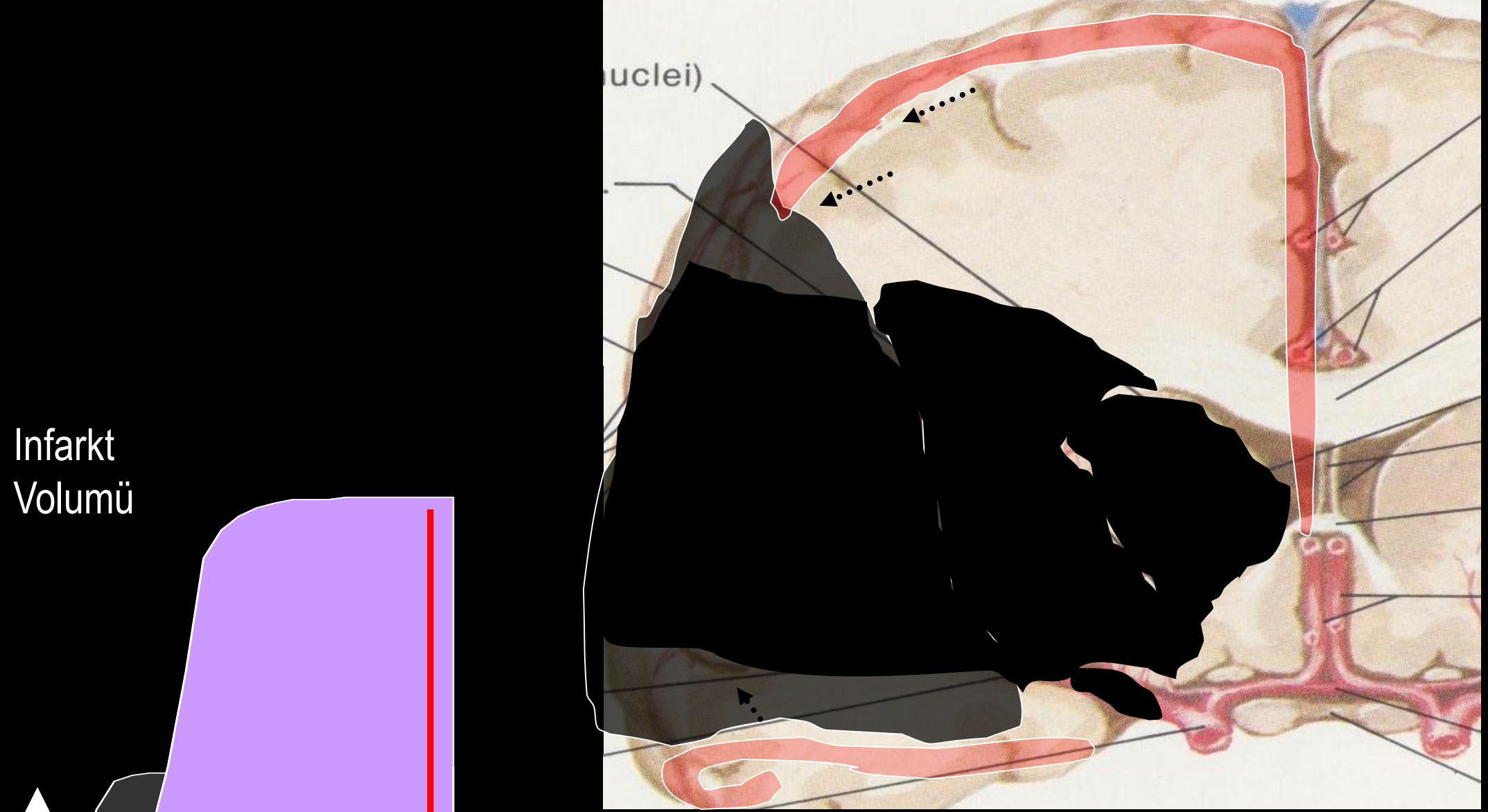
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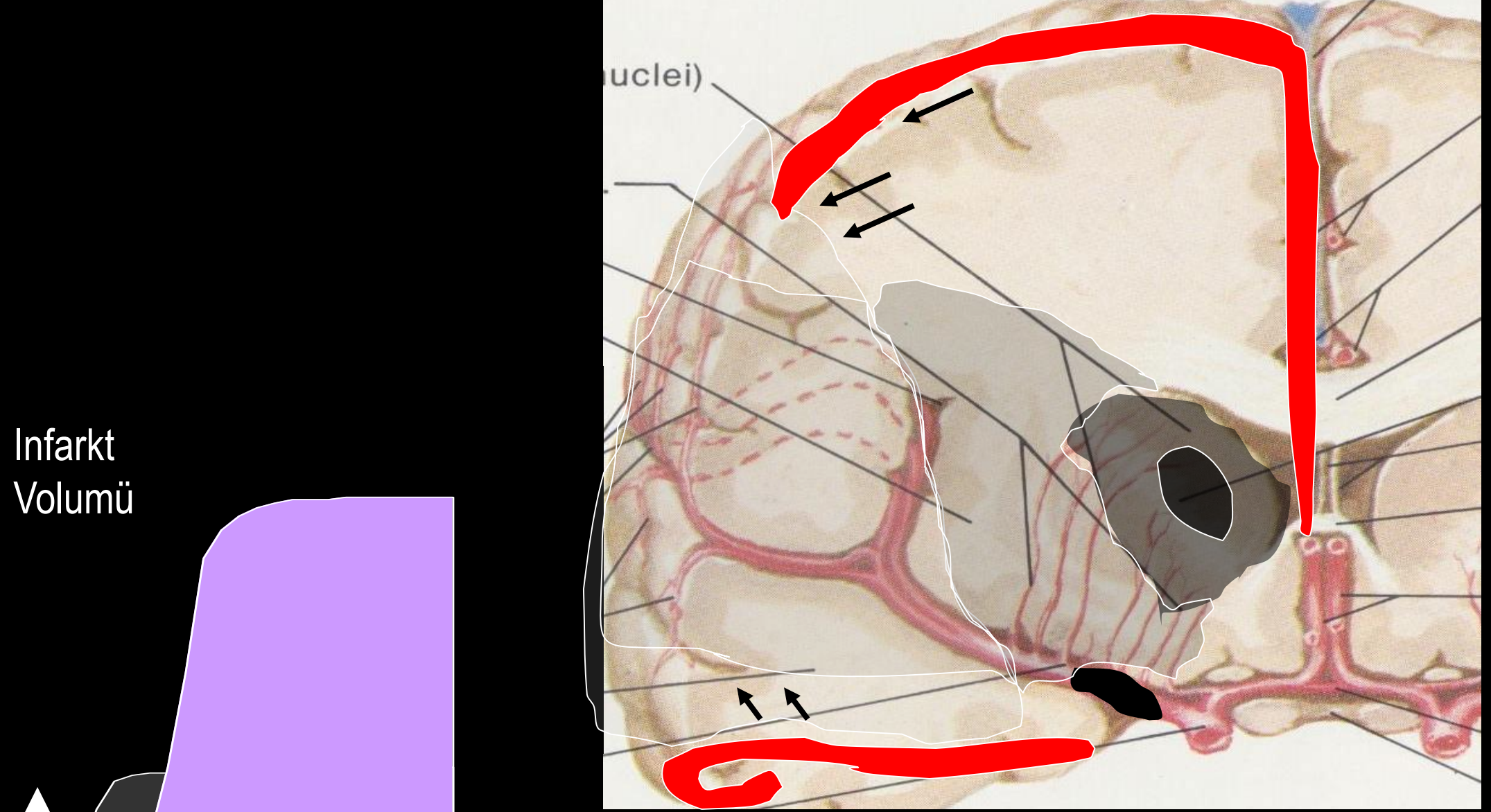
Dakika
Zaman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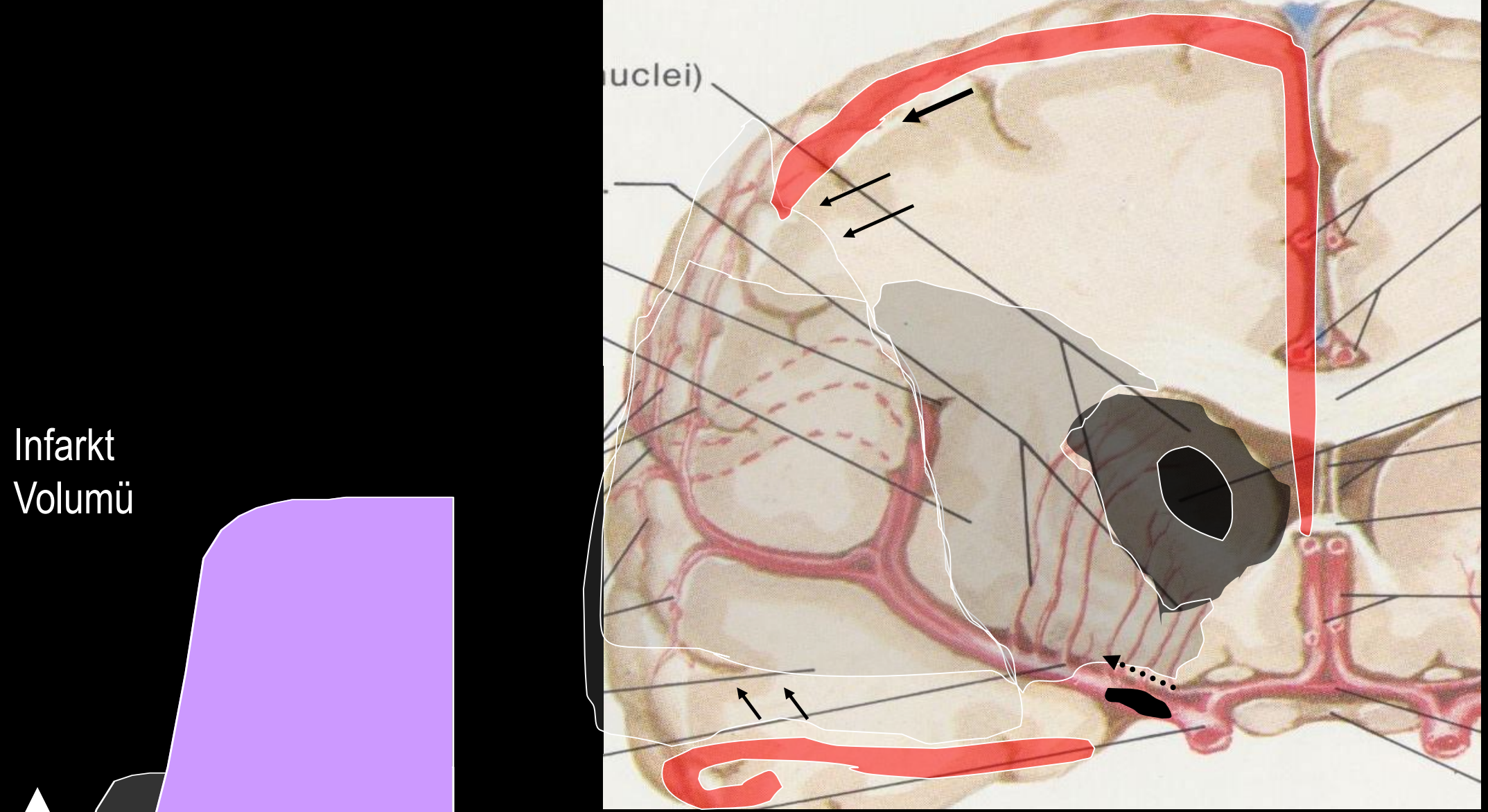
Dakika
Zaman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Volumü
0 30 60 120 180 240 360 480 720 1080 1440
Dakika
Zaman

Rekanalizasyon

Comparison: 01 Recanalization vs. Non-Recanalization
Outcome: 04 Good Outcome by Time

Study	Recanalization n/N	Non-Recanalization n/N	Peto OR (95%CI Fixed)	Weight %	Peto OR (95%CI Fixed)
01 Recanalization within 6 hours					
von Kummer 1991	8 / 12	3 / 9		2.9	3.57[0.66,19.33]
Mobius 1991	6 / 14	0 / 4		1.6	6.18[0.63,61.08]
Casto 1992	4 / 4	0 / 1		0.3	148.41[1.11,19930.37]
Endo 1998	4 / 8	0 / 13		1.7	21.94[2.46,195.80]
Lewandowski 1999	9 / 14	2 / 8		2.9	4.48[0.82,24.47]
Alexandrov 2001	15 / 43	1 / 22		5.9	5.00[1.53,16.33]
Molina 2002	11 / 17	2 / 15		4.3	[illegible]
Subtotal(95%CI)	57 / 112	8 / 72		19.7	6.36[3.32,12.17]
Test for heterogeneity chi-square=3.68 df=6 p=0.72					
Test for overall effect z=5.58 p<0.00001					

NINDS TPA Stroke Study:
Tedavi Zamanı ve İyi Outcome Odds Ratio

Zaman Beyindir !!!

Odds Ratio
İyi Outcome

8
7
6
5
4
3
2
1
0

rt-PA yararlı

rt-PA yararı yok

μ

60 70 80 90 100 110 120 130 140 150 160 170 180

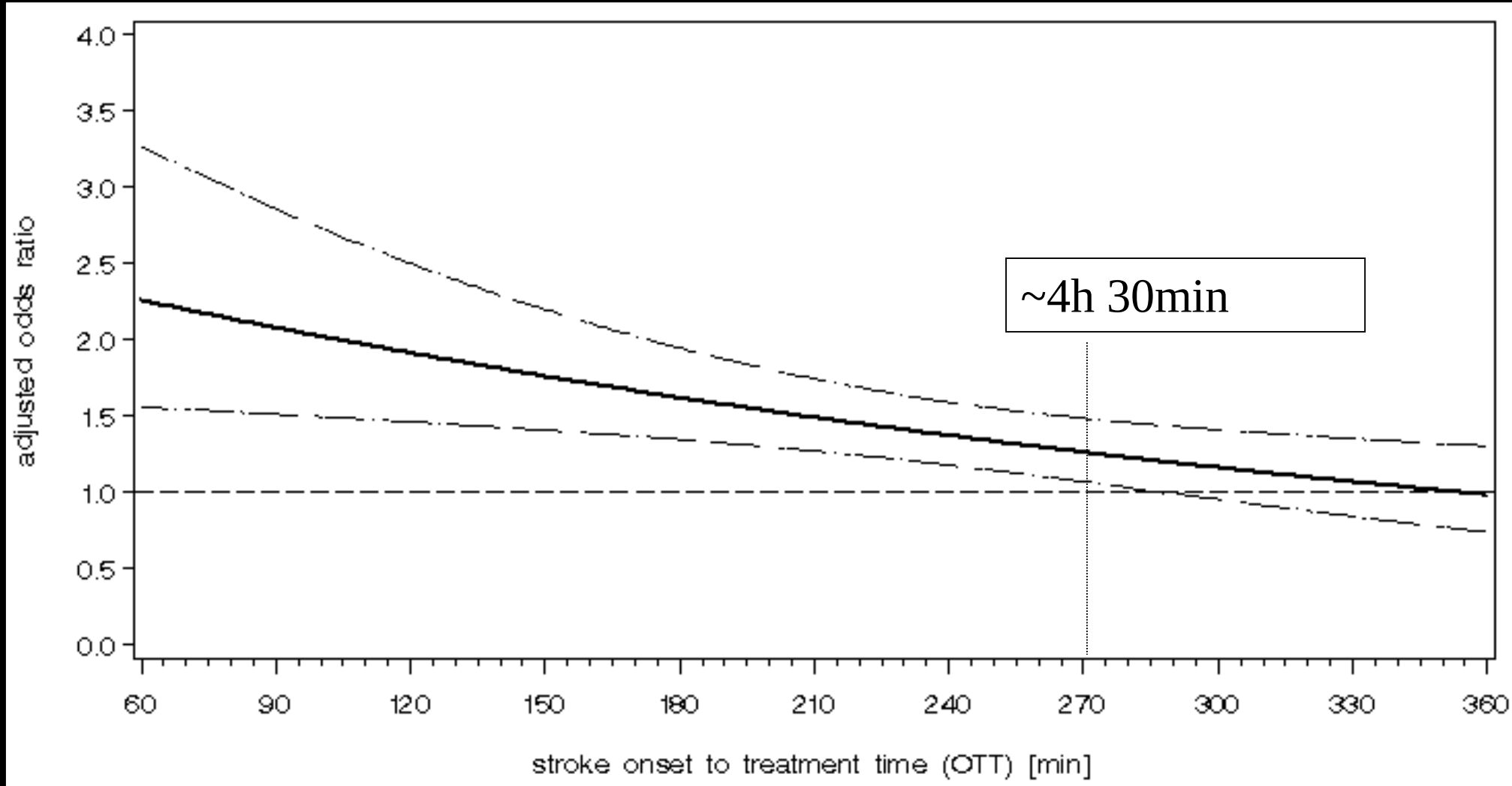
dakika

İnme-tedaviye başlama zamanı

Tedavi zamanı

Favorable Outcome (mRS 0-1, BI 95-100, NIHH 0-1) at Day 90 Adjusted odds ratio with 95% confidence interval by stroke onset to treatment time (OTT) ITT population (N=2776) Lancet 2004;363:768-774.

Pooled Analysis NINDS tPA, ATLANTIS, ECASS-I, ECASS-II



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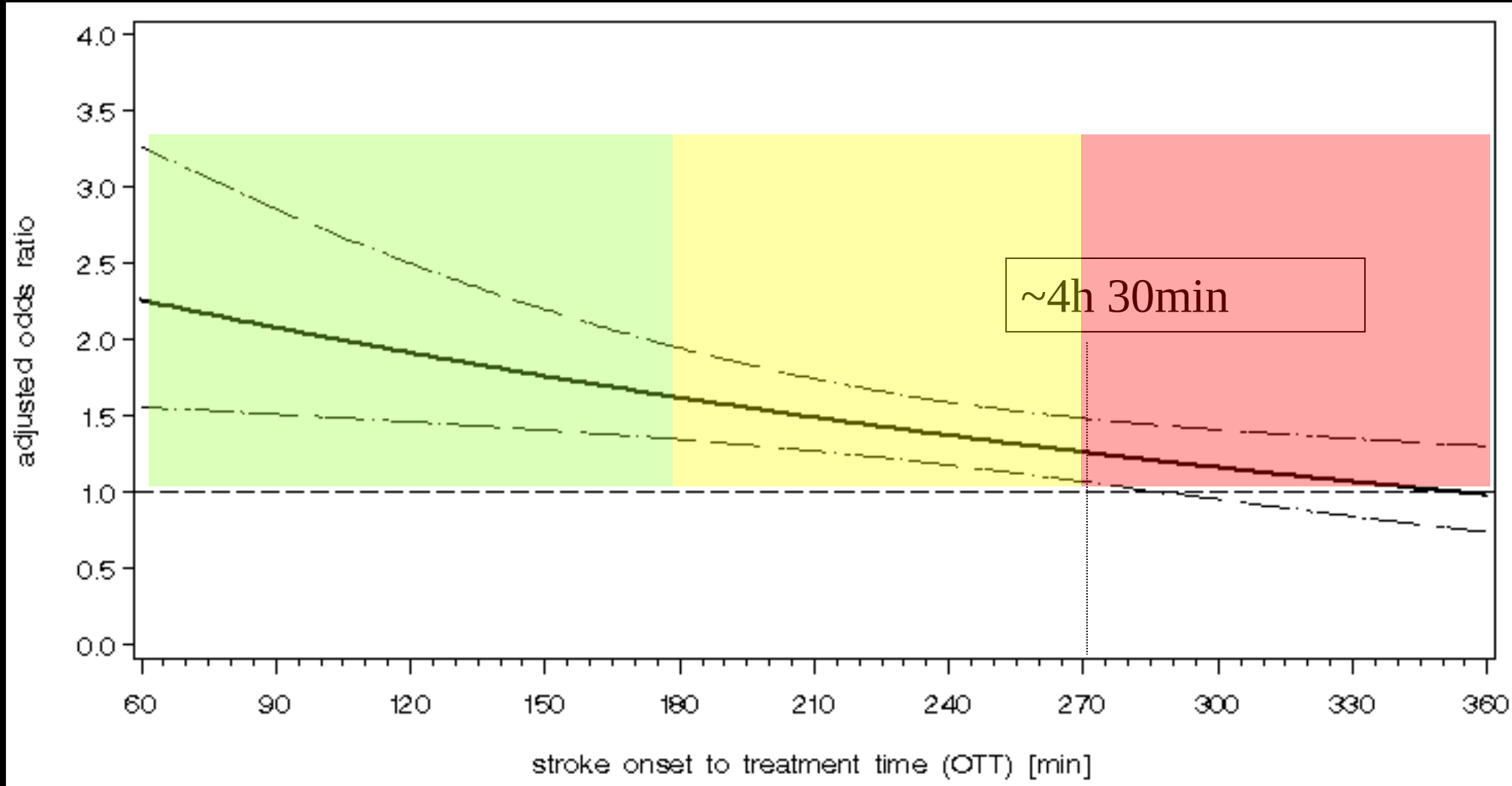
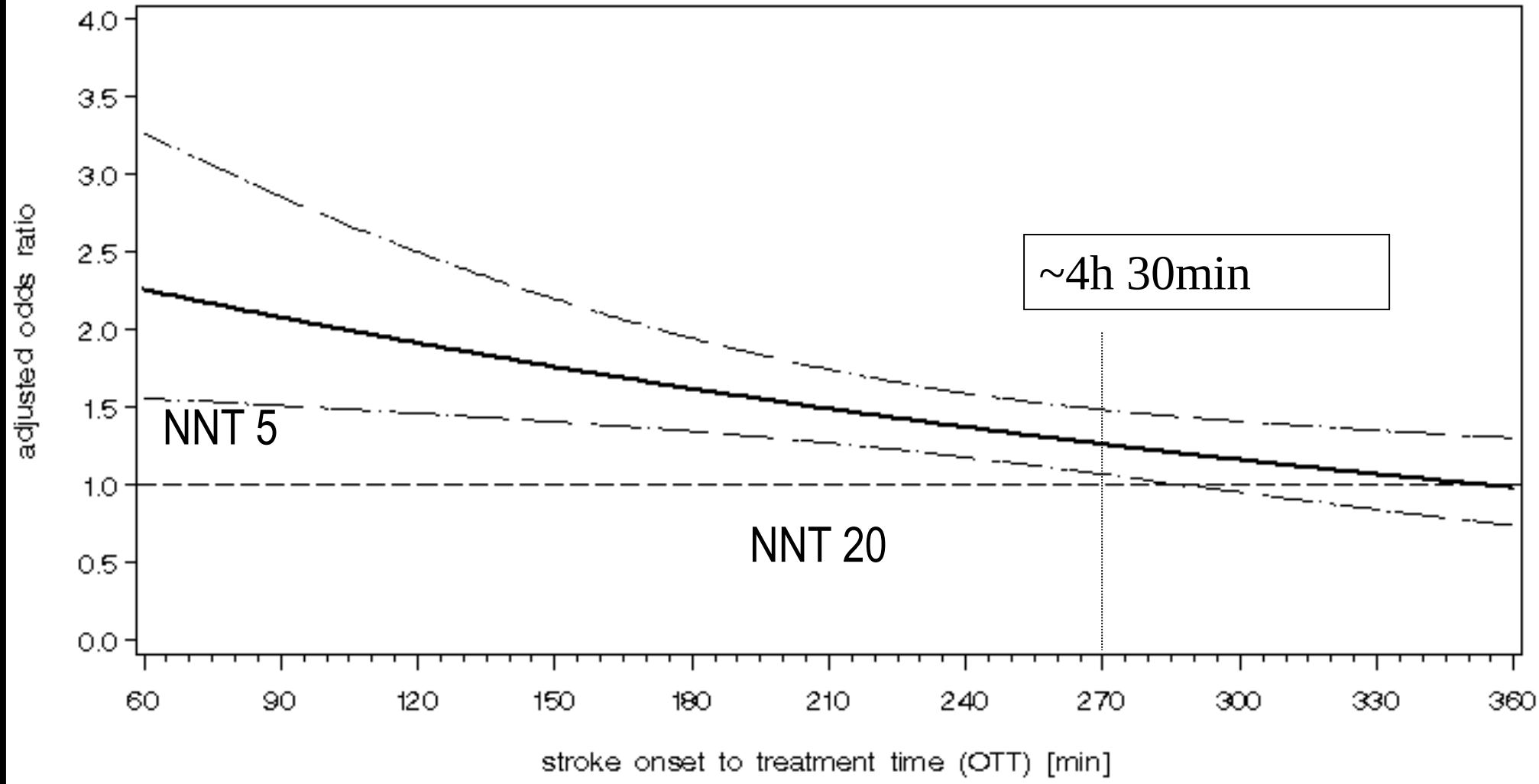


Tedavi zamanı

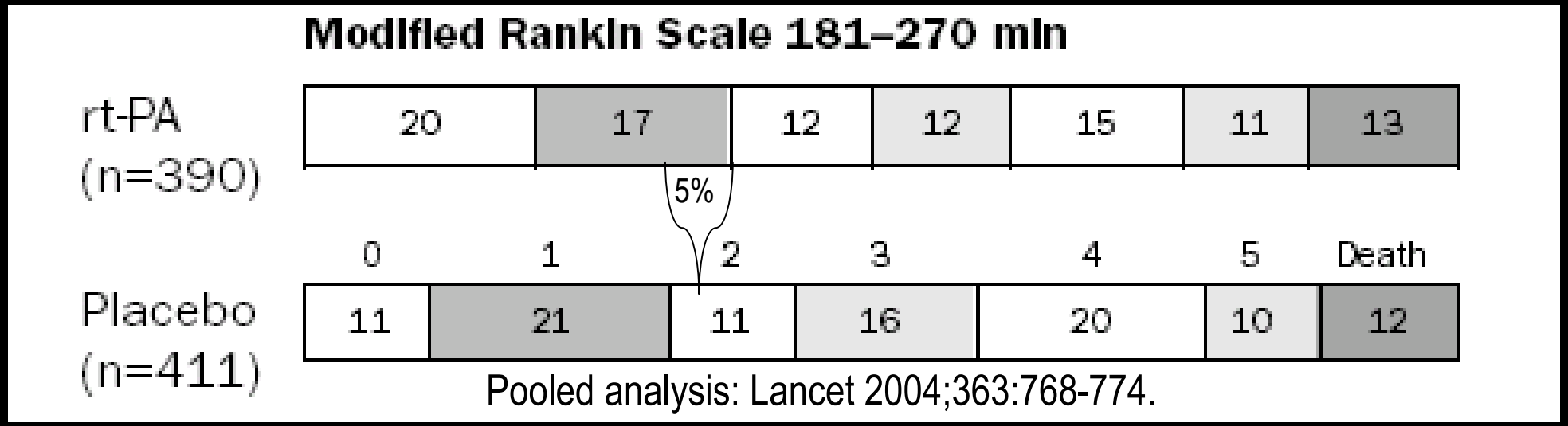
Favorable Outcome (mRS 0-1, BI 95-100, NIHH 0-1) at Day 90 Adjusted odds ratio with 95% confidence interval by stroke onset to treatment time (OTT) ITT population (N=2776)

Courtesy Brott T et al

Pooled Analysis NINDS tPA, ATLANTIS, ECASS-I, ECASS-II

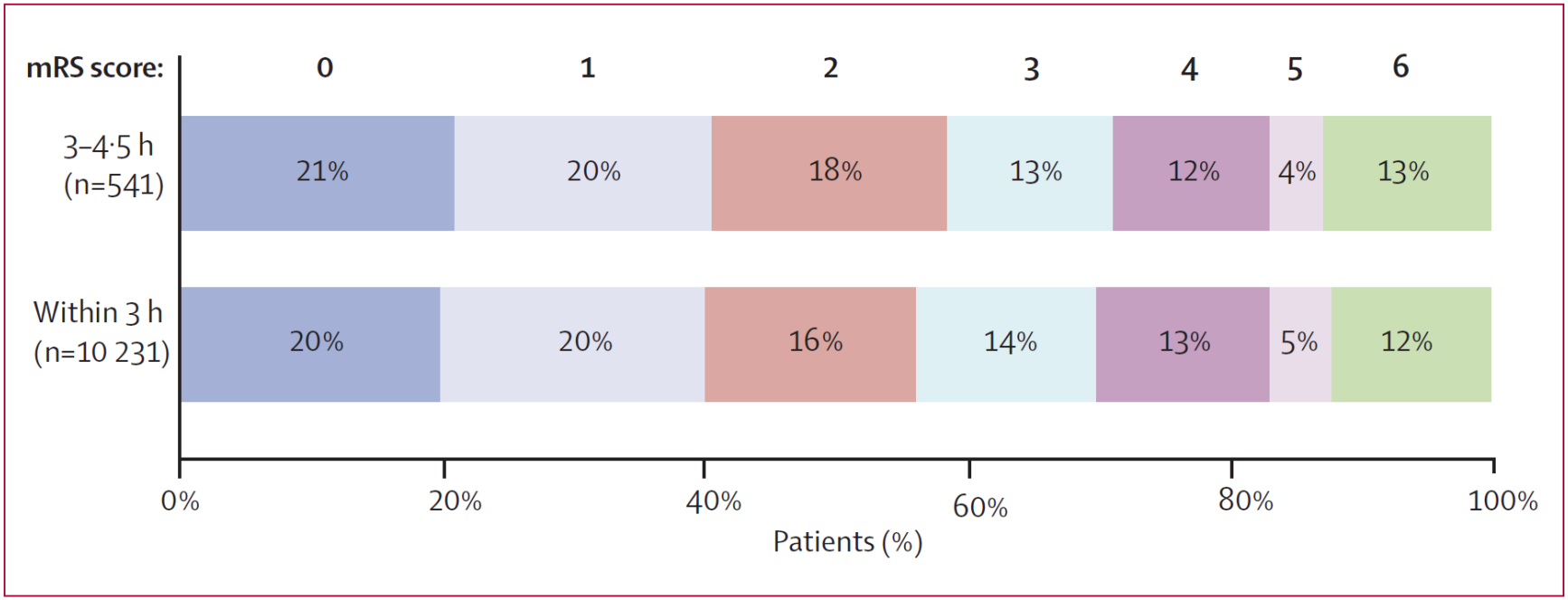


3-4.5 saat tedavi etkinliği



NNT 20

SITS ISTR 0-3 saat-3-4.5 saat karşılaştırması

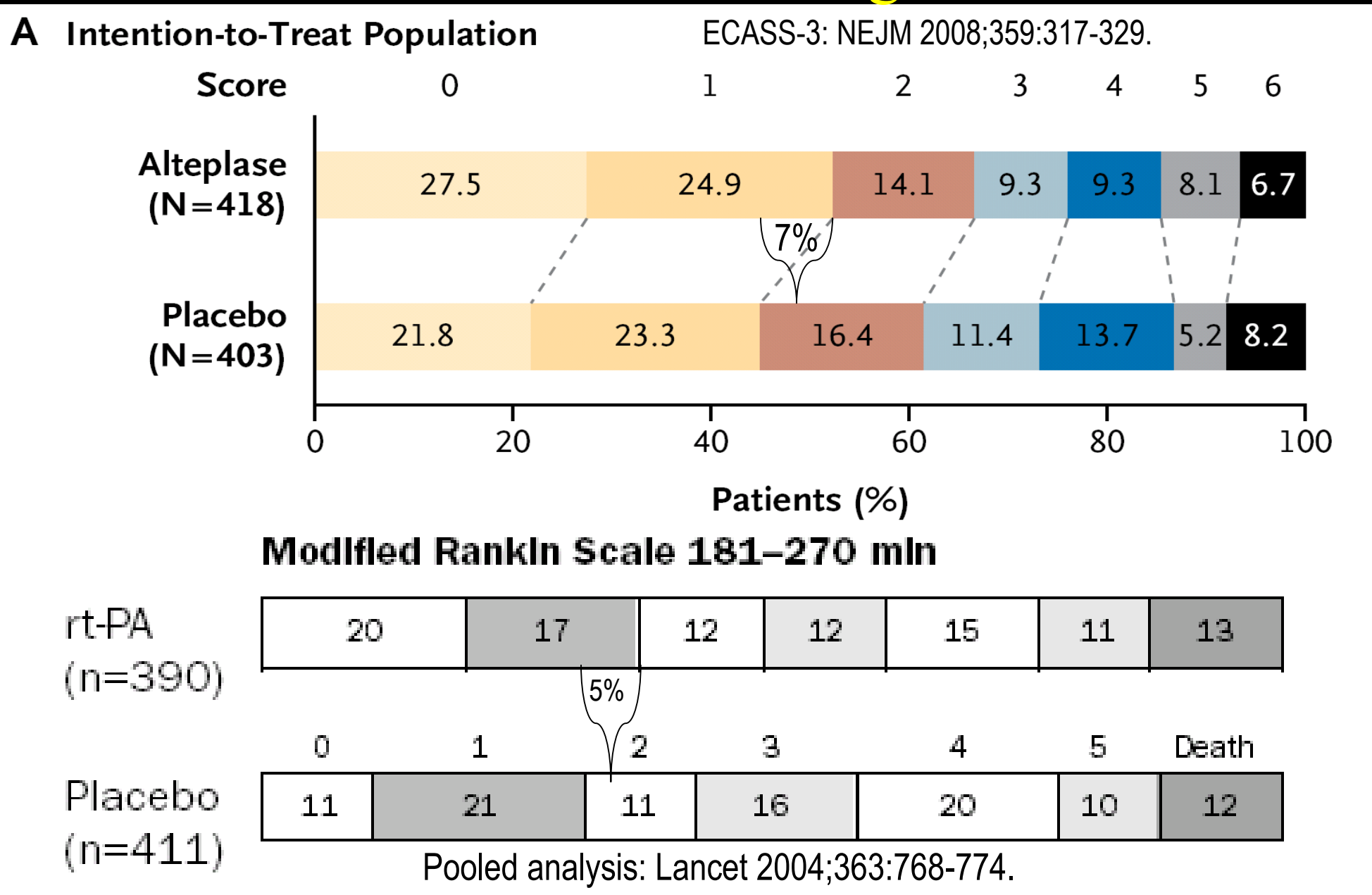


Intraserebral kanama ve tPA zamanı

Lancet 2004;363:768-774.

Interval (dak)	n	Parenkimal hematom oranları (95% CI)
0-90	161	3.1% (1.6-5.6)
91-180	302	5.6% (3.9-7.9)
181-270	390	5.9% (4.3-8.0)
270-360	538	6.9% (5.3-8.7)

3-4.5 saat tedavi etkinliği NNT 14-20

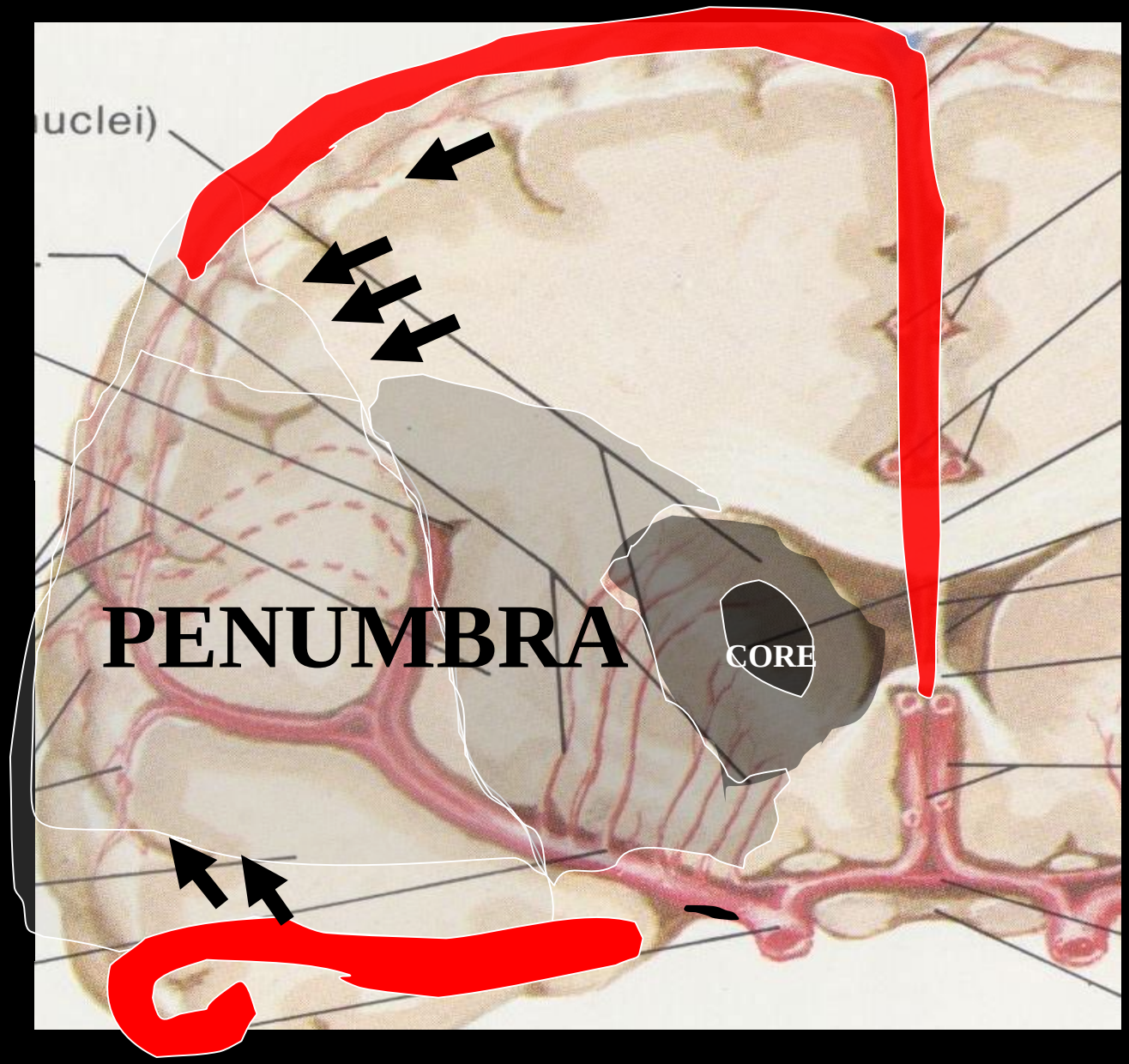


3-4.5 s Güvenlik - ECASS-3

NEJM 2008;359:317-329.

Adverse Events	Alteplase Group (N = 418)	Placebo Group (N = 403)	Odds Ratio (95% CI)	P Value
	no. (%)			
Prespecified safety end points				
Any ICH	113 (27.0)	71 (17.6)	1.73 (1.24–2.42)	0.001
Symptomatic ICH				
According to ECASS III definition†	10 (2.4)	1 (0.2)	9.85 (1.26–77.32)	0.008
According to ECASS II definition‡	22 (5.3)	9 (2.2)	2.43 (1.11–5.35)	0.02
According to SITS–MOST definition§	8 (1.9)	1 (0.2)	7.84 (0.98–63.00)	0.02
According to NINDS definition¶	33 (7.9)	14 (3.5)	2.38 (1.25–4.52)	0.006
Fatal ICH	3 (0.7)	0	—	—
Symptomatic edema	29 (6.9)	29 (7.2)	0.96 (0.56–1.64)	0.89
Death	32 (7.7)	34 (8.4)	0.90 (0.54–1.49)	0.68

	3-4·5 h	Within 3 h	Odds ratio† (95% CI)	p value
SICH (SITS-MOST definition)	14/649 (2·2%; 1·23–3·69)	183/11681 (1·6%; 1·36–1·82)	1·32 (1·00–1·75)	0·052
SICH (ECASS II definition)	34/636 (5·3%; 3·79–7·47)	553/11505 (4·8%′ 4·43–5·22)	‡	..
SICH (NINDS definition)	52/647 (8·0% 6·12–10·48)	846/11646 (7·3%; 6·8–7·75)	1·13 (0·97–1·32)	0·11
Mortality at 3 months	70/551 (12·7%; 10·1–15·8)	1263/10368 (12·2%; 11·6–12·8)	1·15 (1·00–1·33)	0·053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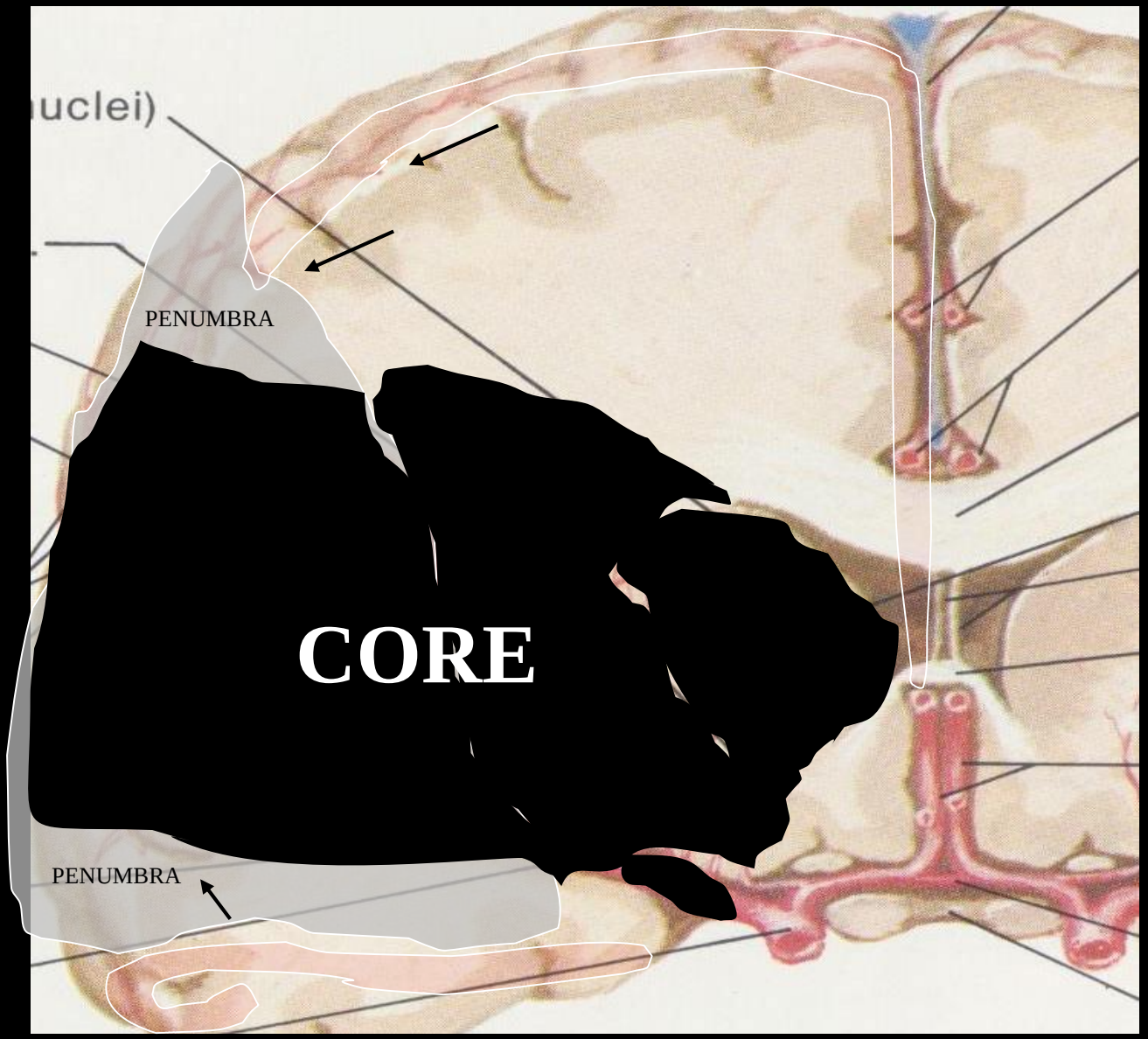
PENUMBRA
CORE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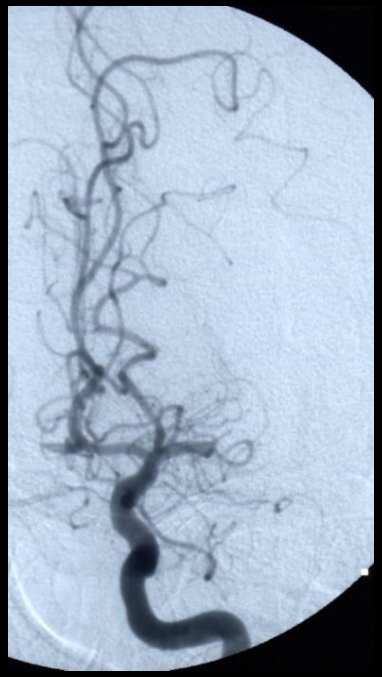
CORE
PENUMBRA

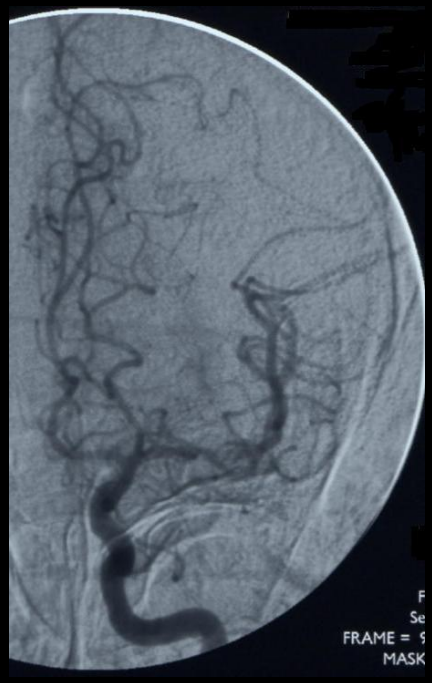
Rekanalizasyon mutlak yarar mı?

Penumbra Çalışması

n=125,



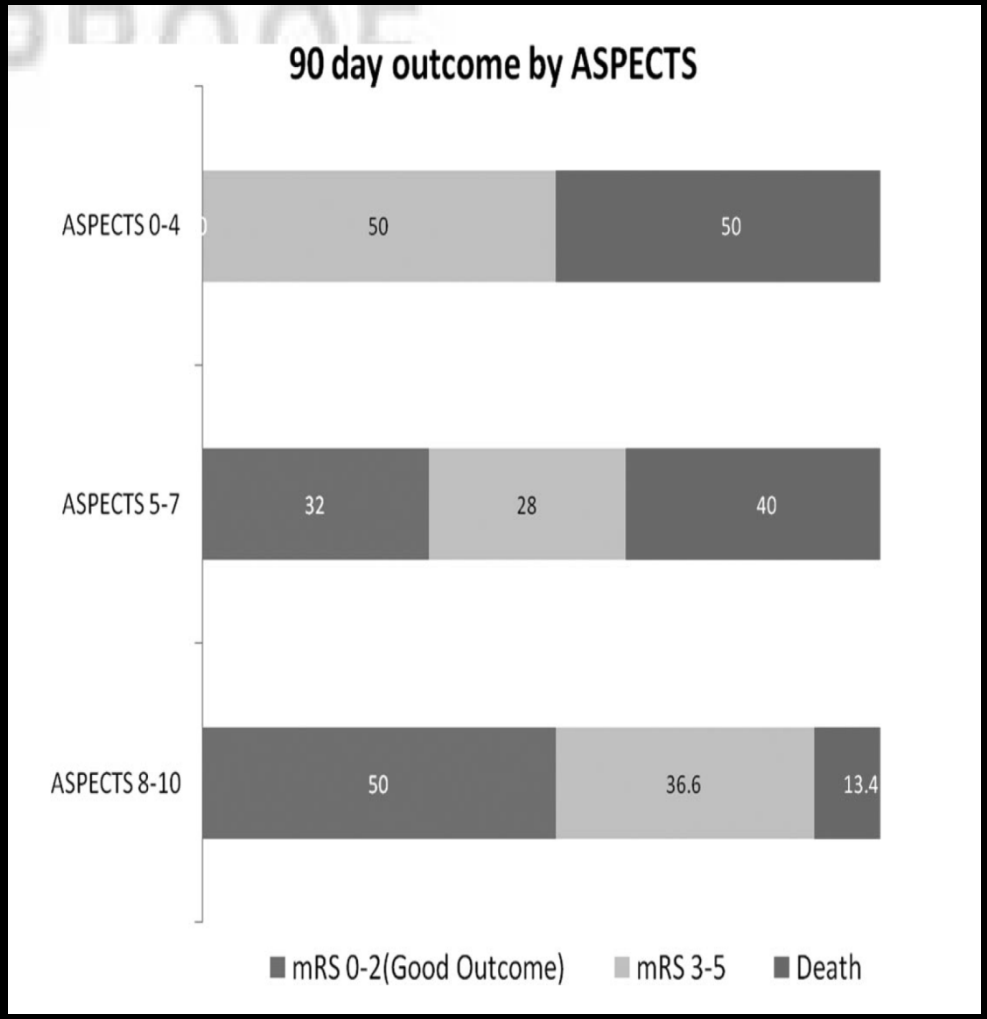
82%
TIMI 2-3



25% iyioutcome
11.2% semptomatik ICH

Effect of Baseline CT Scan Appearance and Time to Recanalization on Clinical Outcomes in Endovascular Thrombectomy of Acute Ischemic Strokes

Mayank Goyal, MD; Bijoy K. Menon, MD, DM; Shelagh B. Coutts, MD; Michael D. Hill, MD, MSc; Andrew M. Demchuk, MD; for the Penumbra Pivotal Stroke Trial Investigators, Calgary Stroke Program, and the Seaman MR Research Center



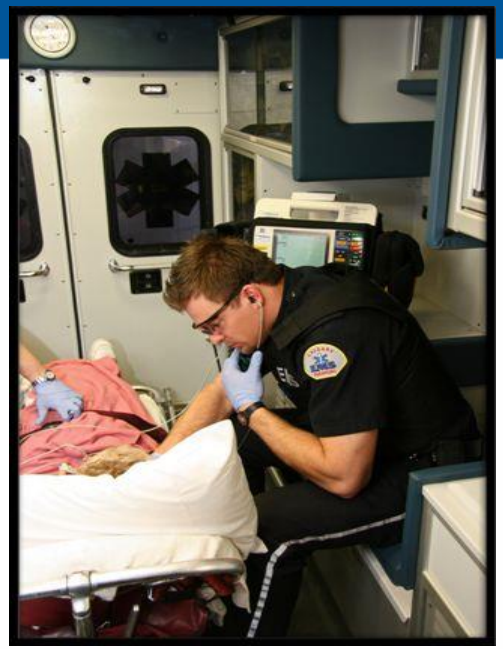
Olgu Sunumu

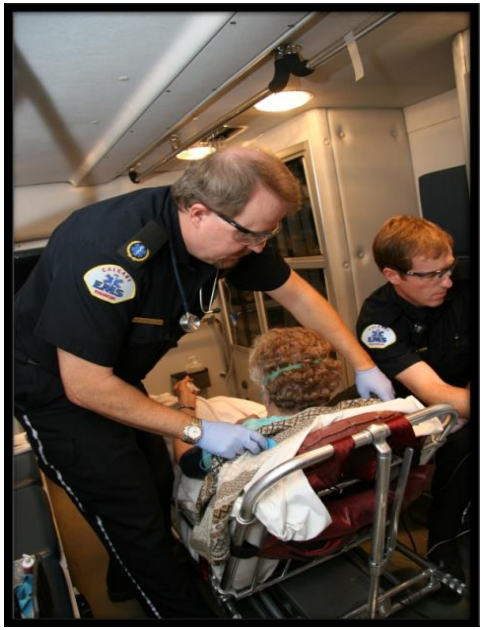
- 65 yaşında bayan
- Yere düşmüş olarak bulunmuş
- Sağ kol ve bacakta hareketsizlik
- Konuşma güçlüğü

Acil Değerlendirme

- İlk Değerlendirme
  - **Aniden Gelişen**
    - Tek taraflı kol ve bacakta güçsüzlük veya uyuşma
    - Yüzde uyuşma ve güçsüzlük
    - Konuşma Bozukluğu

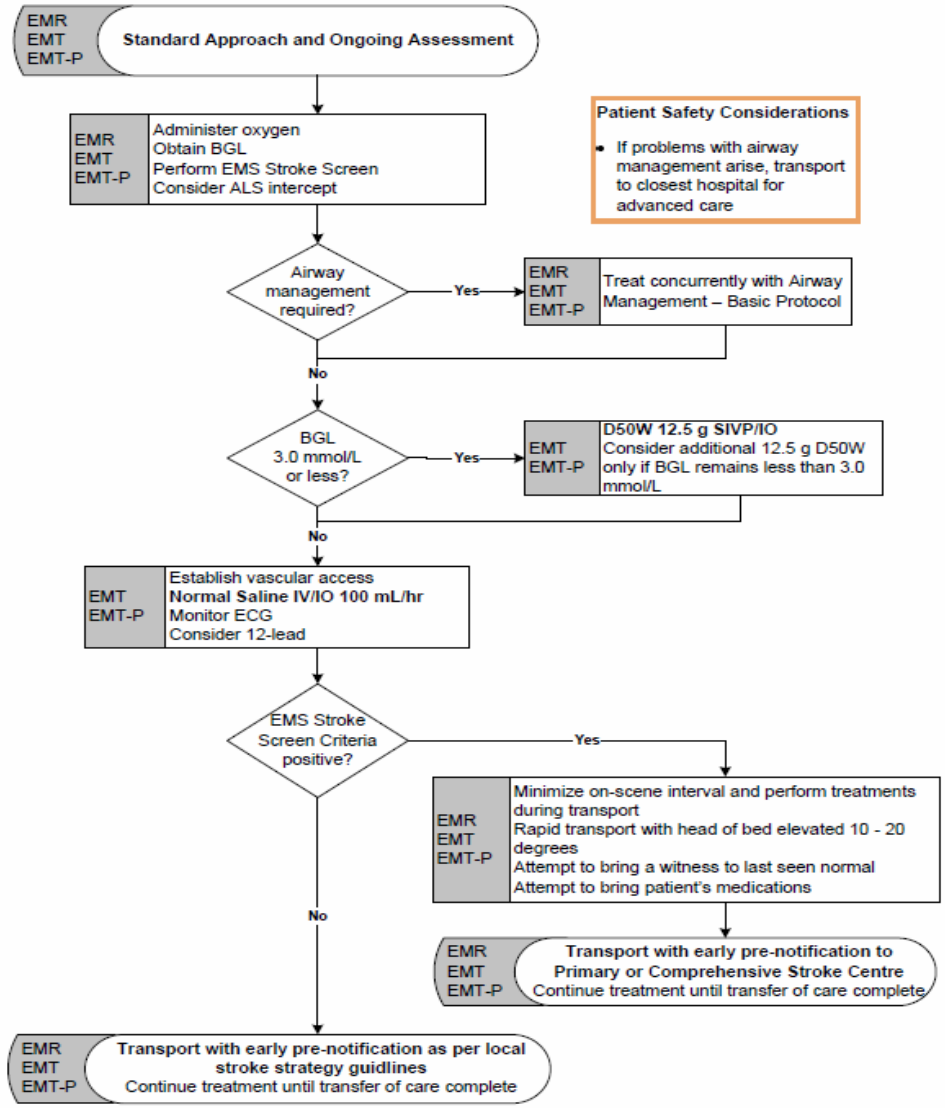
      Çift Görme veya görme bozukluğu
- Vital Bulgular
- Tıbbi Öykü
  - **Son Normal Görülme Zamanı**
  - Co-morbid Hastalıklar– Kalp Hastalığı, DM, HT
  - Risk faktörleri– sigara, obezite , alkol
  - Kanama riski – yakın zamanda kafa travması, HT, Kanama problemi
  - Neuro history – TIA, Stroke, TBI
- EKG – Atrial Fibrilasyon





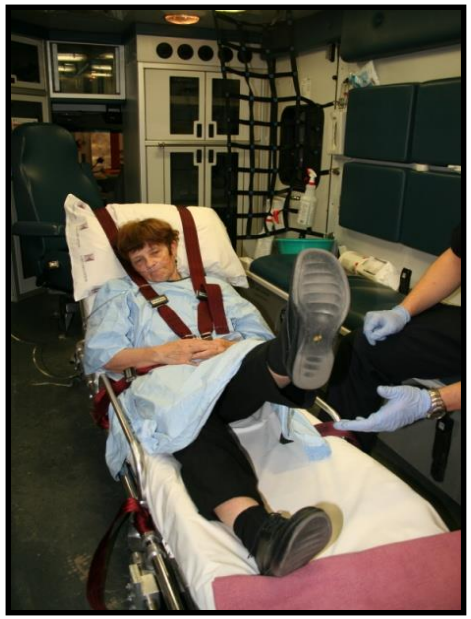
İnme Değerlendirme Protokolü

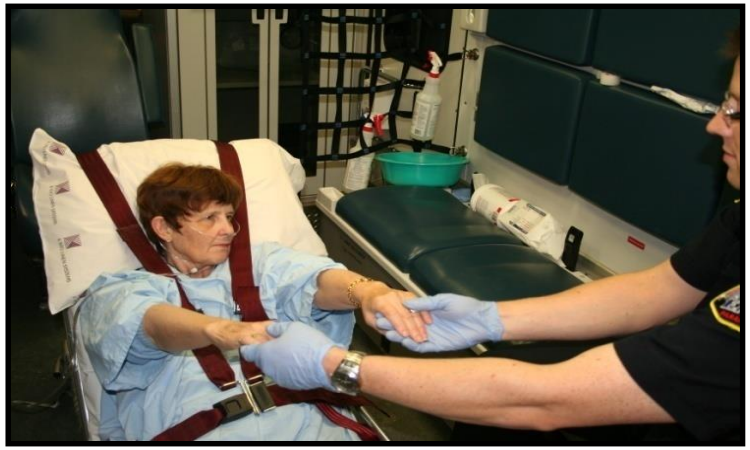
Son Normal Görülme Zamanı ?



Paramedik Değerlendirme Nörolojik

- Bilinç
  - Uyanık
  - Sözel uyaranla göz açıyor
  - Ağrılı uyaranla göz açıyor
  - Koma
- Konuşma değerlendirme - afazik anarthria dysarthria
- Fasial simetri – yüz felci?
- Kol Gücü
  - Güçsüz
  - Felç
- Bacak Gücü
  - Güçsüz veya felç
- Görme bozukluğu
- El Sıkma





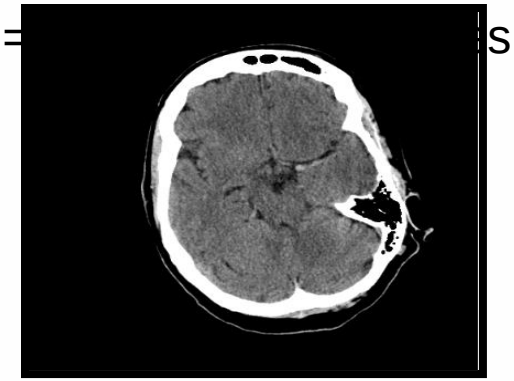
Olgu Sunumu Değerlendirme

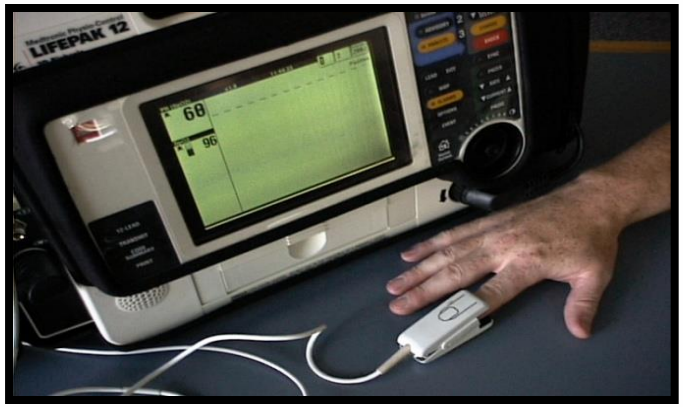
- Afazik
- Sağ kolda ağır güçsüzlük
- Sağ bacak güçsüz
- Fasial parezi
- Tıbbi Öykü
  - Çocukken kalp romatizması
  - Mitral kapak operasyonu
- İlaçlar
  - coumadin
  - ASA

İlk Müdahaleler

Airway
Oksijen – SPO2 > 95%
Pozisyon – supine baş 30 derece yukarda
IV – 100mL/hr
-dekstrozlu solüsyon kullanma

NO CT Scan
= No Thrombolytics
= No ASA
= [illegible]s





İnme merkezine ulaşım

- İskemik zamanı minimuma indir
- Tedavi Penceresi <4.5 saat
- Değerlendirme süreci <10 dakika
- Hızlı transfer (aile veya yakınları ile iletişimi kaybetme)

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“Time is Brain”

iv tPA “masadaki cevap”

“Lazarus etkisi”

ilk 3 saatte

4-5 tPA hastasında 1 hasta

30 placebo hastasında 1 hasta