HİPERTANSİYONDA HEDEF KAN BASINCI NE OLMALI?

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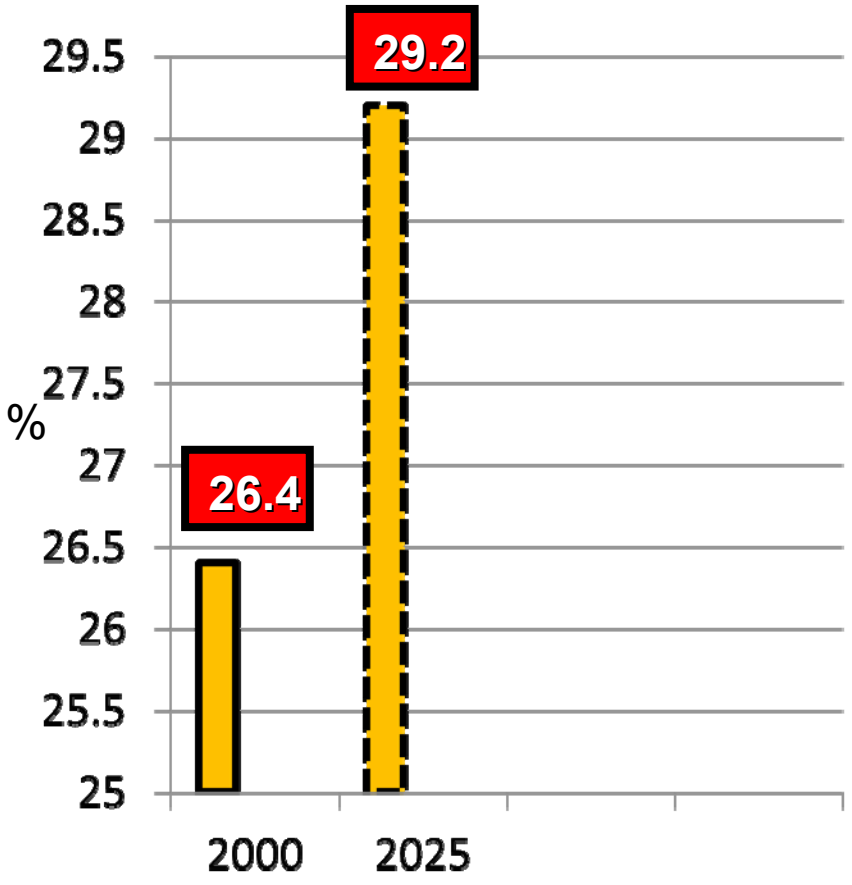
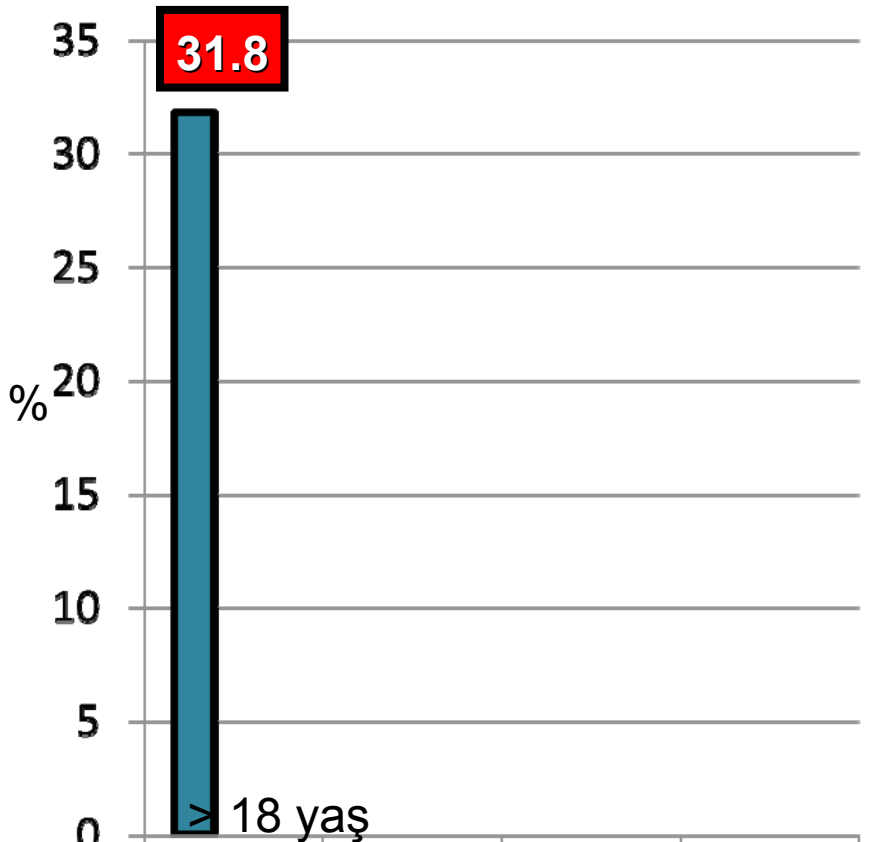
İstanbul Tıp Fakültesi
Nefroloji Bilim Dalı

Hipertansiyon Prevalansı

Dünyada



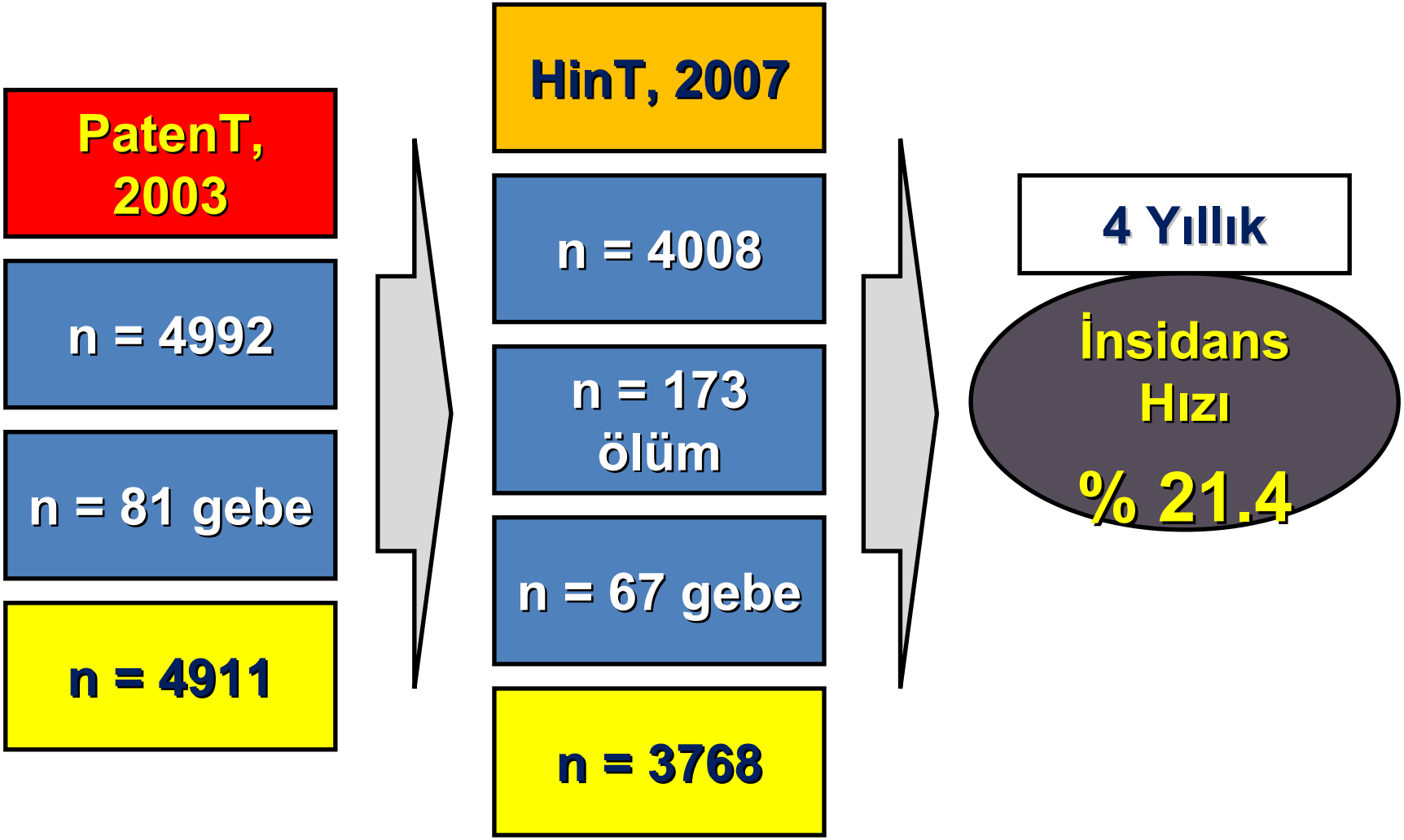
Ülkemizde



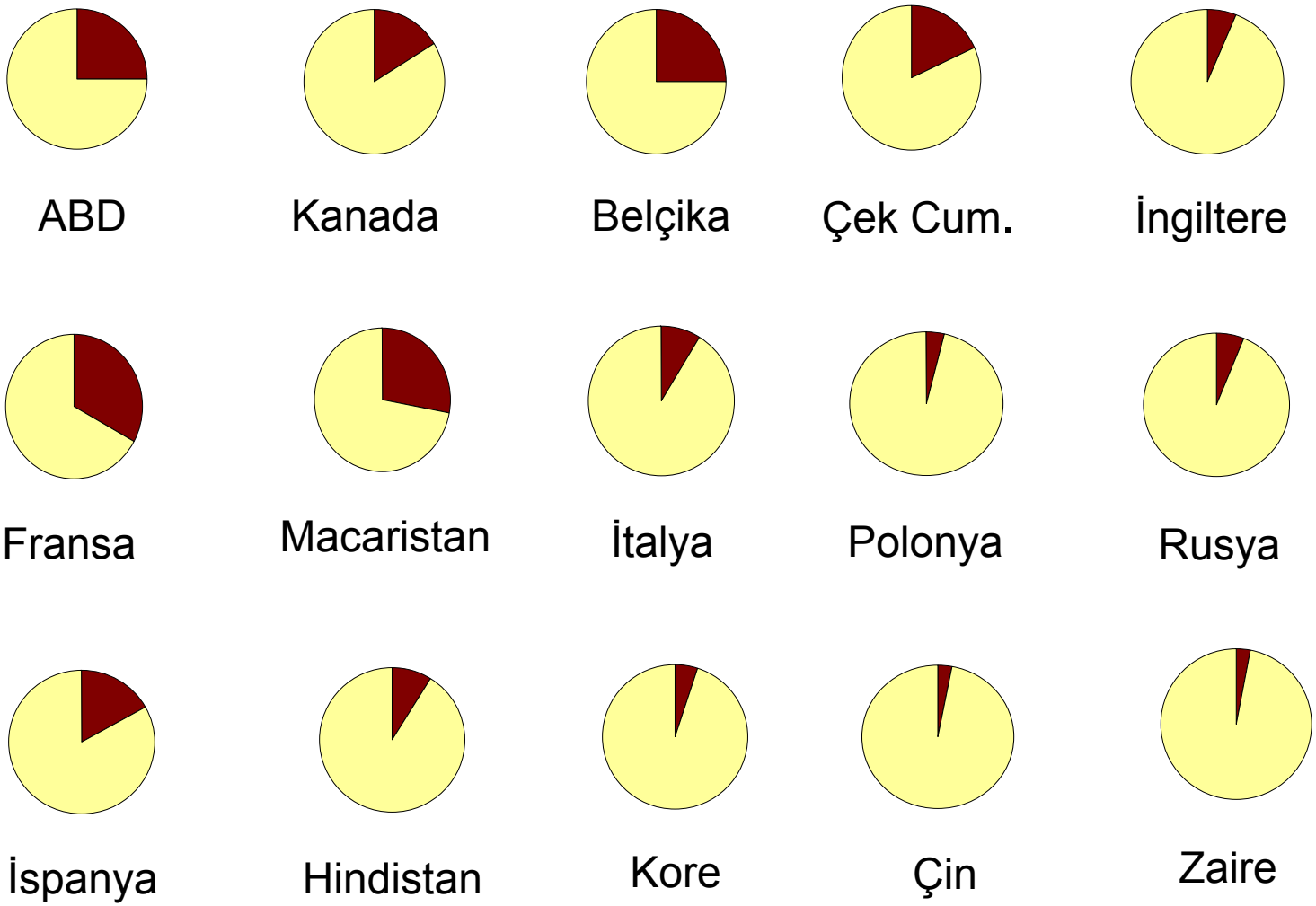
(2003) **PatenT Çalışması**, 2005

HinT Çalışması

Hypertension incidence in Turkey



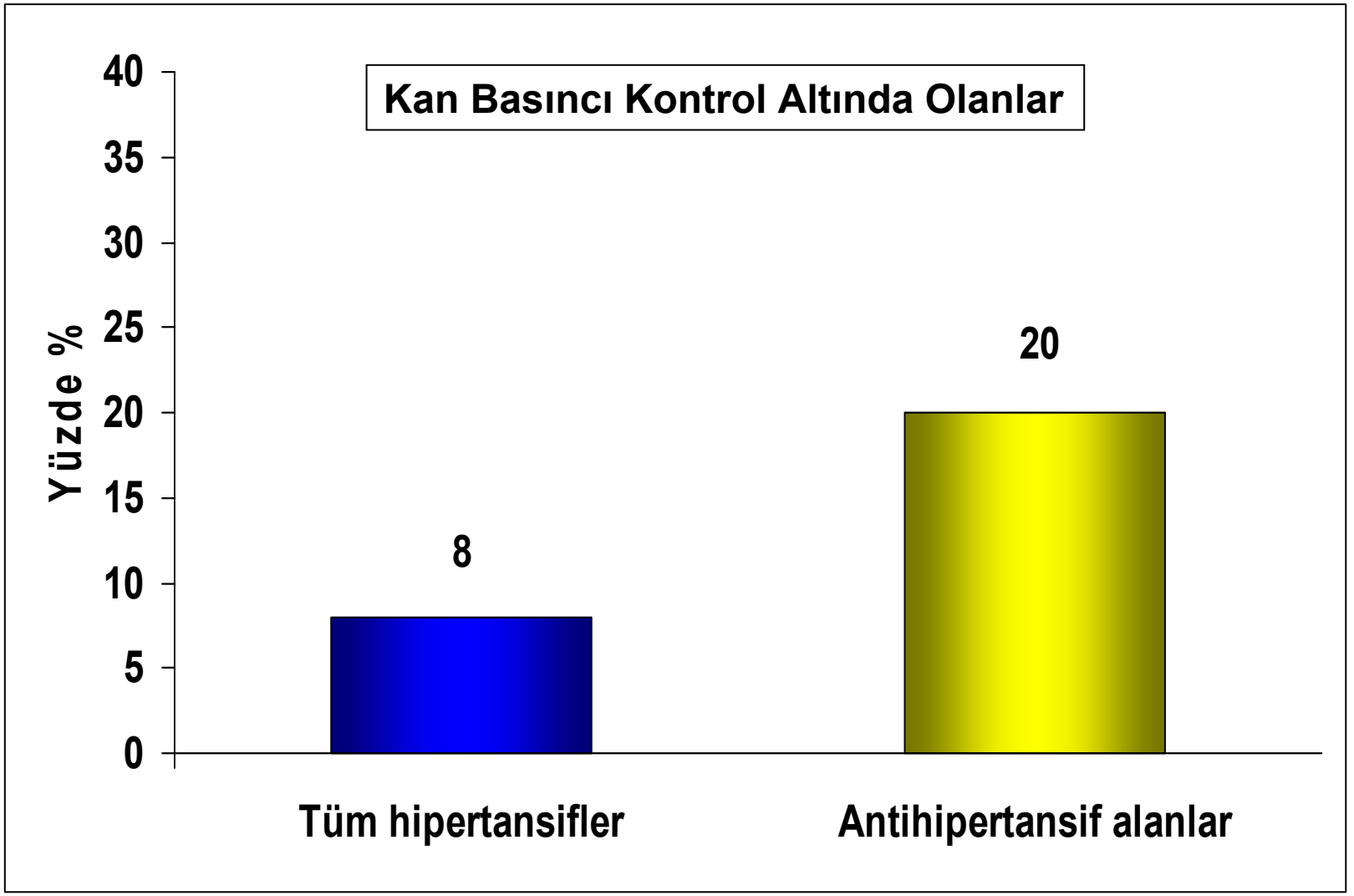
Hipertansif Hastalarda Kan Basıncı Kontrol Oranları



Erdine S. ESH Newsletter, 2000

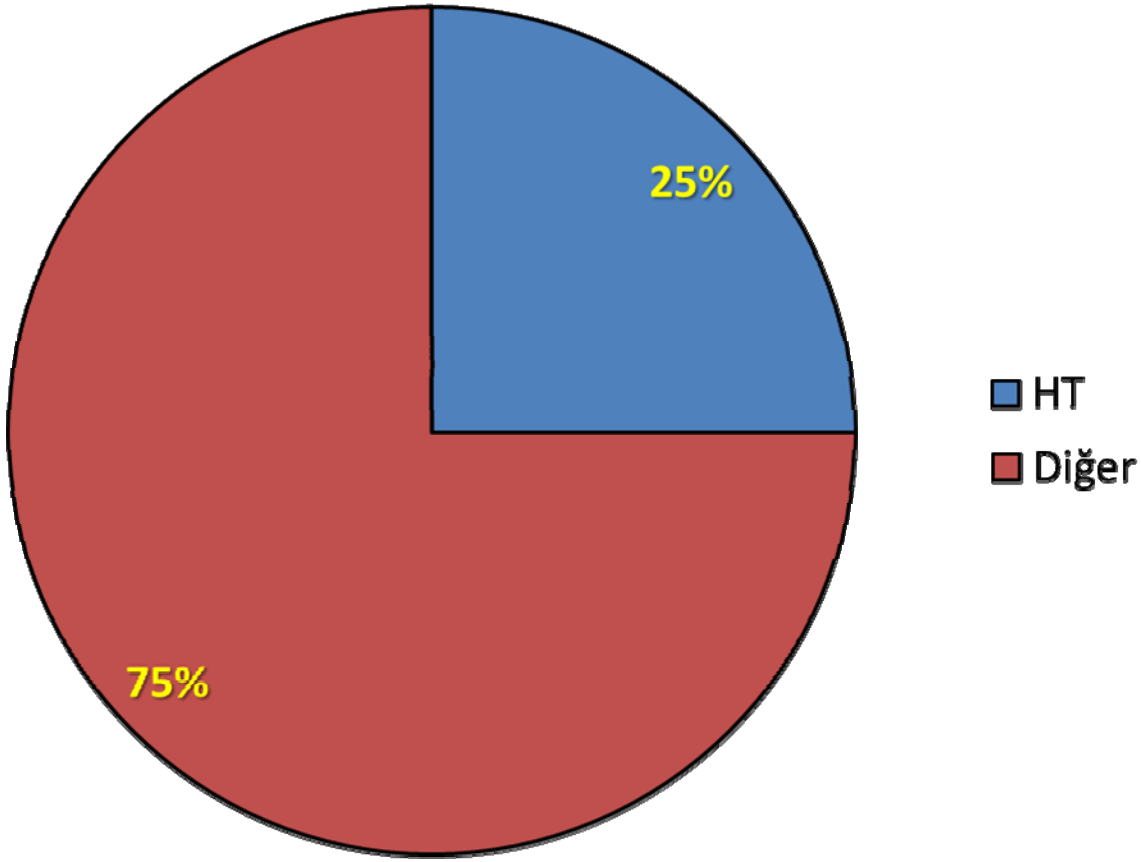
PatenT (2003)

Prevalence, awareness, treatment and control of hypertension in Turkey

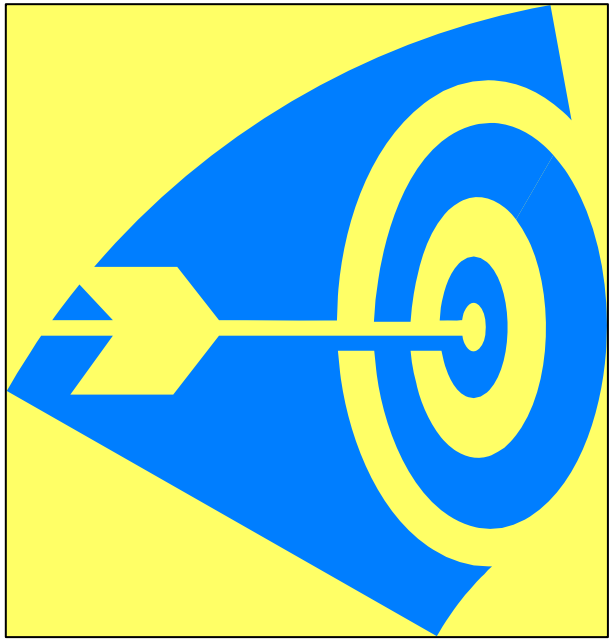


Altun B, Arıcı M, et al. J Hypertension, 2005

Türkiye'de Ölüm Nedenleri



Türkiye'nin Sağlık Yükü Çalışması, 2004



Kan Basıncı ?

2007 Guidelines for the Management of Arterial Hypertension (ESH – ESC)

Kan Basıncı Düzeylerine İlişkin Tanımlar ve Sınıflandırma

Kategori	Sistolik (mm Hg)	Diyastolik (mm Hg)
Optimum	< 120	< 80
Normal	120-129	80-84
Yüksek normal	130-139	85-89
Evre 1 hipertansiyon	140-159	90-99
Evre 2 hipertansiyon	160-179	100-109
Evre 3 hipertansiyon	≥ 180	≥ 110
İzole sistolik hipertansiyon	≥ 140	< 90

Prehipertansiyon (JNC 7)

Evre 2 hipertansiyon (JNC 7)

Diyastolik kan basıncının düşük olması
(ör: 60 – 70 mm Hg) ek bir risk olarak kabul edilmelidir.

2007 Guidelines for the Management of Arterial Hypertension: J Hypertens 25: 1105-1187, 2007

Kılavuzlar, Hedefler, Yeniden Değerlendirmeler….

Guidelines

2007 Guidelines for the Management of Arteri

The Task Force for the Management of Arterial … the European Society of Hypertension (ESH) and … Society of Cardiology (ESC)

Authors/Task Force Members: Giuseppe Mancia (Co-Chairperso… (Co-Chairperson), Anna Dominiczak, Renata Cifkova, Robert Fag… Germano, Guido Grassi, Anthony M. Heagerty, Sverre E. Kjeldse… Krzysztof Narkiewicz, Luis Ruilope, Andrzej Rynkiewicz, Roland … Harry A.J. Struijker Boudier, Alberto Zanchetti

ESC Committee for Practice Guidelines (CPG): Alec Vahanian, Chairperson (F… Kingdom), Raffaele De Caterina (Italy), Veronica Dean (France), Kenneth Dickstein (N… (Greece), Christian Funck-Brentano (France), Irene Hellemans (Netherlands), Steen Dalb… McGregor (France), Udo Sechtem (Germany), Sigmund Silber (Germany), Michal Tend… (Czech Republic), José Luis Zamorano (Spain)

ESH Scientific Council: Sverre E. Kjeldsen, President (Norway), Serap Erdine, Vice… Narkiewicz, Secretary (Poland), Wolfgang Kiowski, Treasurer (Switzerland), Enrico Agab… sioni (Italy), Renata Cifkova (Czech Republic), Anna Dominiczak (United Kingdom), Robe… M. Heagerty, Stephane Laurent (France), Lars H. Lindholm (Sweden), Giuseppe Manc… (Greece), Peter M. Nilsson (Sweden), Josep Redon (Spain), Roland E. Schmieder (G… Boudier (The Netherlands), Margus Viigimaa (Estonia)

Document Reviewers: Gerasimos Filippatos (CPG Review Coordinator) (Greece), Sta… Enrico Agabiti-Rosei (Italy), Ettore Ambrosioni (Italy), Vicente Bertomeu (Spain), Denis Cle… (Turkey), Csaba Farsang (Hungary), Dan Gaita (Romania), Wolfgang Kiowski (Switzerl… Michel Mallion (France), Athanasios J. Manolis (Greece), Peter M. Nilsson (Sweden), … Ponikowski (Poland), Josep Redon (Spain), Frank Ruschitzka (Switzerland), Juan Tamarg… (Netherlands), Margus Viigimaa (Estonia), Bernard Waeber (Switzerland), Bryan Willia… (Spain).

Journal of Hypertension 2007, **25**:1105–1187

The affiliations of Task Force members are listed in the Appendix. Their Disclosure forms are available on the respective joi…

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Reappraisal of European guidelines on hypertension management: a European Society of Hypertension Task Force document

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Journal of Hypertension 2009, 27:2121–2158

Keywords: antihypertensive treatment, cardiovascular risk, guidelines, hypertension, organ damage

Abbreviations: ACE, angiotensin-converting enzyme; BP, blood pressure; DBP, diastolic blood pressure; eGFR, estimated glomerular filtration rate; ESC, European Society of Cardiology; ESH, European Society of Hypertension; ET, endothelin; IMT, carotid intima-media thickness; JNC, Joint National Committee; LVH, left ventricular hypertrophy; LVM, left ventricular mass; PDE-5, phosphodiesterase-5; PPAR-γ, peroxisome proliferators-activated receptor-γ; PWV, pulse wave velocity; SBP, systolic blood pressure; WHO, World Health Organization

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Received 16 September 2009 Accepted 16 September 2009

Introduction

In the 2 years since the publication of the 2007 guidelines for the management of arterial hypertension of the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC) [1], research on hypertension has actively been pursued and the results of new important studies (including several large randomized trials of antihypertensive therapy) have been published. Some of these studies have reinforced the evidence on which the recommendations of the 2007 ESH/ESC guidelines were based. However, other studies have widened the information available in 2007, modifying some of the previous concepts, and suggesting that new evidence-based recommendations could be appropriate.

The aim of this document of the ESH is to address a number of studies on hypertension published in the last 2 years in order to assess their contribution to our expanding knowledge of hypertension. Furthermore, some critical appraisal of the current recommendations of the ESH/ESC, as well as of other guidelines, might be a useful step toward the preparation of a third version of the European guidelines in the future.

The most important conclusions are summarized in boxes. The points that will be discussed are reported in Box 1.

Antihipertansif Tedaviye Başlama Kararı

Sistolik ve Diyastolik Kan Basıncı Düzeyi

Bireysel Geçmiş ve/veya **Total KV Risk Düzeyi**

Antihipertansif tedavinin primer hedefi uzun dönem total KV morbidite ve mortalite riskini maksimum düzeyde azaltmaktır!

Yaşam Tarzı Değişiklikleri

- **Kan basıncını veya KV riski azalttığı kabul gören ve tüm hastalara uygulanması gereken yaşam tarzı değişiklikleri:**
  - ✓ **Sigaranın kullanımına son verilmesi**
  - ✓ **Kilo verilmesi (ve kilonun korunması)**
  - ✓ **Aşırı alkol tüketiminin azaltılması**
  - ✓ **Fiziksel egzersiz yapılması**
  - ✓ **Tuz alımının kısıtlanması**
  - ✓ **Meyve/sebze tüketiminin artırılması ve doymuş/total yağ tüketiminin azaltılması**

Genel Hipertansif Popülasyonda Kan Basıncı Hedefleri

- **Kan basıncı tüm hipertansif hastalarda en az 140/90 mm Hg'nin (sistolik/diyastolik) altına, eğer tolere edilebilirse daha da düşük değerlere indirilmelidir.**
- **Hedef kan basınçları diyabeti, KV hastalık öyküsü veya böbrek hastalığı olan yüksek veya çok yüksek riskli hastalarda en az <130/80 mm Hg olmalıdır.**

Kan Basıncı Kontrolü – KV Olay İlişkisi

- **HOT** *(Hypertension Optimal Treatment Study)*
  (Lancet 1998; 351:1755-1762)

- **VALUE** *(Valsartan Antihypertensive Long-term Use Evaluation Trial)*
  (J Hypertens 2009; 27(Suppl 4):S327)

- **INVEST** *(International Verapamil SR-Trandolapril Study)*
  (Hypertension 2007; 50:299-305)

- **ONTARGET** *(Ongoing Telmisartan Alone and in combination with Ramipril Global Endpoint Trial Study)*
  (J Hypertens 2009; 27:1360-1369)

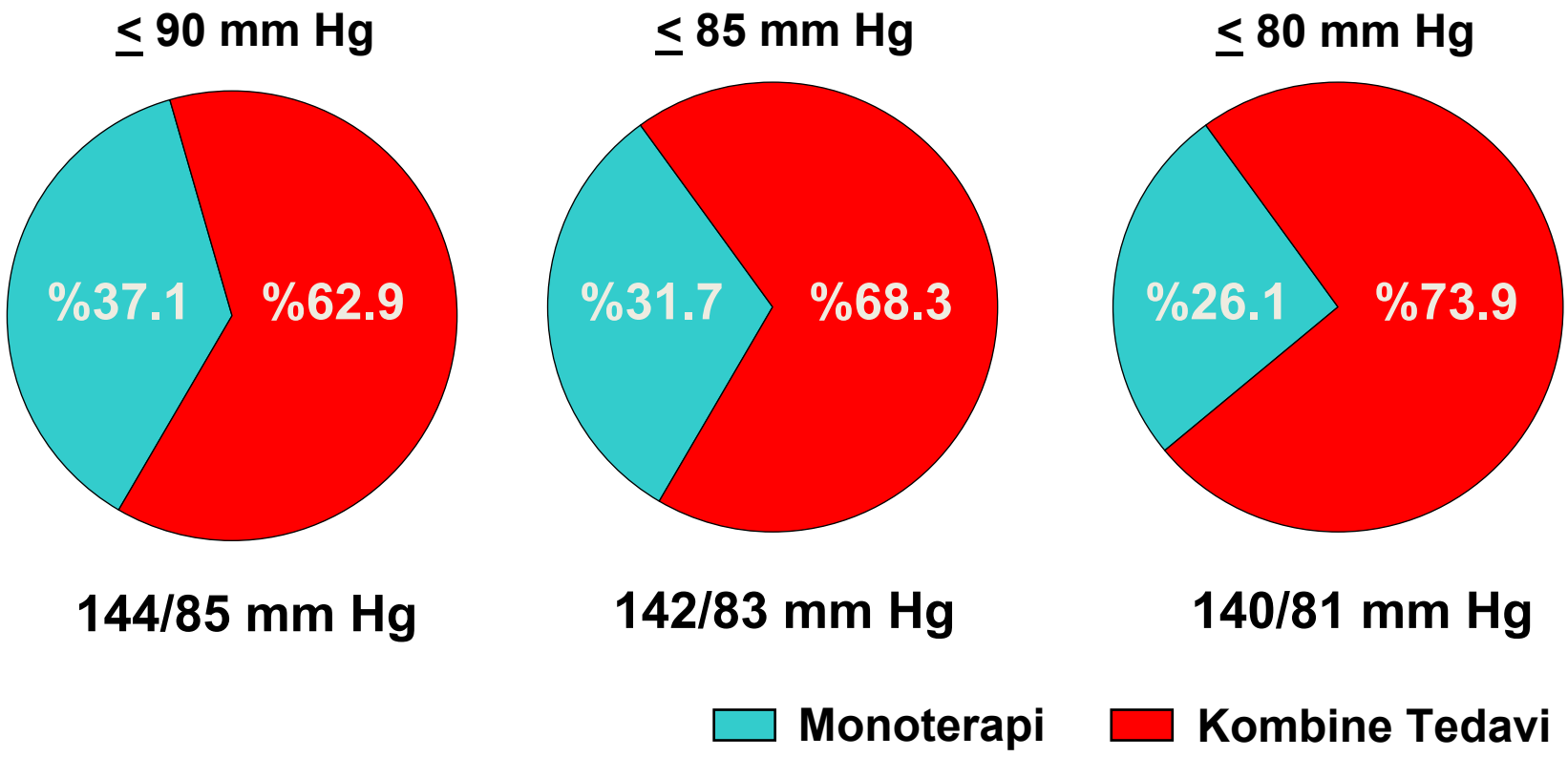
HOT ÇALIŞMASI
(Hypertension Optimal Treatment Study)

- **Hasta sayısı:** 18790 (26 ülkeden)
- **Yaş aralığı:** 50-80 (ort.: 61.5)
- **Diyastolik kan basıncı:** 100 mm Hg - 115 mm Hg (ort.: 105 mm Hg)
- **Hedef kan basınçları:**

≤90 mm Hg	≤85 mm Hg	≤80 mm Hg
n = 6264	n = 6264	n = 6262

Lancet 1998; 351:1755-1762

HOT ÇALIŞMASI
(Hypertension Optimal Treatment Study)



Lancet 1998; 351:1755-1762

HOT ÇALIŞMASI
(Hypertension Optimal Treatment Study)

Majör KV olaylar açısından en düşük insidans

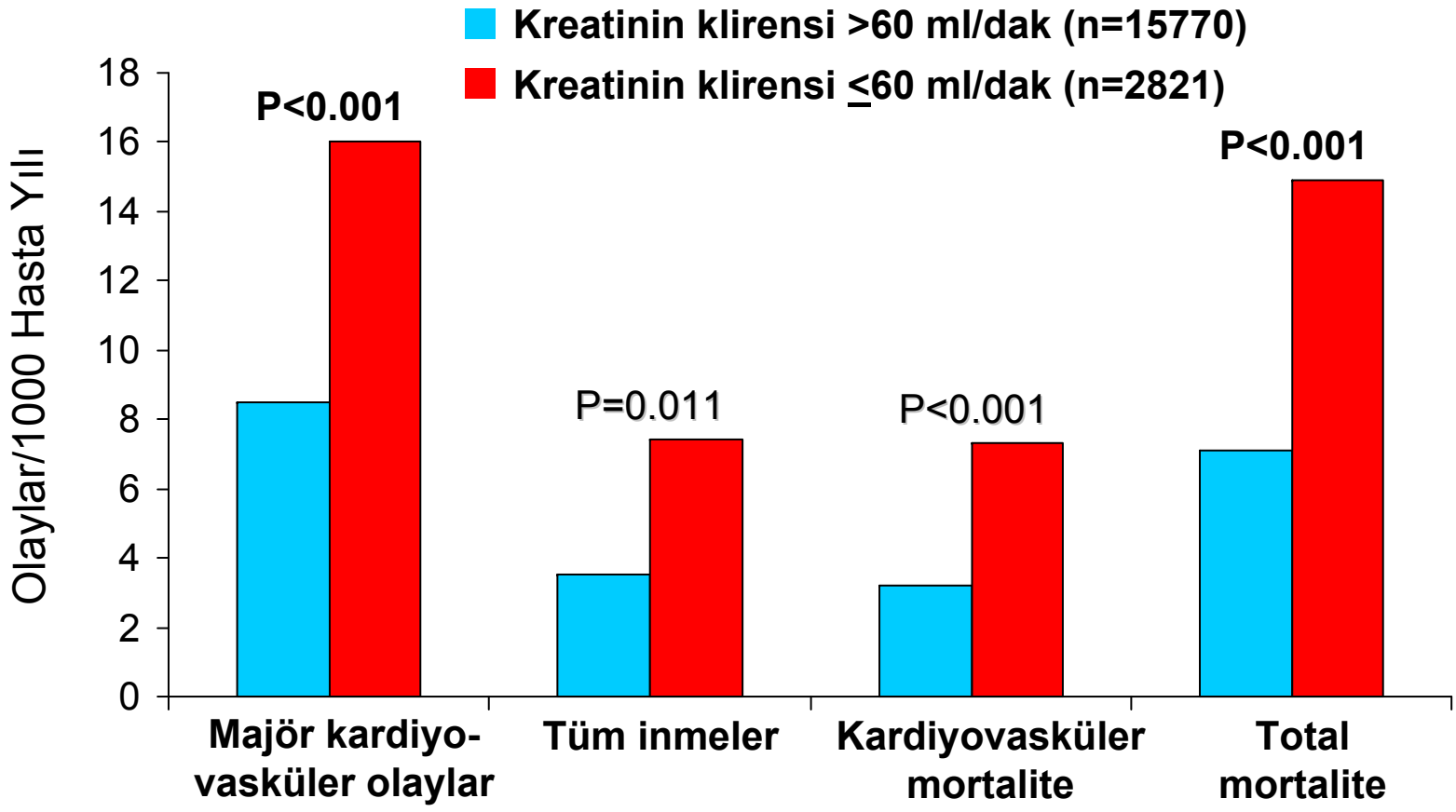
ortalama diyastolik kan basıncının 82.6 mm Hg

olduğu grupta gerçekleşti.

En düşük KV mortalite riski 86.5 mm Hg 'lik

diyastolik kan basıncı düzeyinde

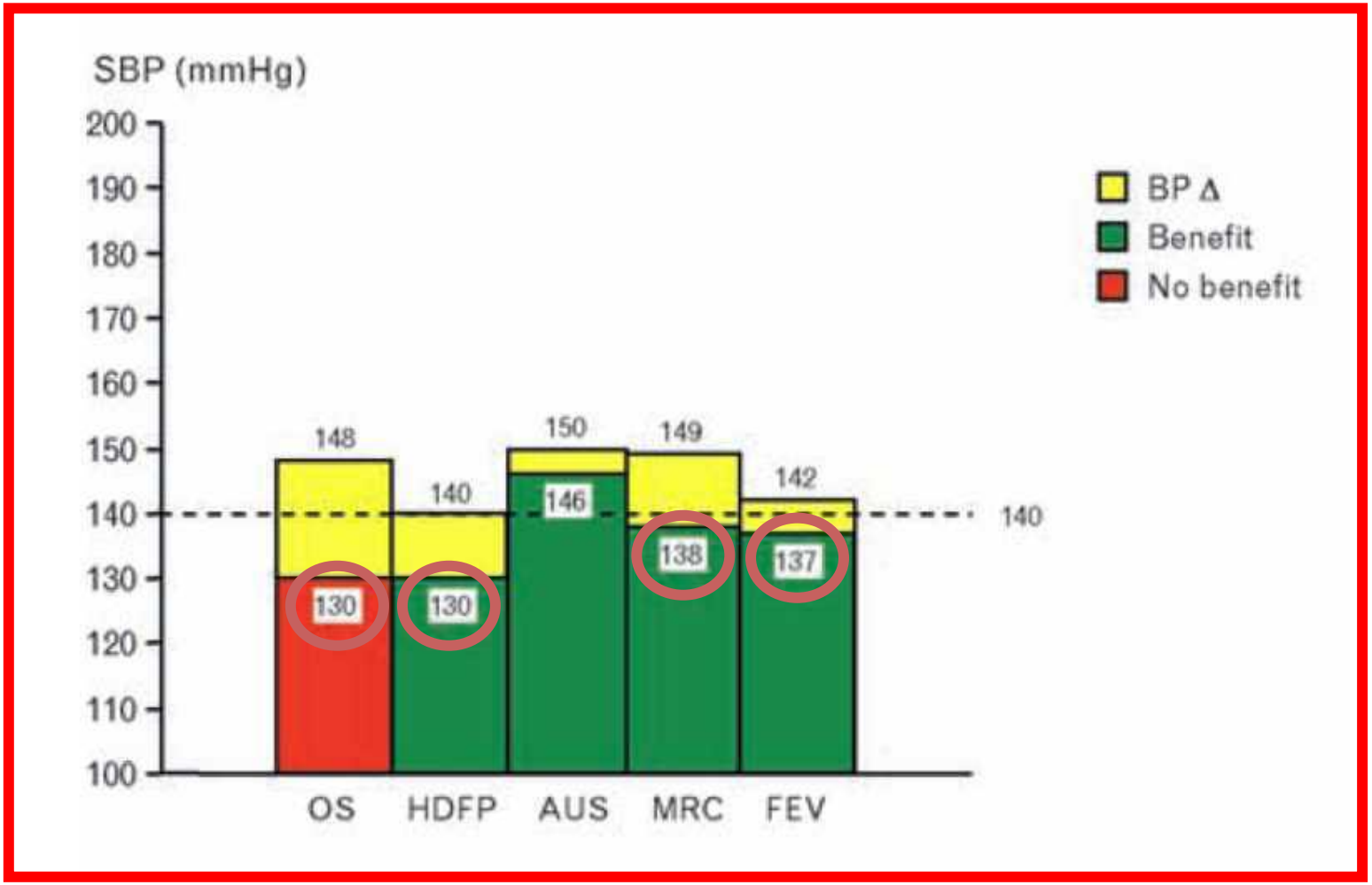
HOT ÇALIŞMASI
(Hypertension Optimal Treatment Study)



Ruilope et al: J Am Soc Nephrol 12: 218-225, 2001

Reappraisal of European Guidelines on Hypertension Management (2009)

Hipertansiyon

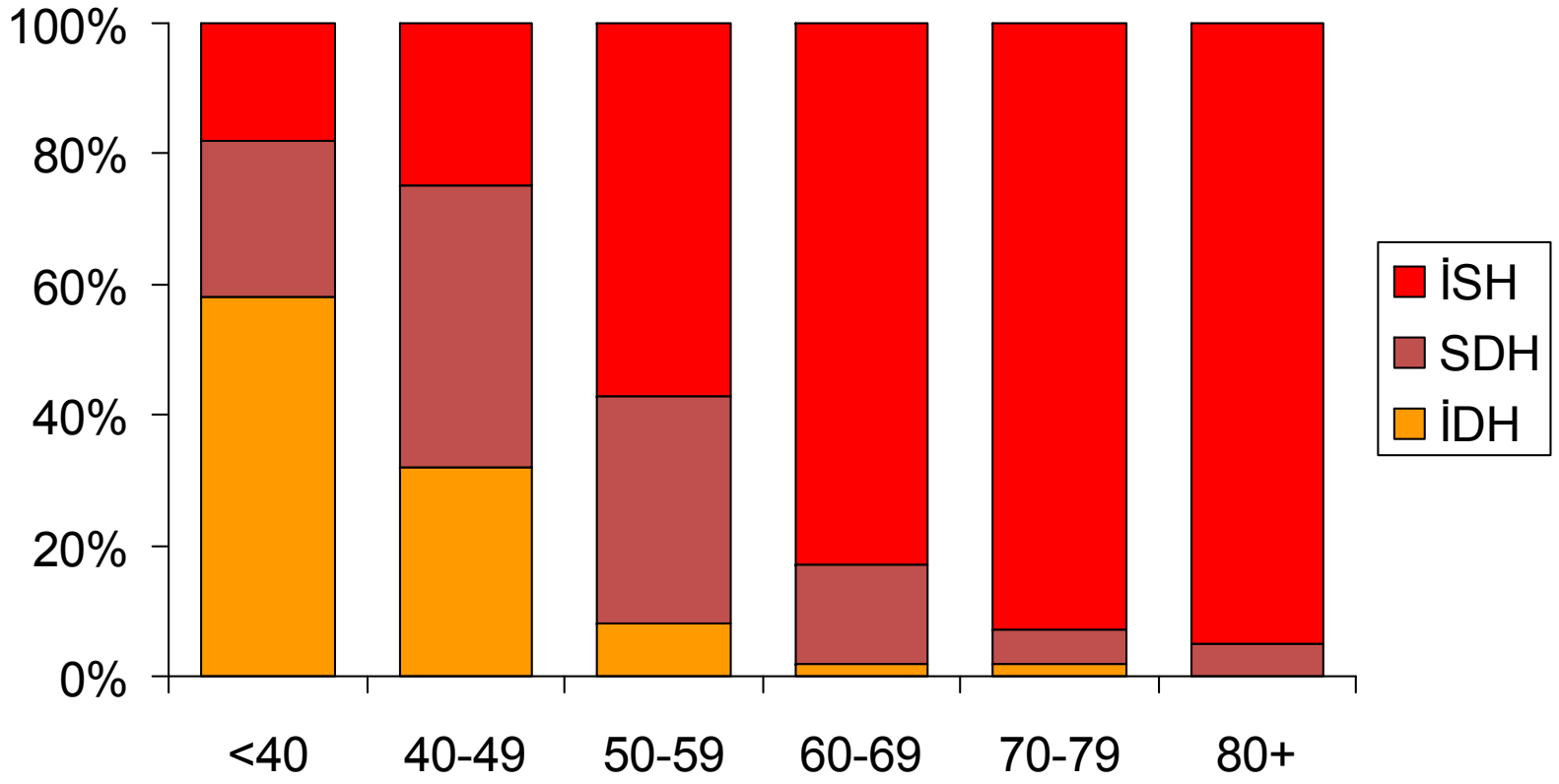


Mancia et al: J Hypertens 27: 2121-2158, 2009

Hipertansif Yaşlılarda Kan Basıncı Hedefleri

- **Kan basıncı hedefleri, eğer tolere edilirse genç hastalardaki ile aynıdır (yani, <140/90 mm Hg, hatta daha da aşağısı).**
- **Birçok yaşlı hastanın kan basıncını kontrol altına alabilmek için iki veya daha fazla ilaca ihtiyaç duyulmaktadır; özellikle de sistolik basıncı 140 mm Hg'nin altına indirmek güç olabilmektedir.**

YAŞ İLERLEDİKÇE İZOLE SİSTOLİK HİPERTANSİYON ORANI ARTAR



İSH: *SKB ≥140 mm Hg ve DKB <90 mm Hg*

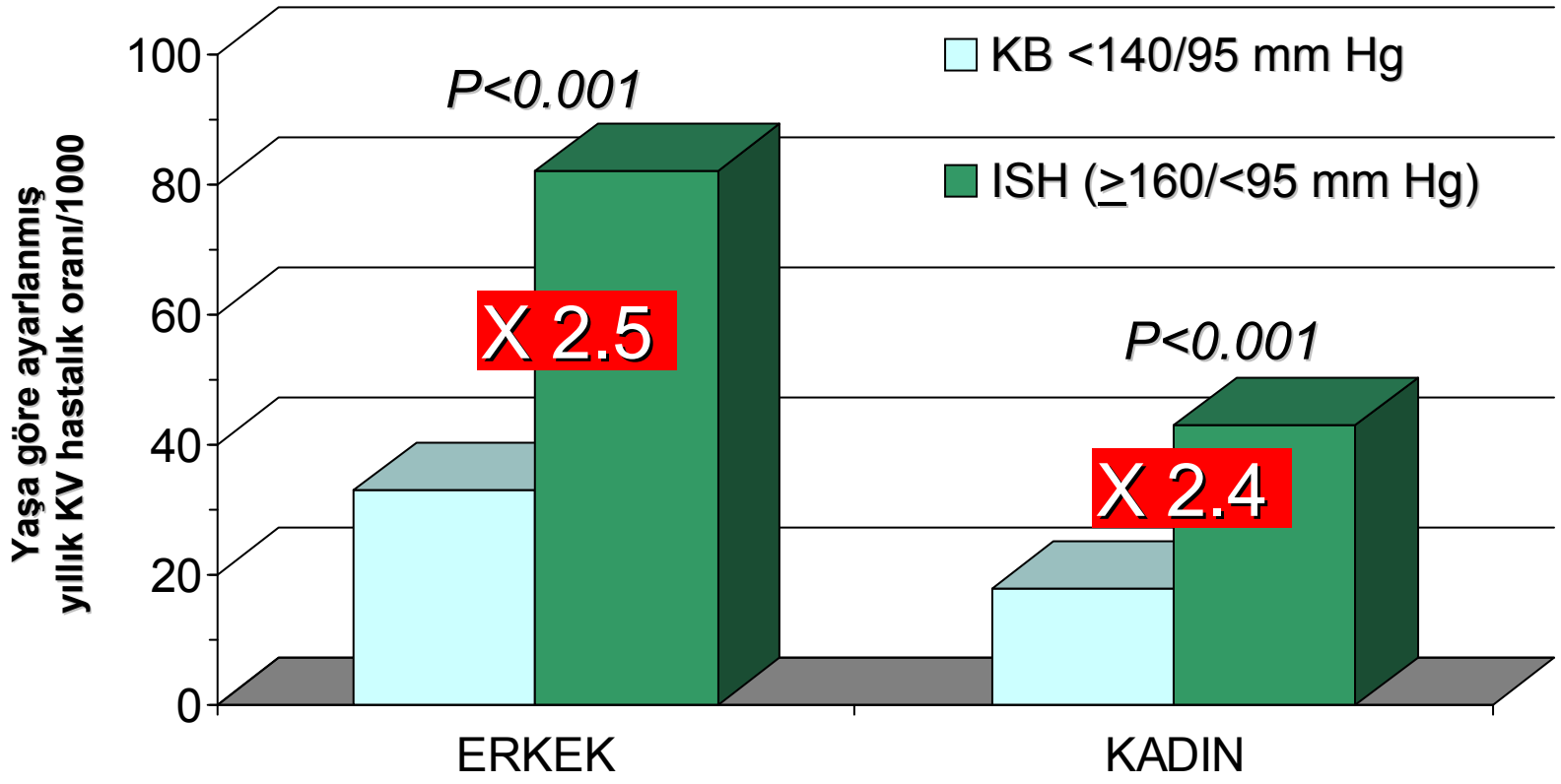
SDH: *SKB ≥140 mm Hg ve DKB ≥90 mm Hg*

İDH: *SKB <140 mm Hg ve DKB ≥90 mm Hg*

Franklin et al.: Hypertension 37: 869-874, 2001

İZOLE SİSTOLİK HİPERTANSİYON VE KARDİYOVASKÜLER HASTALIK RİSKİ

Framingham Çalışması

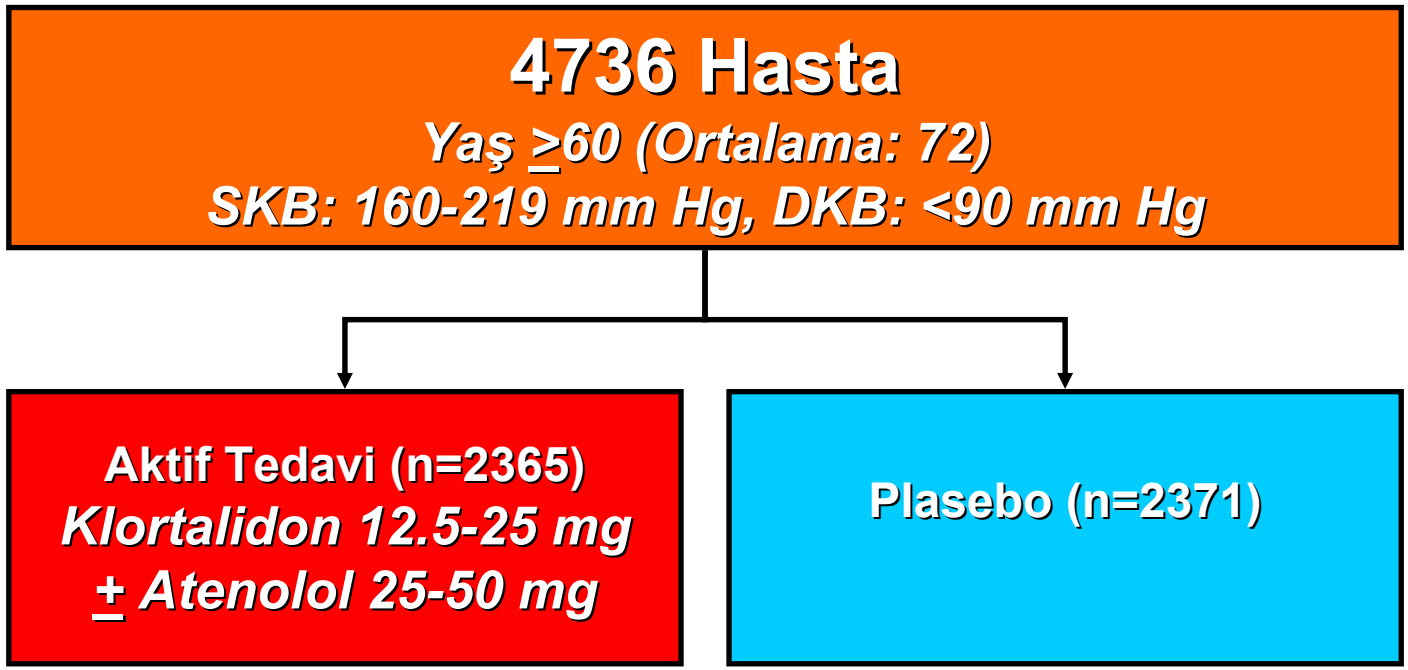


Wilking SV et al. JAMA 260:3451-3455, 1988

SHEP

(SYSTOLIC HYPERTENSION IN THE ELDERLY PROGRAM)

Çok Merkezli, Randomize, Çift-kör, Plasebo Kontrollü Çalışma



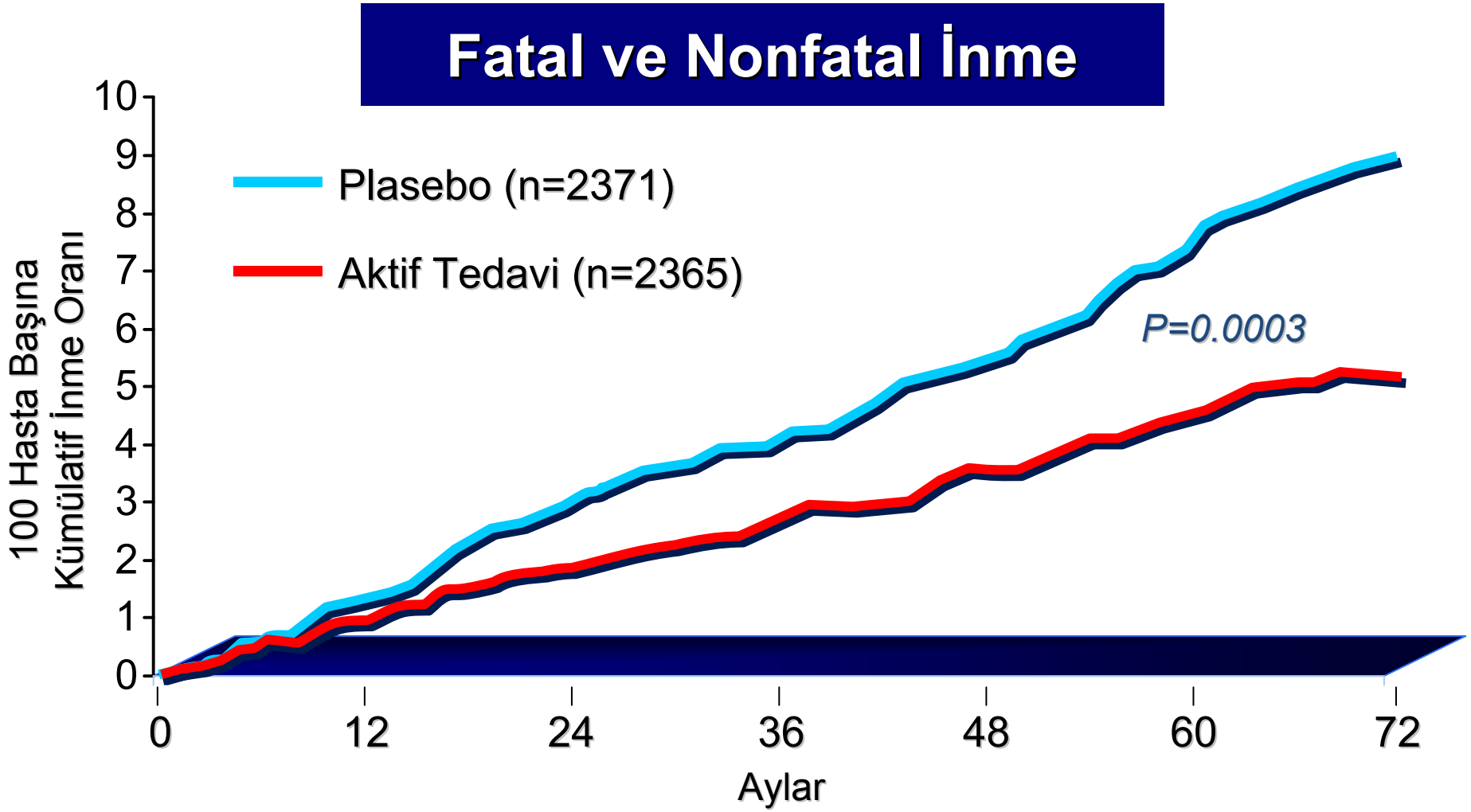
Çalışma Süresi: 5 yıl

Primer Sonlanım Noktası: Fatal ve nonfatal inme

SHEP Cooperative Research Group: JAMA 265: 3255-3264, 1991

SHEP

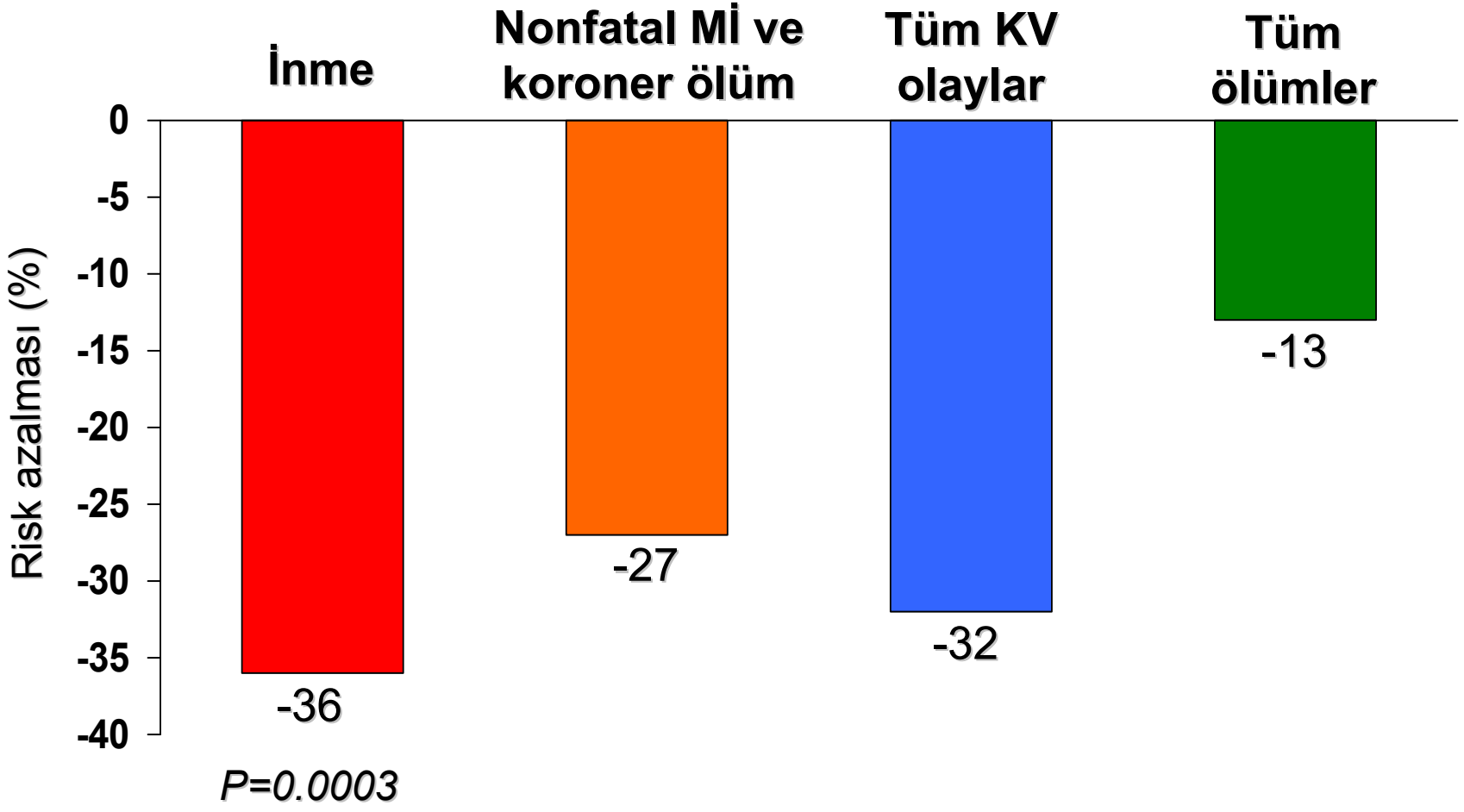
(SYSTOLIC HYPERTENSION IN THE ELDERLY PROGRAM)



SHEP Cooperative Research Group: JAMA 265: 3255-3264, 1991

SHEP

(SYSTOLIC HYPERTENSION IN THE ELDERLY PROGRAM)

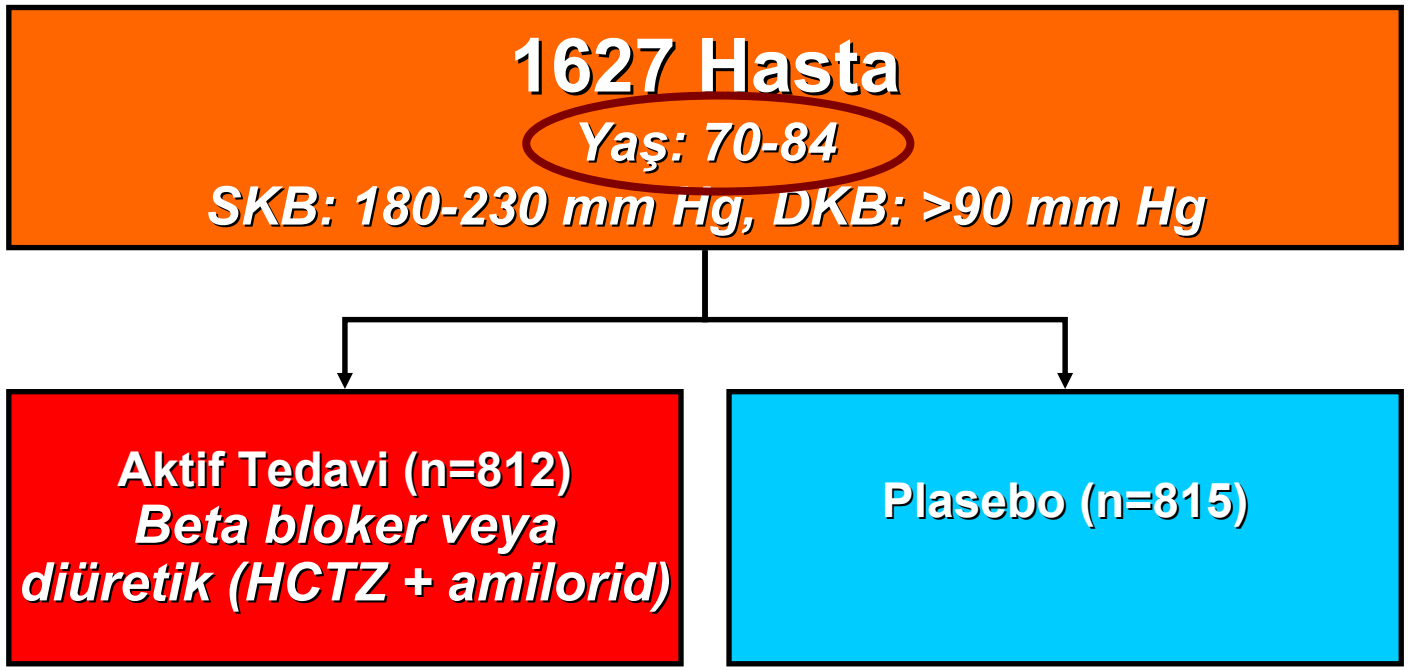


SHEP Cooperative Research Group: JAMA 265: 3255-3264, 1991

STOP Hypertension

(SWEDISH TRIAL IN OLD PATIENTS WITH HYPERTENSION)

Prospektif, Randomize, Çift-kör, Plasebo Kontrollü Çalışma



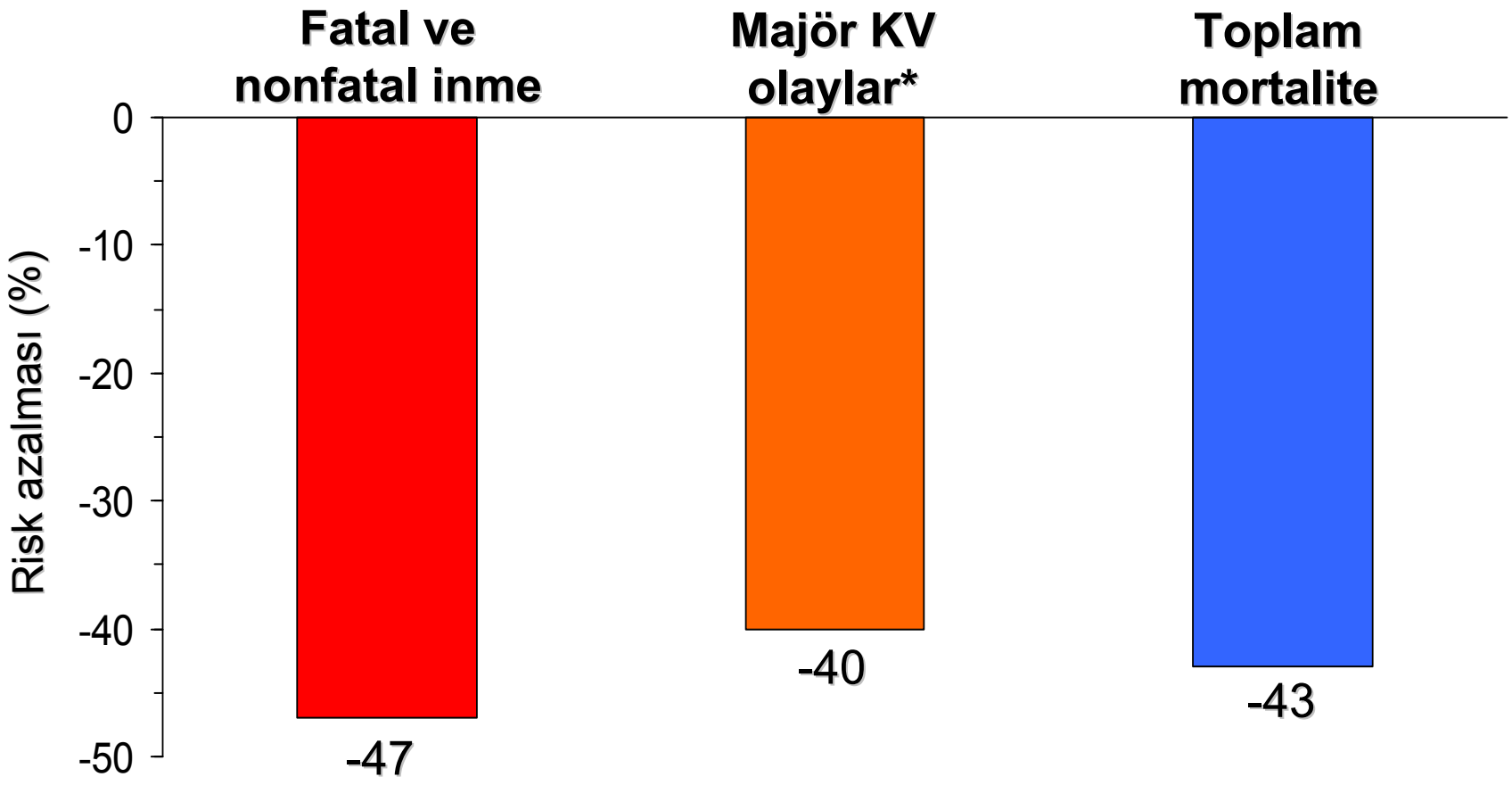
Çalışma Süresi: 65 ay

Primer Sonlanım Noktası: Fatal ve nonfatal inme

Dahlof et al.: Lancet 338: 1281-1285, 1991

STOP Hypertension

(SWEDISH TRIAL IN OLD PATIENTS WITH HYPERTENSION)



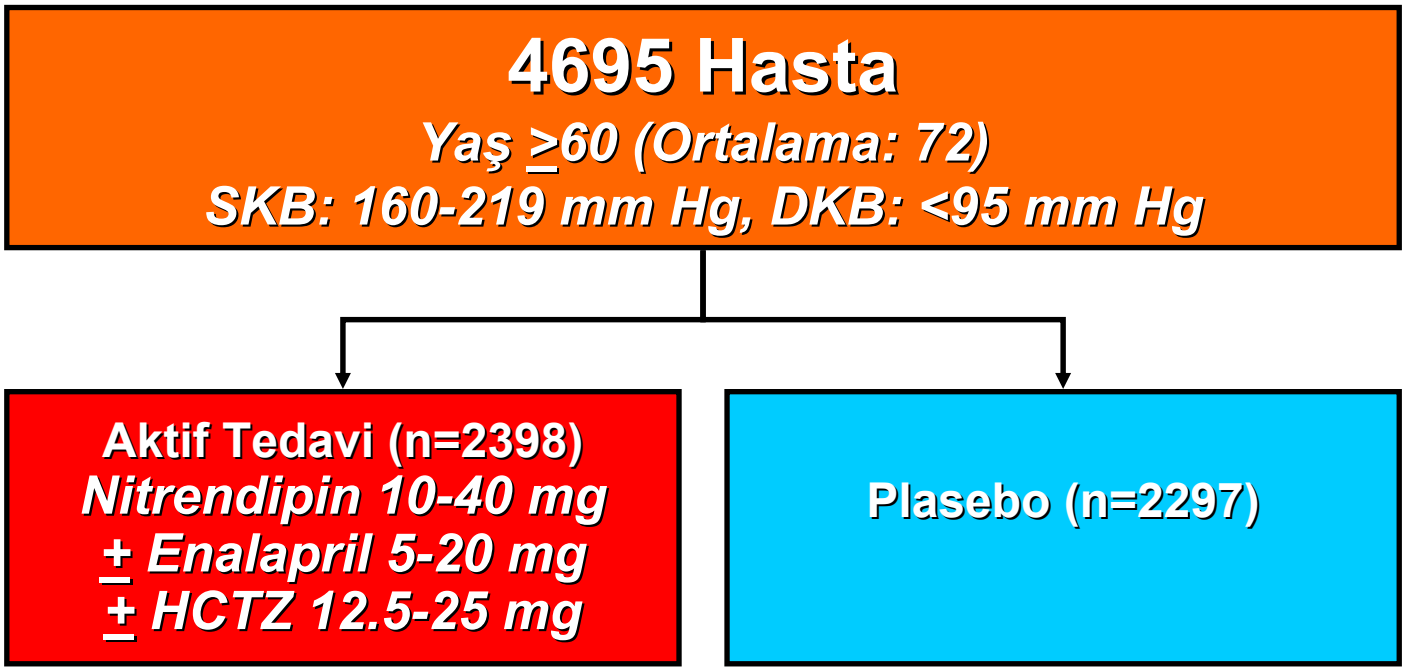
**Majör KV olaylar: İnme, Mİ, KV mortalite*

Dahlof et al.: Lancet 338: 1281-1285, 1991

SYST-EUR

(SYSTOLIC HYPERTENSION IN EUROPE)

Çok Merkezli, Randomize, Çift-kör, Plasebo Kontrollü Çalışma



Çalışma Süresi: 2 yıl

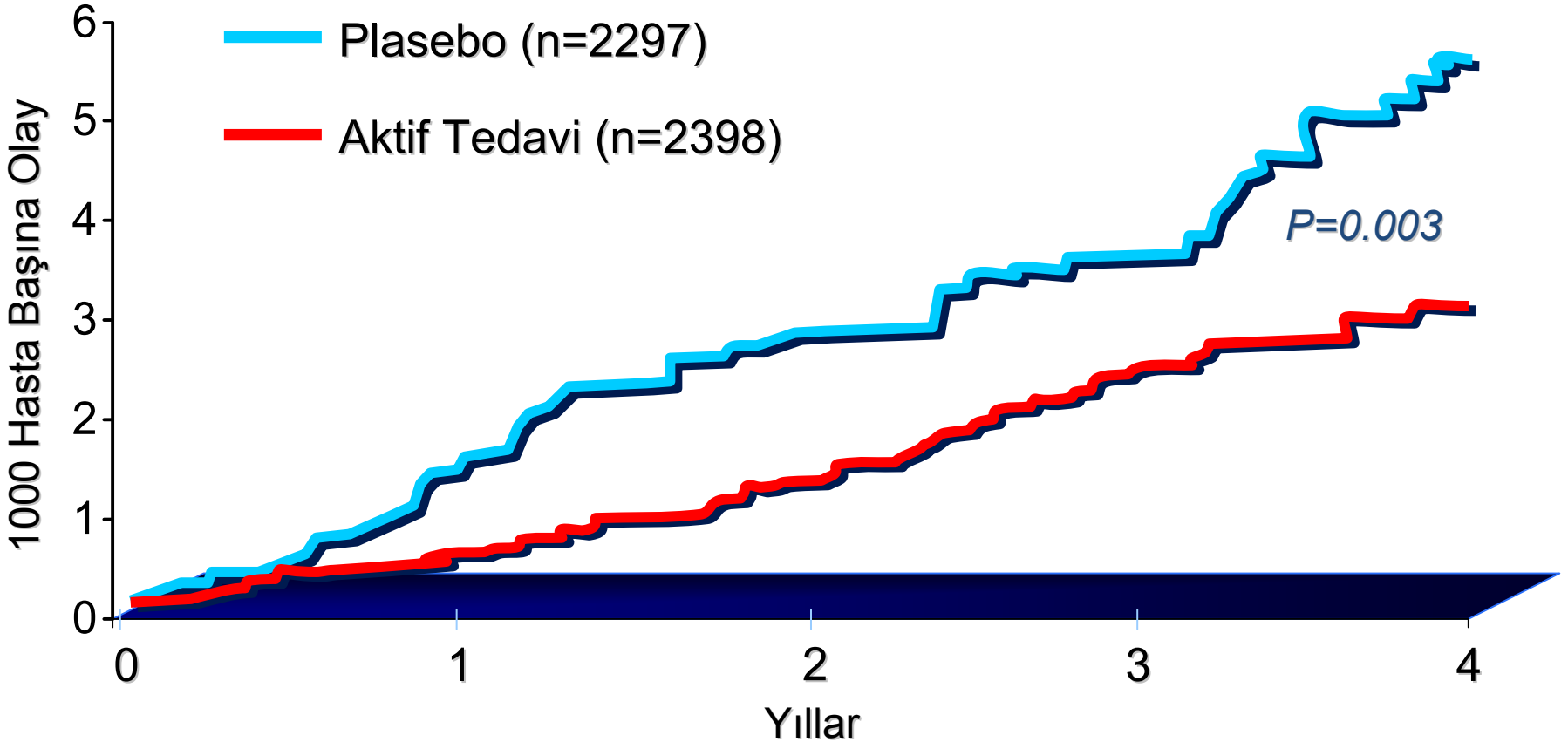
Primer Sonlanım Noktası: Fatal ve nonfatal inme

Staessen et al.: Lancet 350: 757-764, 1997

SYST-EUR

(SYSTOLIC HYPERTENSION IN EUROPE)

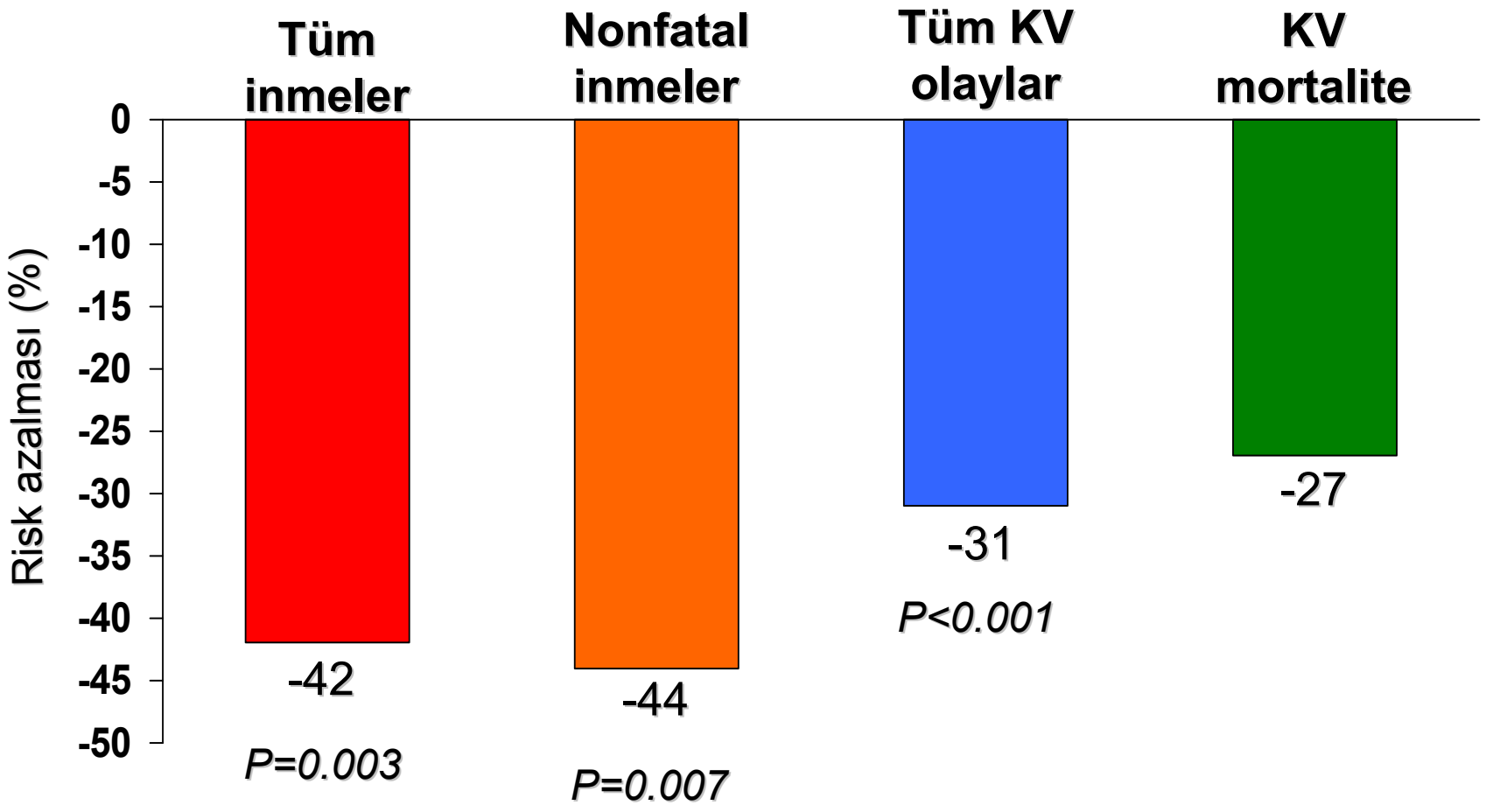
Fatal ve Nonfatal İnme



Staessen et al.: Lancet 350: 757-764, 1997

SYST-EUR

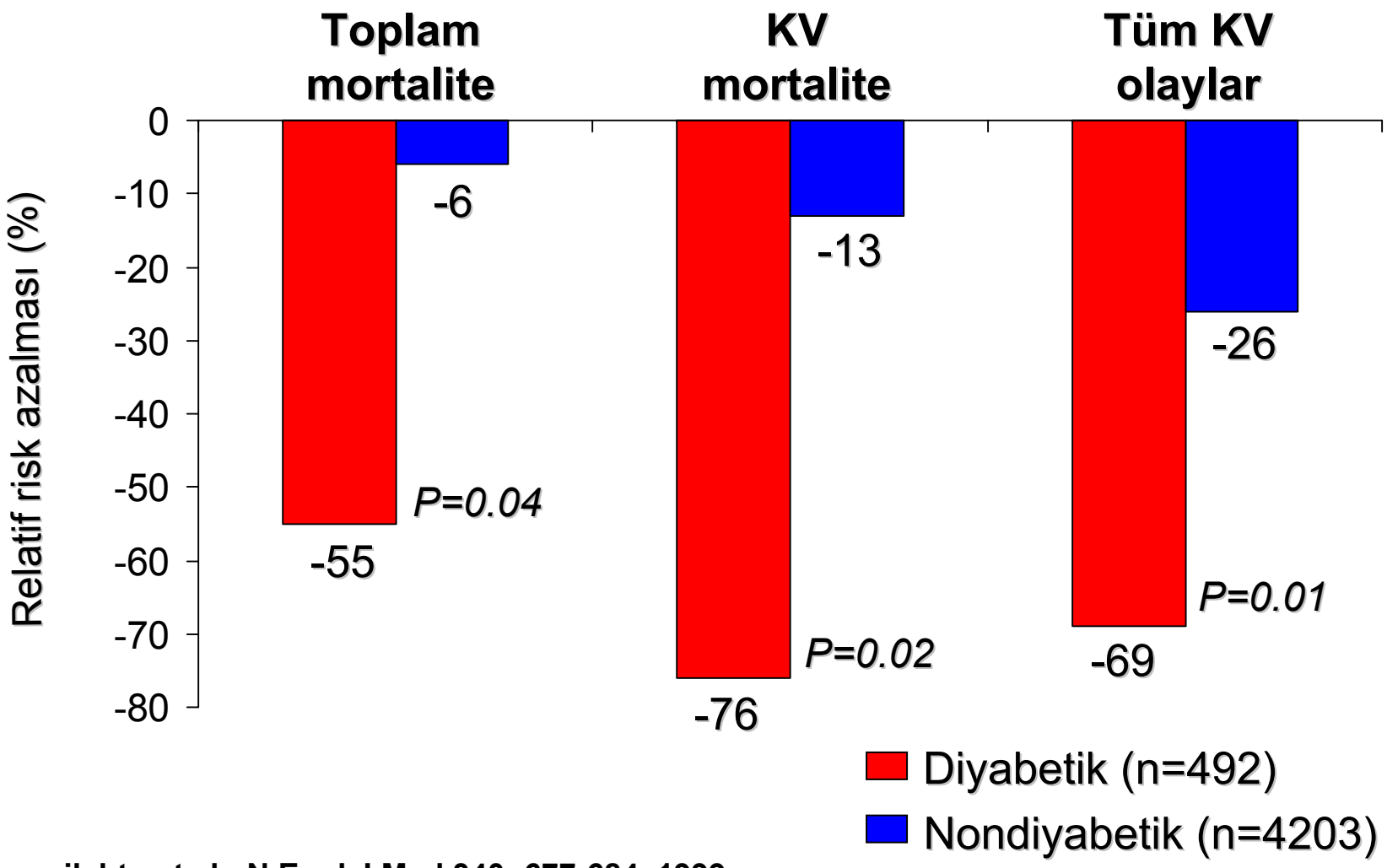
(SYSTOLIC HYPERTENSION IN EUROPE)



Staessen et al.: Lancet 350: 757-764, 1997

SYST-EUR

(SYSTOLIC HYPERTENSION IN EUROPE)



Tuomilehto et al.: N Engl J Med 340: 677-684, 1999

The NEW ENGLAND JOURNAL of MEDICINE

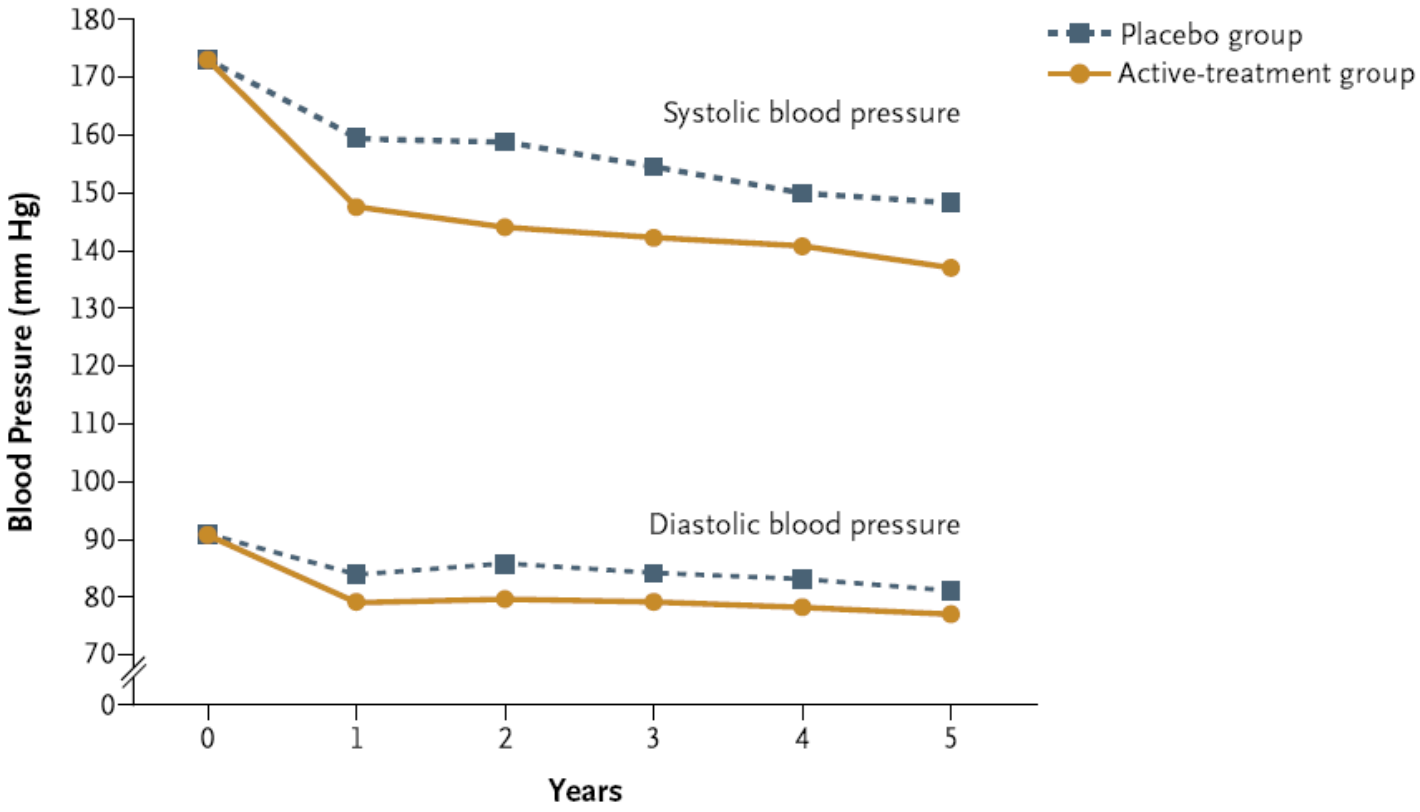
Treatment of Hypertension in Patients 80 Years of Age or Older

Nigel S. Beckett, M.B.,Ch.B., Ruth Peters, Ph.D., Astrid E. Fletcher, Ph.D., Jan A. Staessen, M.D., Ph.D., Lisheng Liu, M.D., Dan Dumitrascu, M.D., Vassil Stoyanovsky, M.D., Riitta L. Antikainen, M.D., Ph.D., Yuri Nikitin, M.D., Craig Anderson, M.D., Ph.D., Alli Belhani, M.D., Françoise Forette, M.D., Chakravarthi Rajkumar, M.D., Ph.D., Lutgarde Thijs, M.Sc., Winston Banya, M.Sc., and Christopher J. Bulpitt, M.D., for the HYVET Study Group*

3845 Hasta (≥80 Yaş, Sistolik Kan Basıncı >160 mm Hg)
İndapamid 1.5 mg ± Perindopril 2 veya 4 mg / Plasebo

HYVET

(Hypertension in the Very Elderly Trial)



No. at Risk						
Placebo group	1912	1468	701	330	191	116
Active-treatment group	1933	1540	754	373	207	118

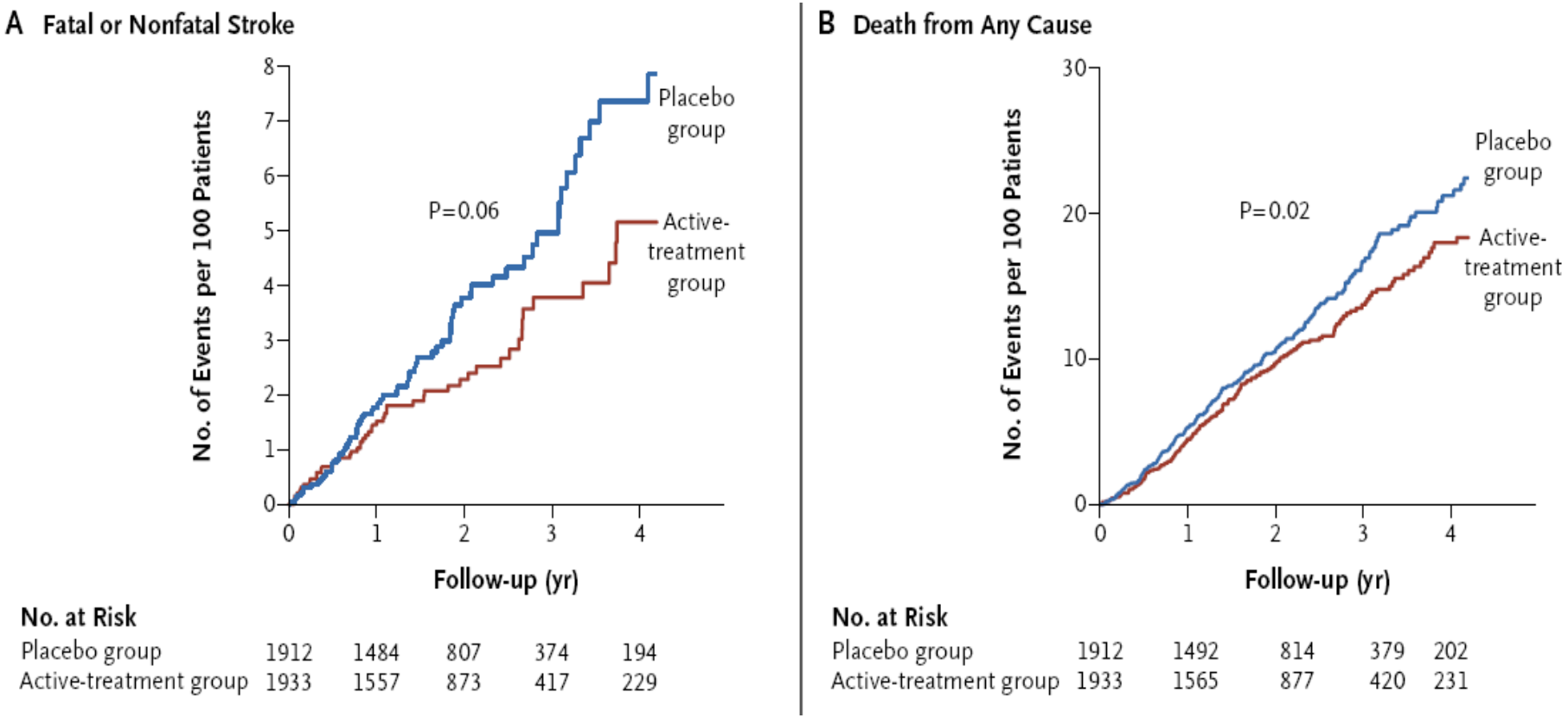
Beckett et al: N Engl J Med 358: 1-12, 2008

HYVET

(Hypertension in the Very Elderly Trial)

Ölümcül ve Ölümcül Olmayan İnme

Tüm Ölümler

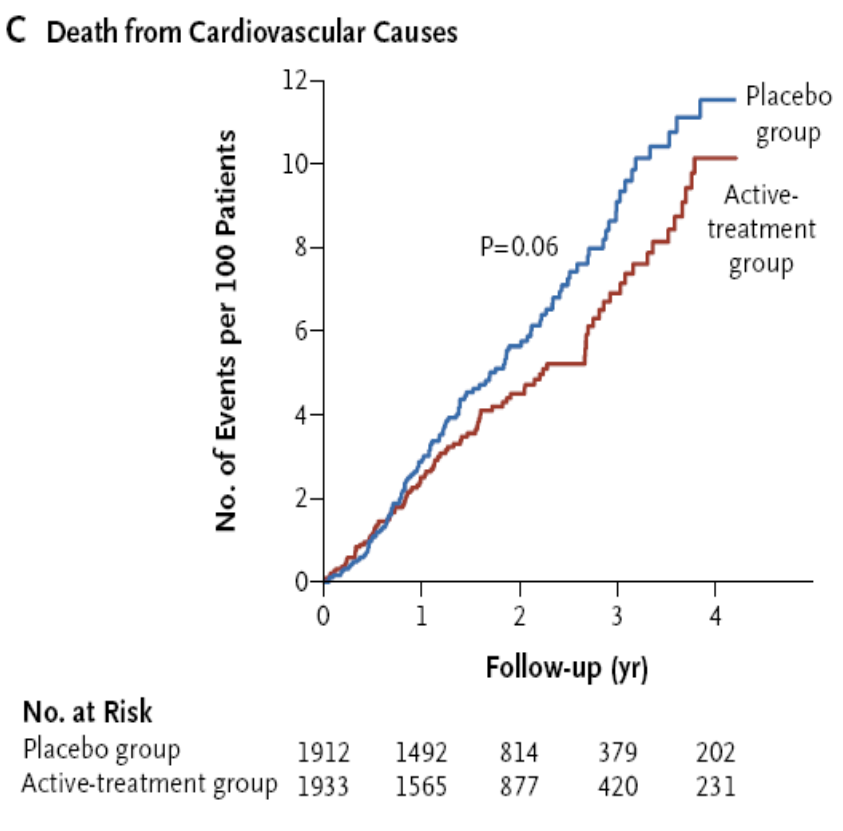


Beckett et al: N Engl J Med 358: 1-12, 2008

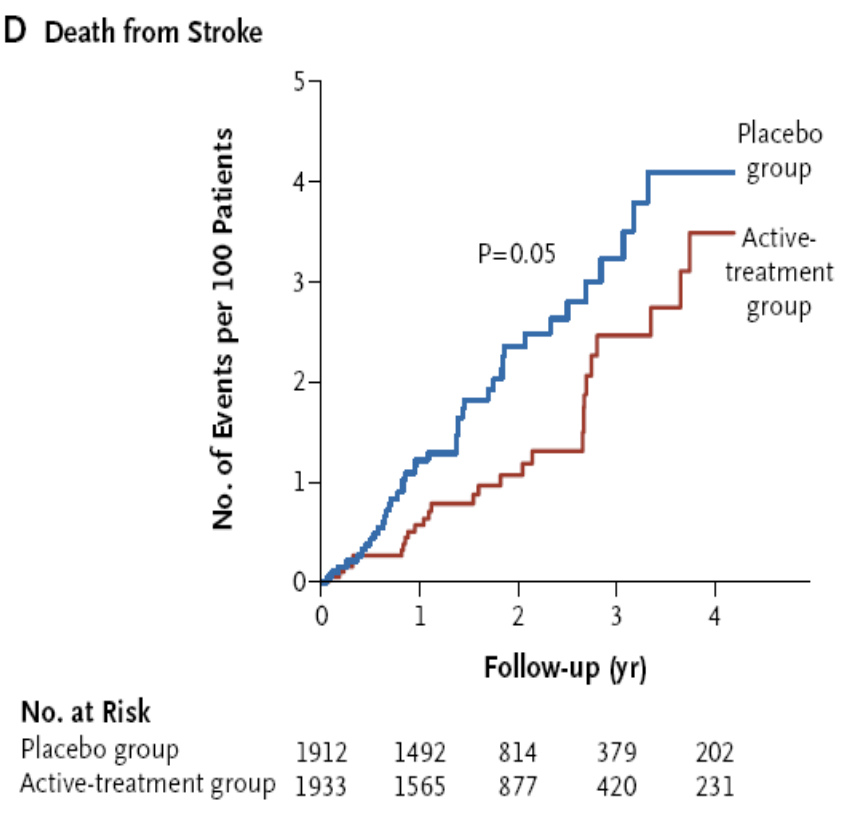
HYVET

(Hypertension in the Very Elderly Trial)

KV Nedenlere Bağlı Ölüm



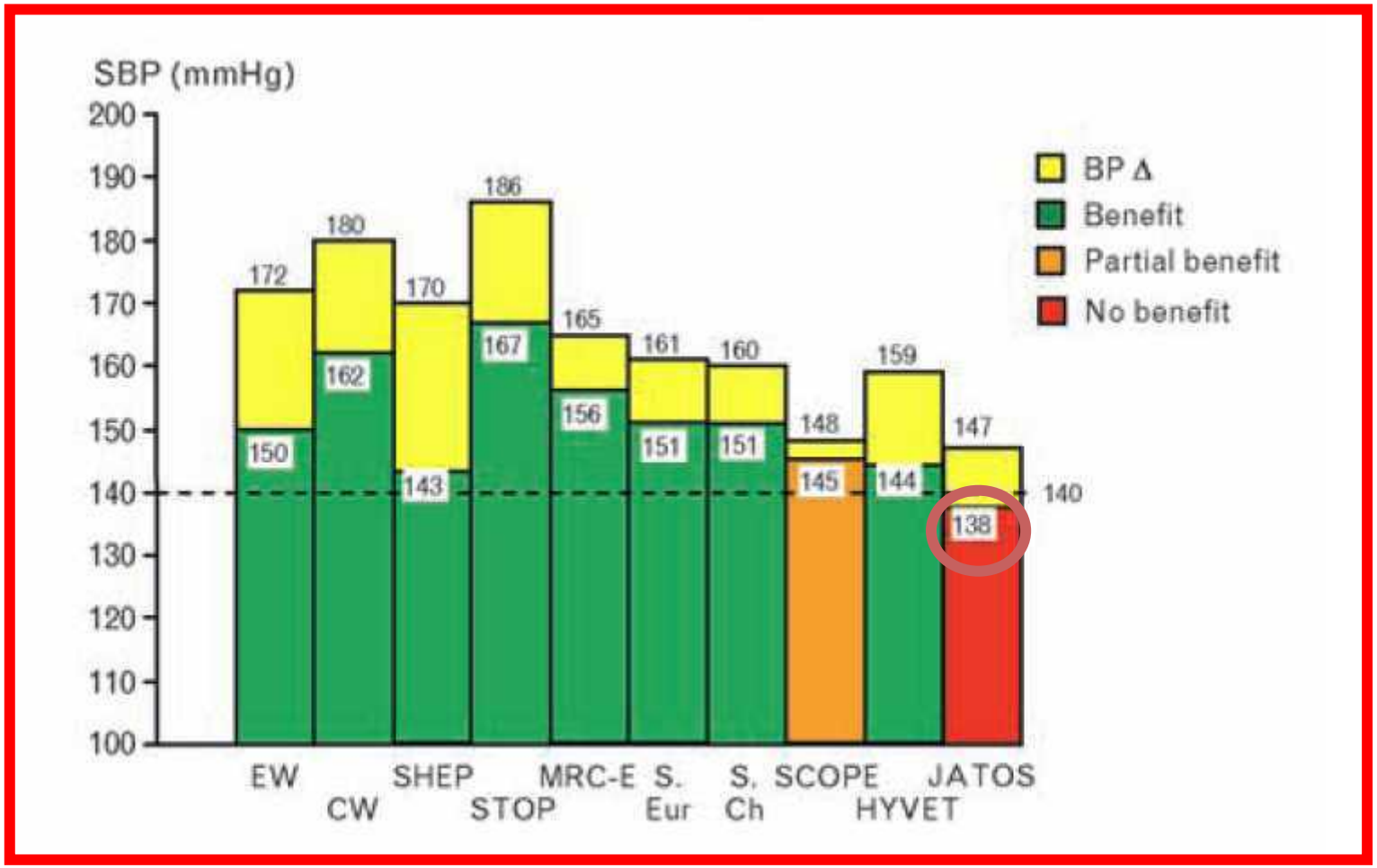
İnmeye Bağlı Ölüm



Beckett et al: N Engl J Med 358: 1-12, 2008

Reappraisal of European Guidelines on Hypertension Management (2009)

Yaşlılar



Mancia et al: J Hypertens 27: 2121-2158, 2009

Diyabetik Hastalarda Kan Basıncı Hedefleri

- **Hedef kan basıncı <130/80 mm Hg olmalıdır. Bu grup hastalarda kan basıncı yüksek normal düzeyde iken bile antihipertansif ilaç tedavisine başlanabilir.**
- **Başlangıç kan basıncı yüksek normal düzeyde olsa bile mikroalbuminürinin varlığı antihipertansif ilaç tedavisine başlanmasını hızlandırmalıdır. Renin-anjiyotensin sistemi blokerleri belirgin antiproteinürik etkiye sahip olup kullanımları tercih edilmelidir.**

Effects of a fixed combination of perindopril and indapamide on macrovascular and microvascular outcomes in patients with type 2 diabetes mellitus (the ADVANCE trial): a randomised controlled trial

*ADVANCE Collaborative Group**

Summary

Background Blood pressure is an important determinant of the risks of macrovascular and microvascular complications of type 2 diabetes, and guidelines recommend intensive lowering of blood pressure for diabetic patients with hypertension. We assessed the effects of the routine administration of an angiotensin converting enzyme (ACE) inhibitor-diuretic combination on serious vascular events in patients with diabetes, irrespective of initial blood pressure levels or the use of other blood pressure lowering drugs.

Methods The trial was done by 215 collaborating centres in 20 countries. After a 6-week active run-in period, 11 140 patients with type 2 diabetes were randomised to treatment with a fixed combination of perindopril and indapamide or matching placebo, in addition to current therapy. The primary endpoints were composites of major macrovascular and microvascular events, defined as death from cardiovascular disease, non-fatal stroke or non-fatal myocardial infarction, and new or worsening renal or diabetic eye disease, and analysis was by intention-to-treat. The macrovascular and microvascular composites were analysed jointly and separately. This trial is registered with ClinicalTrials.gov, number NCT00145925.

Findings After a mean of 4·3 years of follow-up, 73% of those assigned active treatment and 74% of those assigned control remained on randomised treatment. Compared with patients assigned placebo, those assigned active therapy had a mean reduction in systolic blood pressure of 5·6 mm Hg and diastolic blood pressure of 2·2 mm Hg. The

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See Online/Comment
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*Collaborators listed at end of paper

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Tip 2 Diyabette Gerçekleştirilen
En Büyük Morbidite - Mortalite Çalışması

Lancet 2007; 370:829-840

ADVANCE

(Action in Diabetes and Vascular disease: preterAx and diamicroN-MR Controlled Evaluation)

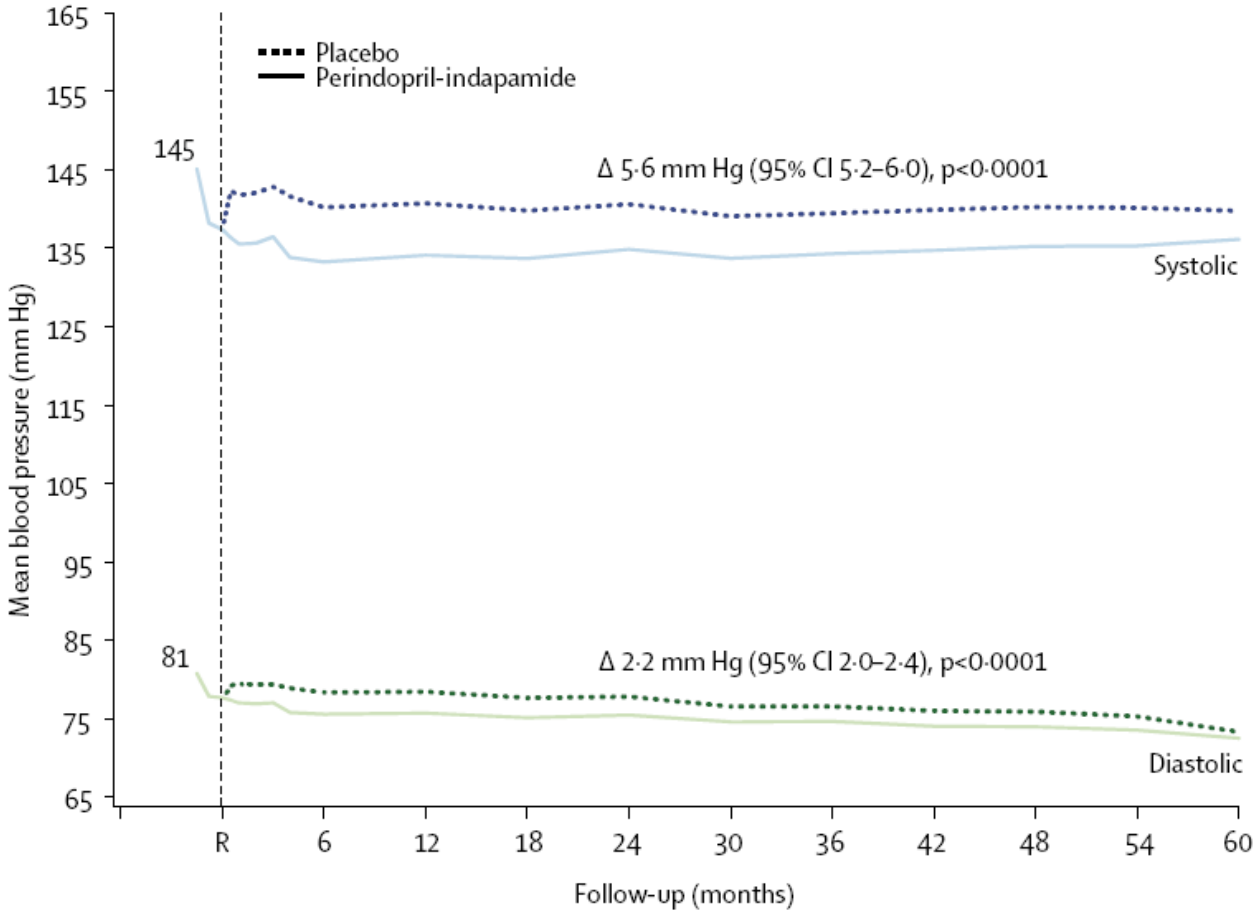
	Randomised treatment	
	Active (n=5569)	Placebo (n=5571)
Age (years), mean (SD)	66 (6)	66 (7)
Female, n (%)	2366 (43%)	2369 (43%)
Age when diabetes first diagnosed (years), mean (SD)	58 (9)	58 (9)
Previous vascular disease		
History of major macrovascular disease, n (%)	1798 (32%)	1792 (32%)
History of myocardial infarction, n (%)	678 (12%)	656 (12%)
History of stroke, n (%)	502 (9%)	520 (9%)
History of major microvascular disease, n (%)	568 (10%)	584 (10%)
History of macroalbuminuria†, n (%)	197 (4%)	204 (4%)
History of microvascular eye disease‡, n (%)	389 (7%)	404 (7%)
Blood pressure control		
Systolic blood pressure (mm Hg), mean (SD)	145 (22)	145 (21)
Diastolic blood pressure (mm Hg), mean (SD)	81 (11)	81 (11)
History of currently treated hypertension, n (%)	3802 (68%)	3853 (69%)
Other major risk factors		
Current smokers, n (%)	804 (14%)	878 (16%)
Serum total cholesterol (mmol/L), mean (SD)	5·2 (1·2)	5·2 (1·2)
Serum HDL cholesterol (mmol/L), mean (SD)	1·3 (0·3)	1·3 (0·4)
Urinary albumin:creatinine ratio (µg/mg), median (IQR)	15 (7 to 40)	15 (7 to 40)
Microalbuminuria, n (%)	1441 (26%)	1421 (26%)
Serum creatinine (µmol/L), mean (SD)	87 (23)	87 (26)
Serum haemoglobin A_{1c} concentration (%), mean (SD)	7·5 (1·6)	7·5 (1·6)
Body-mass index (kg/m²), mean (SD)	28 (5)	28 (5)

Hastaların %41'inde Kan Basıncı <140/90 mm Hg

Table 1: Baseline* characteristics of randomised participants

ADVANCE

(Action in Diabetes and Vascular disease: preterAx and diamicroN-MR Controlled Evaluation)

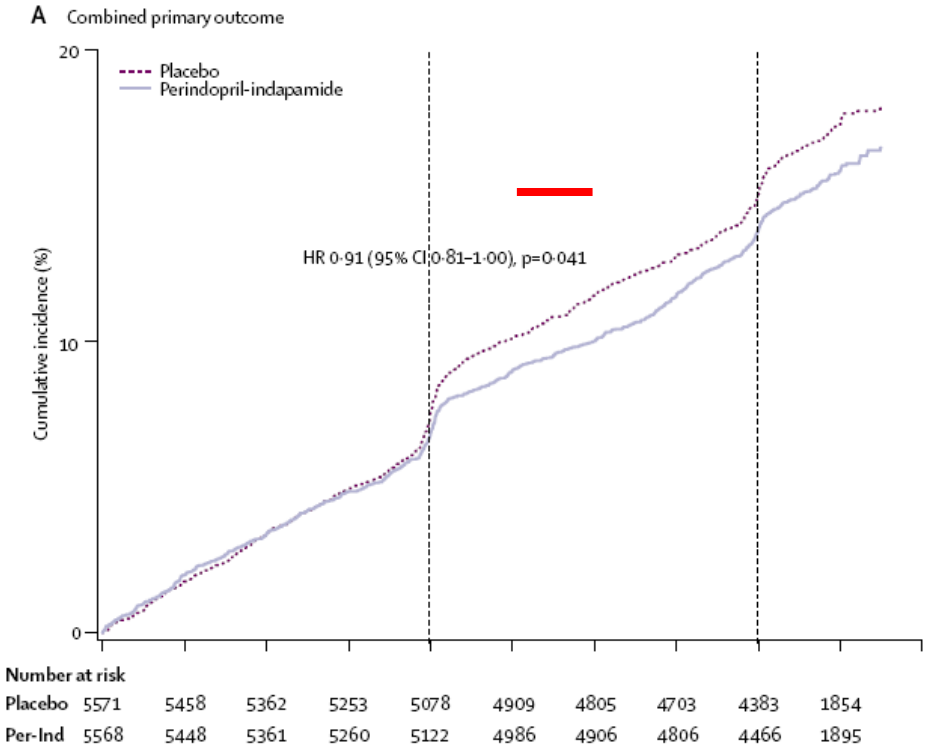


Placebo	137/78	140/78	141/78	140/78	141/78	139/77	139/77	140/76	140/76	140/75	140/73
Per-ind	137/78	133/76	134/76	134/75	135/75	134/75	134/75	135/74	135/74	135/74	136/73

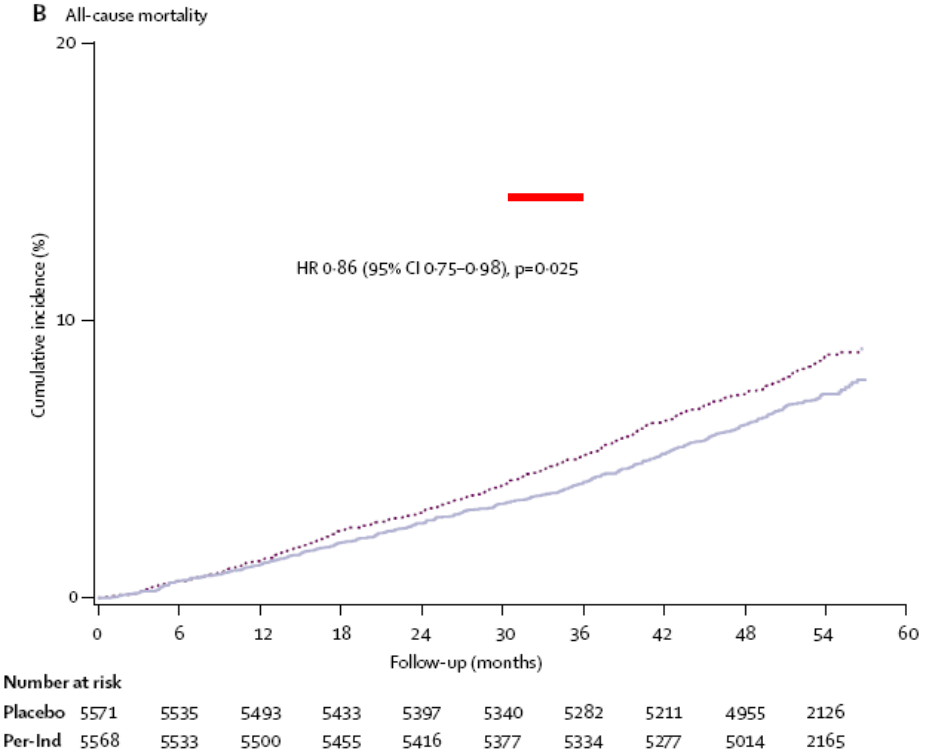
ADVANCE

(Action in Diabetes and Vascular disease: preterAx and diamicroN-MR Controlled Evaluation)

Majör Makrovasküler ve Mikrovasküler Olaylar

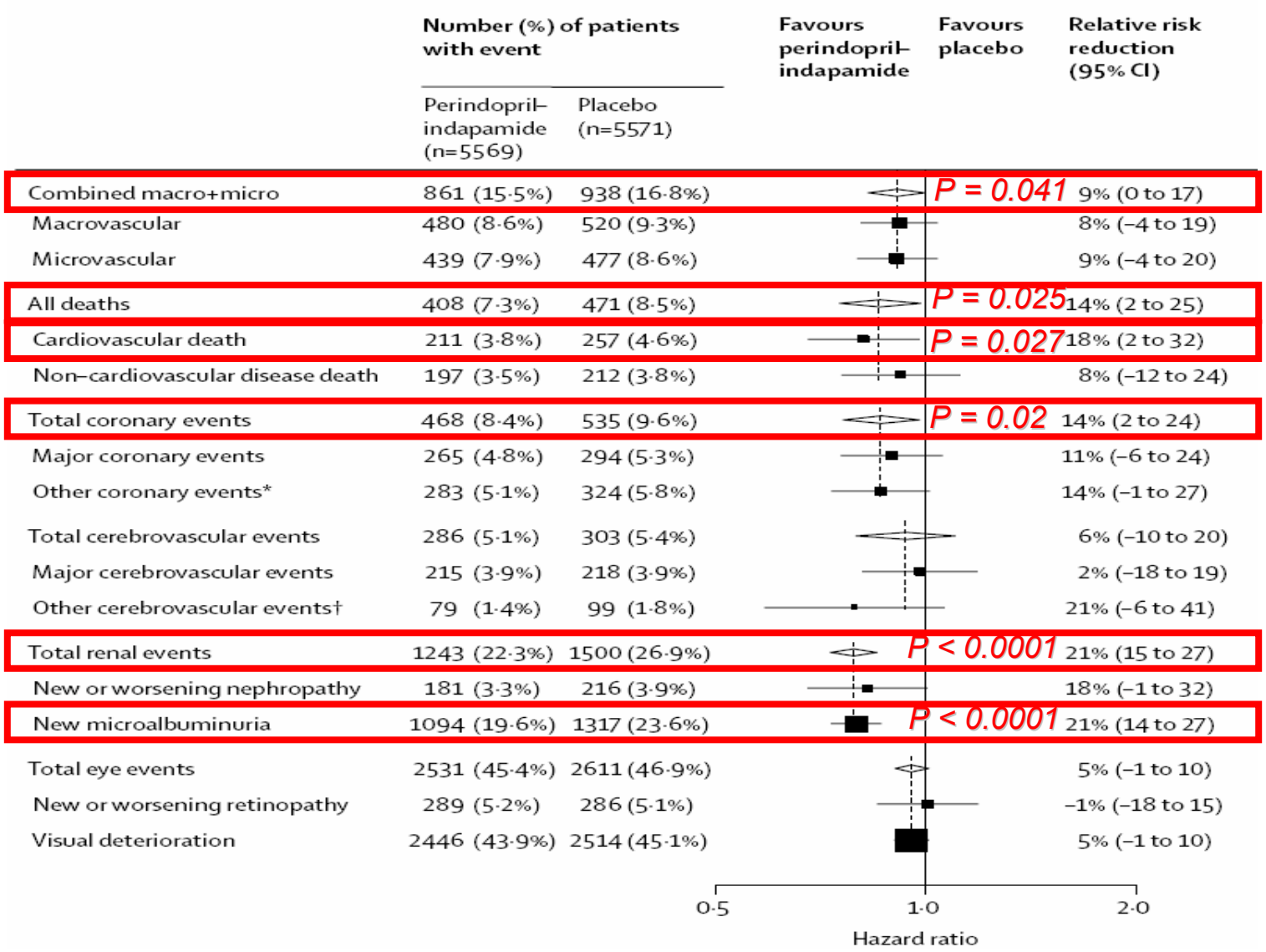


Tüm Nedenlere Bağlı Ölüm



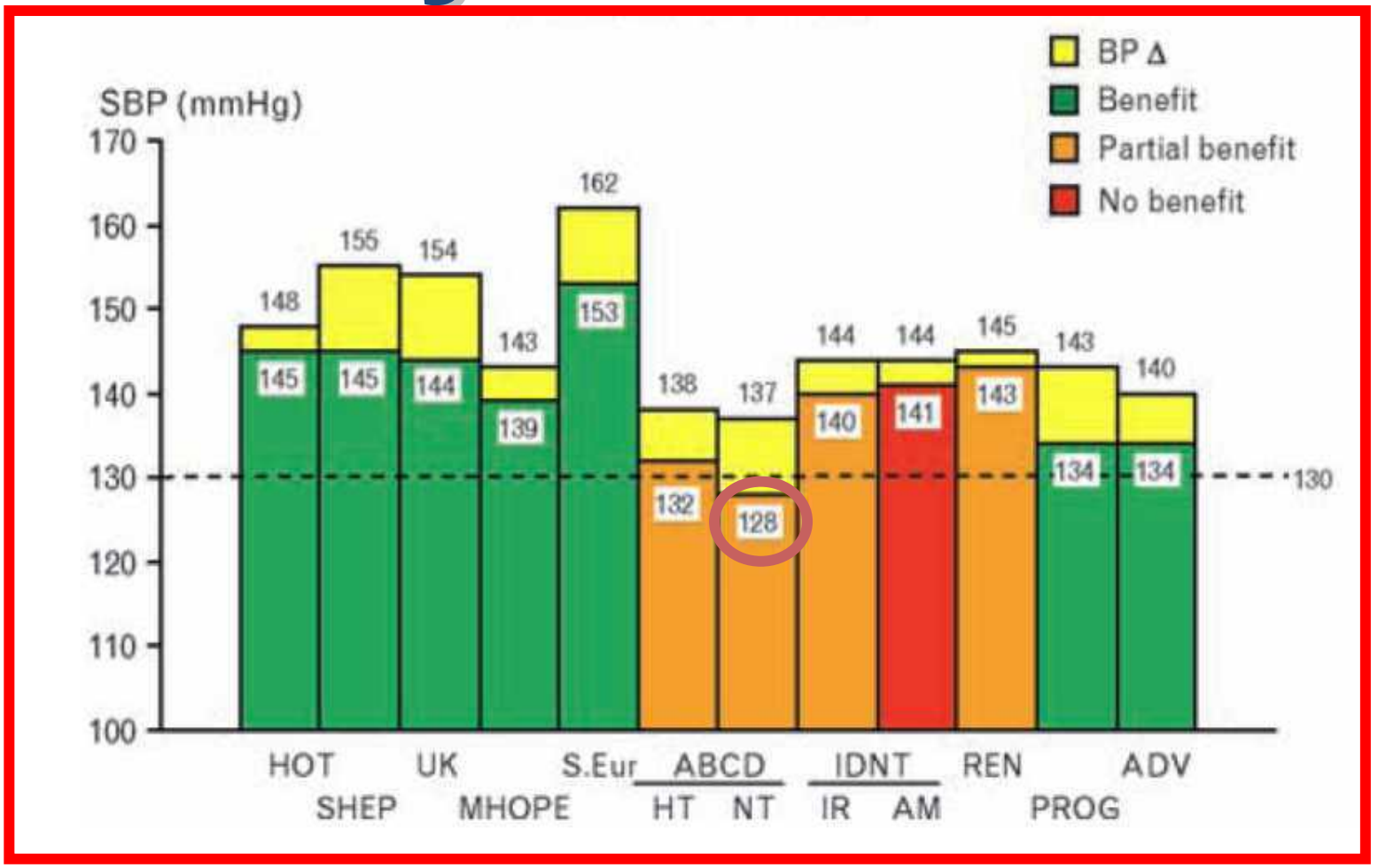
ADVANCE

(Action in Diabetes and Vascular disease: preterAx and diamicroN-MR Controlled Evaluation)



Reappraisal of European Guidelines on Hypertension Management (2009)

Diyabetikler



Mancia et al: J Hypertens 27: 2121-2158, 2009

2007 Guidelines for the Management of Arterial Hypertension (ESH – ESC)

KAH Olan Hastalarda Kan Basıncı Hedefleri

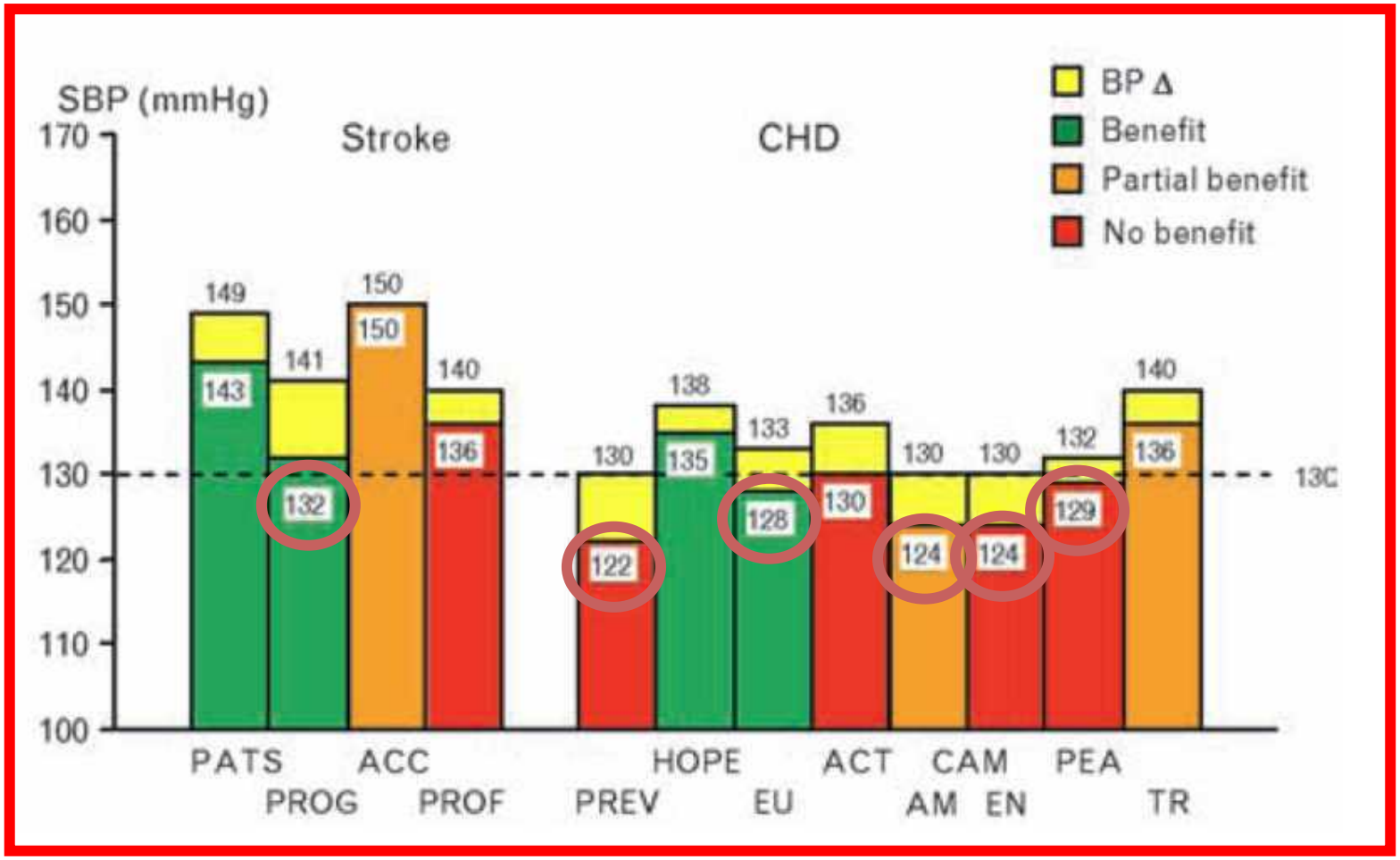
- **Başlangıç kan basıncı <140/90 mm Hg veya tedavi ile sağlanan kan basıncı 130/80 mm Hg ya da daha düşük değerlerde olduğunda antihipertansif tedavinin yararlı etki gösterilmiştir.**

SVH Olan Hastalarda Kan Basıncı Hedefleri

- **Serebrovasküler hastalığı olan hastaların hipertansif olanlarında olduğu kadar kan basıncı yüksek normal düzeylerde olanlarında da antihipertansif tedavi yararlıdır. Kan basıncı hedefi <130/80 mm Hg olmalıdır.**

Reappraisal of European Guidelines on Hypertension Management (2009)

Olanlar



Mancia et al: J Hypertens 27: 2121-2158, 2009

Reappraisal of European Guidelines on Hypertension Management (2009)

Yeni Çalışmalara İhtiyaç Var !

- Evre 1 hipertansiyonu olan tüm hastalara, total kardiyovasküler risk düşük veya orta derecede olsa bile, antihipertansif ilaç verilmeli mi?

- Evre 1 hipertansiyonu olan yaşlılara antihipertansif ilaç verilmeli mi?

  Bu hastalarda <140/90 mm Hg hedeflenmeli

Reappraisal of European Guidelines on Hypertension Management (2009)

Yeni Çalışmalara İhtiyaç Var !

- Kan basıncı yüksek normal düzeyde olan diyabetik veya daha önceden kardiyovasküler ya da serebrovasküler hastalık hikayesi olan hastalara antihipertansif ilaç verilmeli mi?

  Bu hastalarda <130/80 mm Hg hedeflenmeli mi?

Reappraisal of European Guidelines on Hypertension Management (2009)

Yeni Çalışmalara İhtiyaç Var !

- Değişik klinik durumlarda ulaşılabilecek en düşük ve güvenli kan basıncı değerleri nelerdir?
- Kan basıncını düşürdüğü bilinen yaşam tarzı değişikliklerinin, hipertansiyonu olan hastalarda aynı zamanda morbidite ve mortaliteyi azaltıcı etkileri var mı?

Renal Disfonksiyonu Olan Hastalarda Kan Basıncı Hedefleri

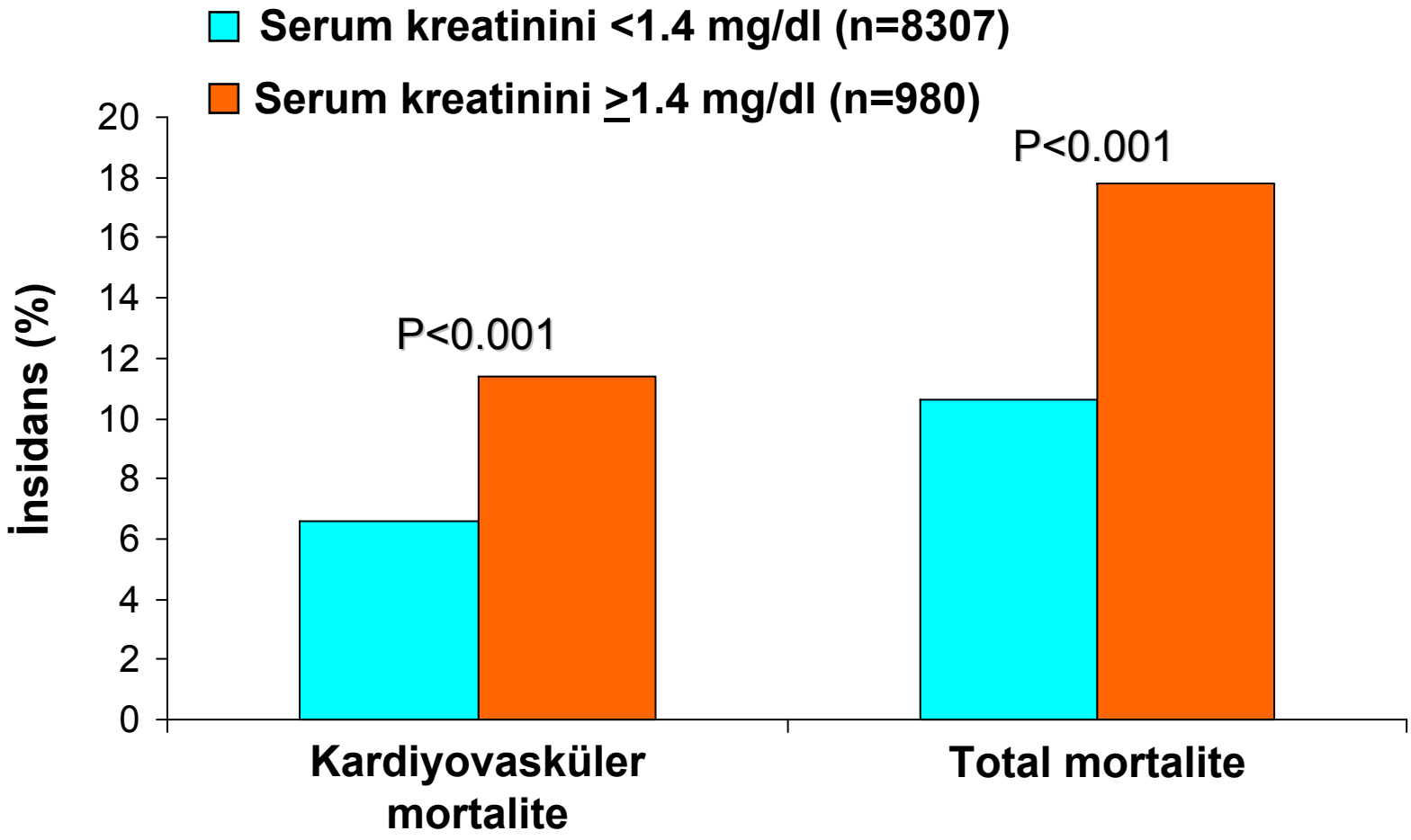
- **Renal disfonksiyonun progresyonuna karşı proteksiyon sağlayabilmek için;**

  a) Sıkı kan basıncı kontrolü (<130/80 mm Hg, ve eğer proteinüri >1 g/gün ise daha da düşük değerler)

  b) Proteinürinin olabildiğince normal değerlere kadar düşürülmesi gereklidir.

HOPE ÇALIŞMASI

(Heart Outcomes Prevention Evaluation)



Mann et al.: Ann Intern Med 134: 629-636, 2001

ACCOMPLISH

Avoiding Cardiovascular Events through Combination Therapy in Patients Living with Systolic Hypertension

- Beş ülkeden (ABD, İsveç, Norveç, Danimarka, Finlandiya) toplam 548 merkez
- Hipertansiyonu olan ve kardiyovasküler olay riski yüksek olan 11,506 hasta
  - Miyokard infarktüsü, revaskülarizasyon veya inme hikayesi
  - Böbrek fonksiyon bozukluğu
  - Periferik arter hastalığı
  - Sol ventrikül hipertrofisi
  - Diabetes mellitus

Jamerson K et al: N Engl J Med 359: 2417-2428, 2008

ACCOMPLISH

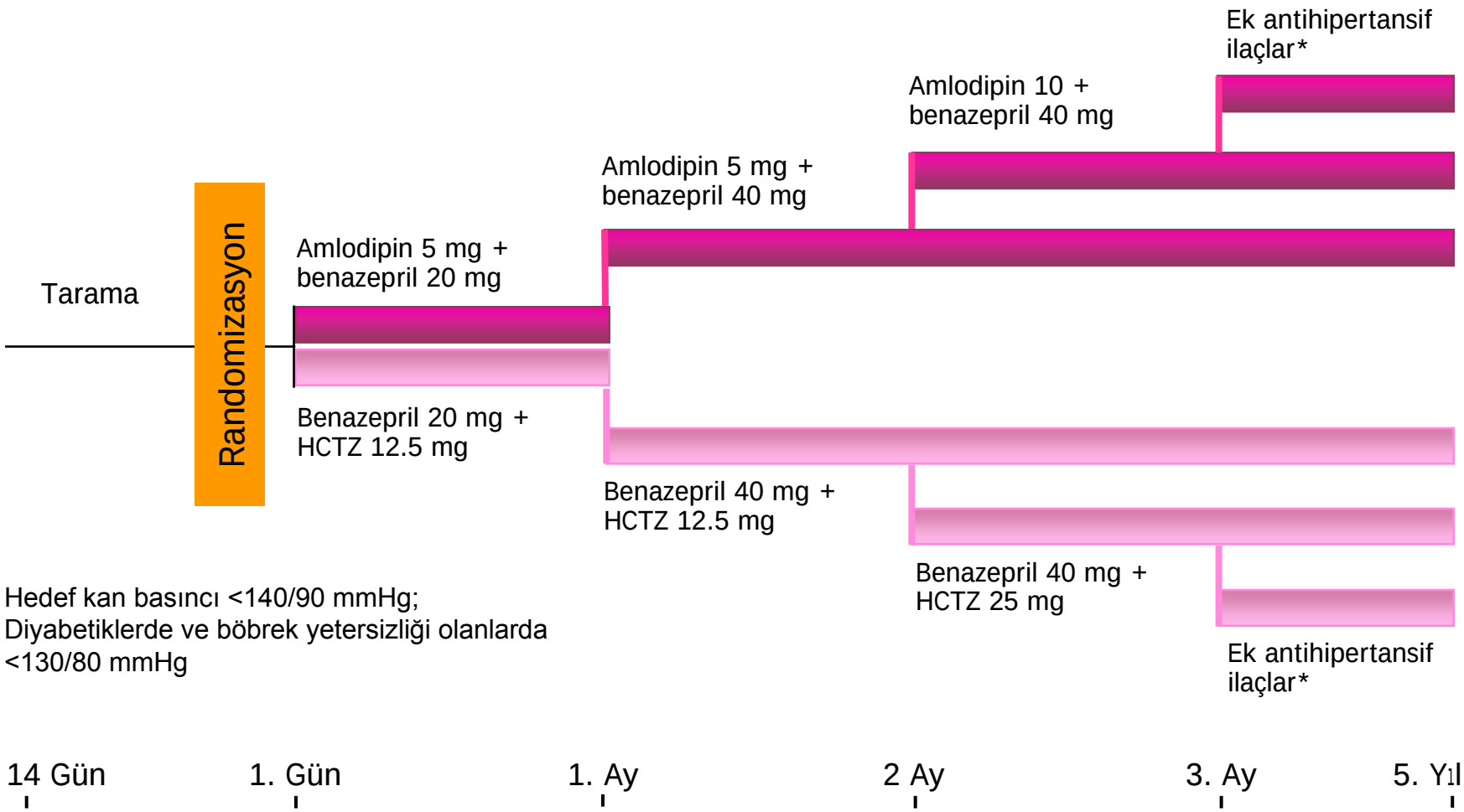
Avoiding Cardiovascular Events through Combination Therapy in Patients Living with Systolic Hypertension

	Benazepril-Amlodipin (n=5744)	Benazepril-Hidroklorotiyazid (n=5762)
Cinsiyet (%E / %K)	60.0 / 40.0	61.0 / 39.0
Yaş (yıl)	68.4 ± 6.86	68.3 ± 6.86
Beden Kitle İndeksi (kg/m^2)	31.0 ± 6.2	31.0 ± 6.2
Sistolik Kan Basıncı (mm Hg)	145.3 ± 18.4	145.4 ± 18.1
Diyastolik Kan Basıncı (mm Hg)	80.1 ± 10.8	80.0 ± 10.7
Serum kreatinini (mg/dl)	1.0 ± 0.3	1.0 ± 0.3
GFR (ml/dak/1.73 m^2)	78.9 ± 21.2	79.0 ± 21.5

Jamerson K et al: N Engl J Med 359: 2417-2428, 2008

ACCOMPLISH

Avoiding Cardiovascular Events through Combination Therapy in Patients Living with Systolic Hypertension

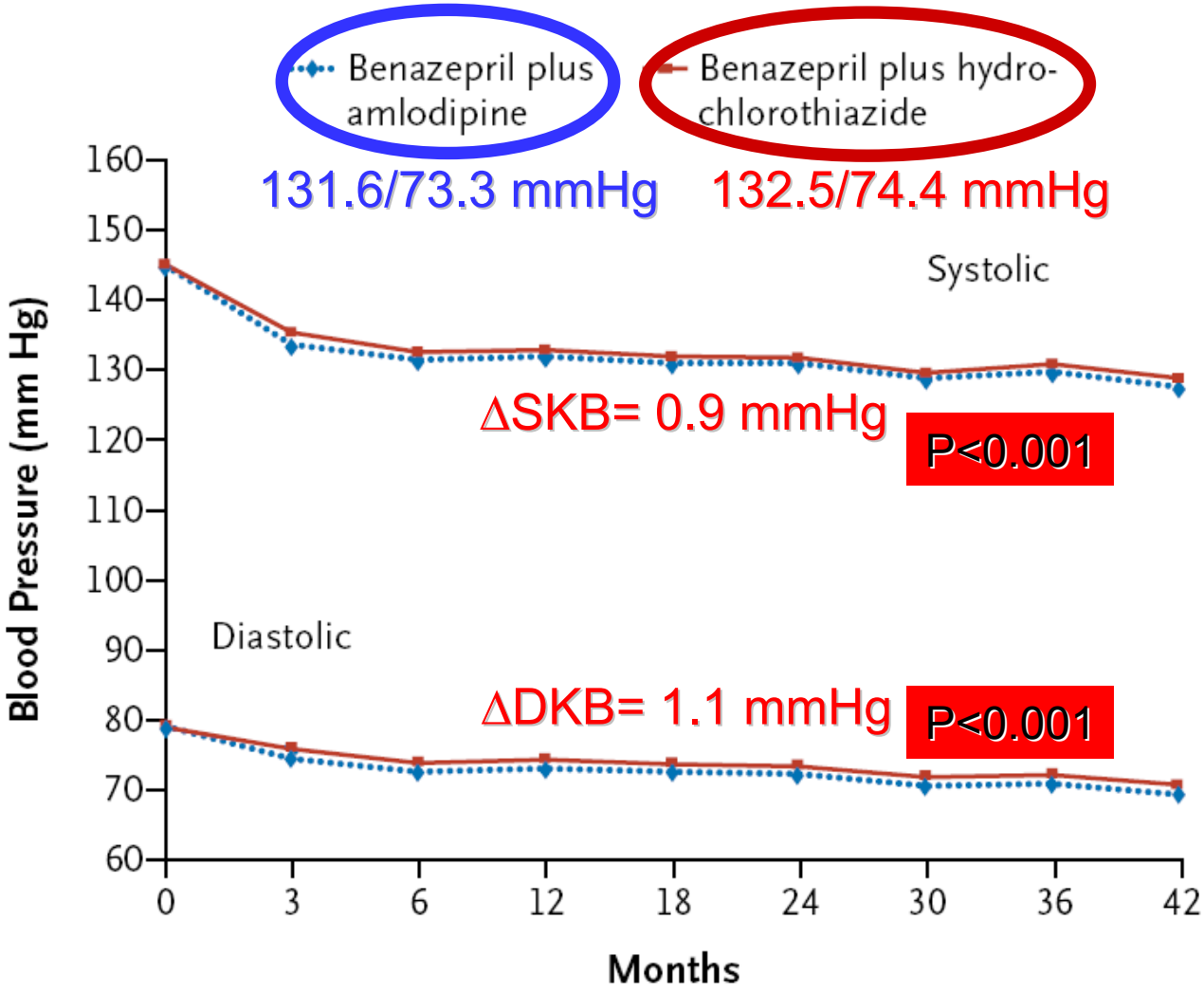


*Beta blokerler; alfa blokerler; klonidin; “loop” diüretikleri

Jamerson K et al: N Engl J Med 359: 2417-2428, 2008

ACCOMPLISH

Avoiding Cardiovascular Events through Combination Therapy in Patients Living with Systolic Hypertension

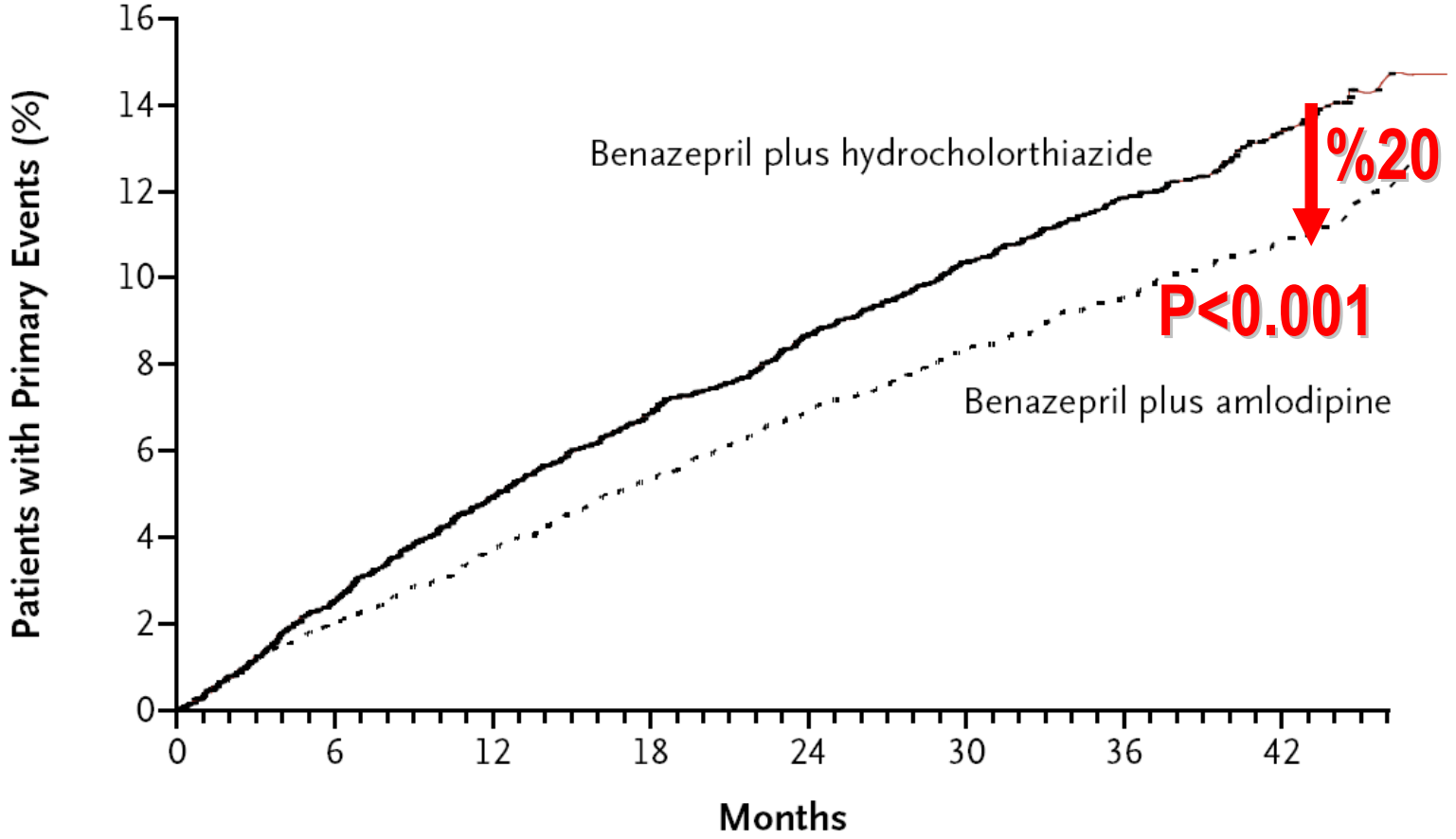


Jamerson K et al: N Engl J Med 359: 2417-2428, 2008

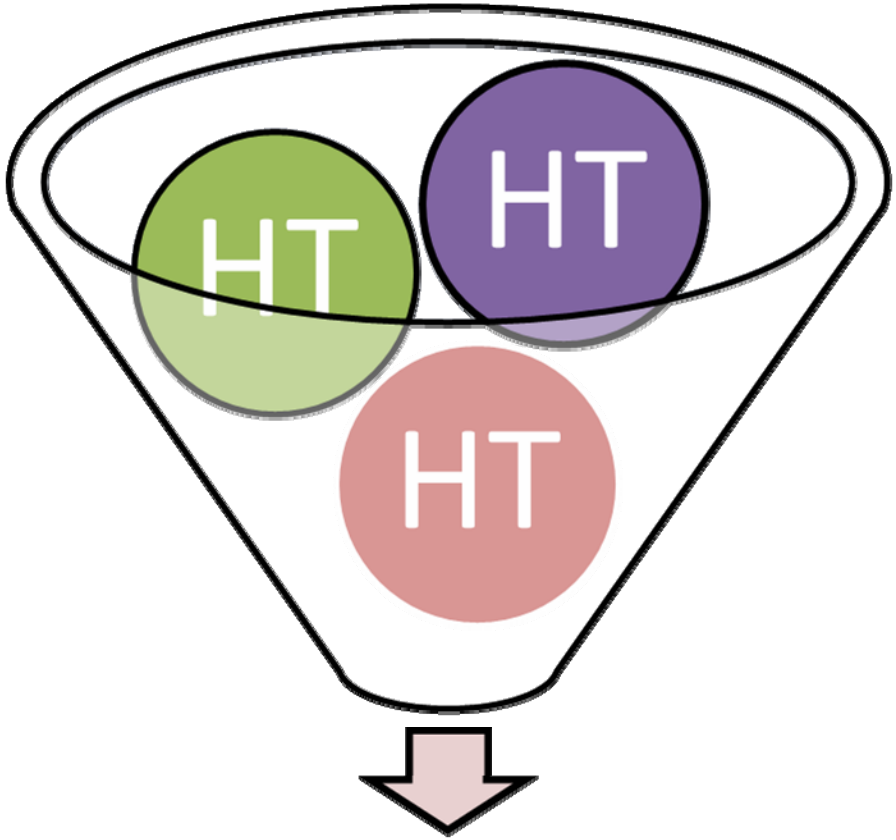
ACCOMPLISH

Avoiding Cardiovascular Events through Combination Therapy in Patients Living with Systolic Hypertension

Ortalama 36 aylık bir takip sonrasında, çalışma erken olarak sonlandırıldı !



Jamerson K et al: N Engl J Med 359: 2417-2428, 2008



HEDEF ???

Sabrınız için teşekkür ederim