Yeni Kanıtlar Işığında Hipertansiyon Tedavisi: Beta Blokerleri Nasıl Kullanmalıyız?

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KILAVUZLAR

- JNC VI (1997)
- WHO/ISH (1999)
- TKD (2000)
- JNC 7 (2003)
- ESC (2003)
- BHS (2004)

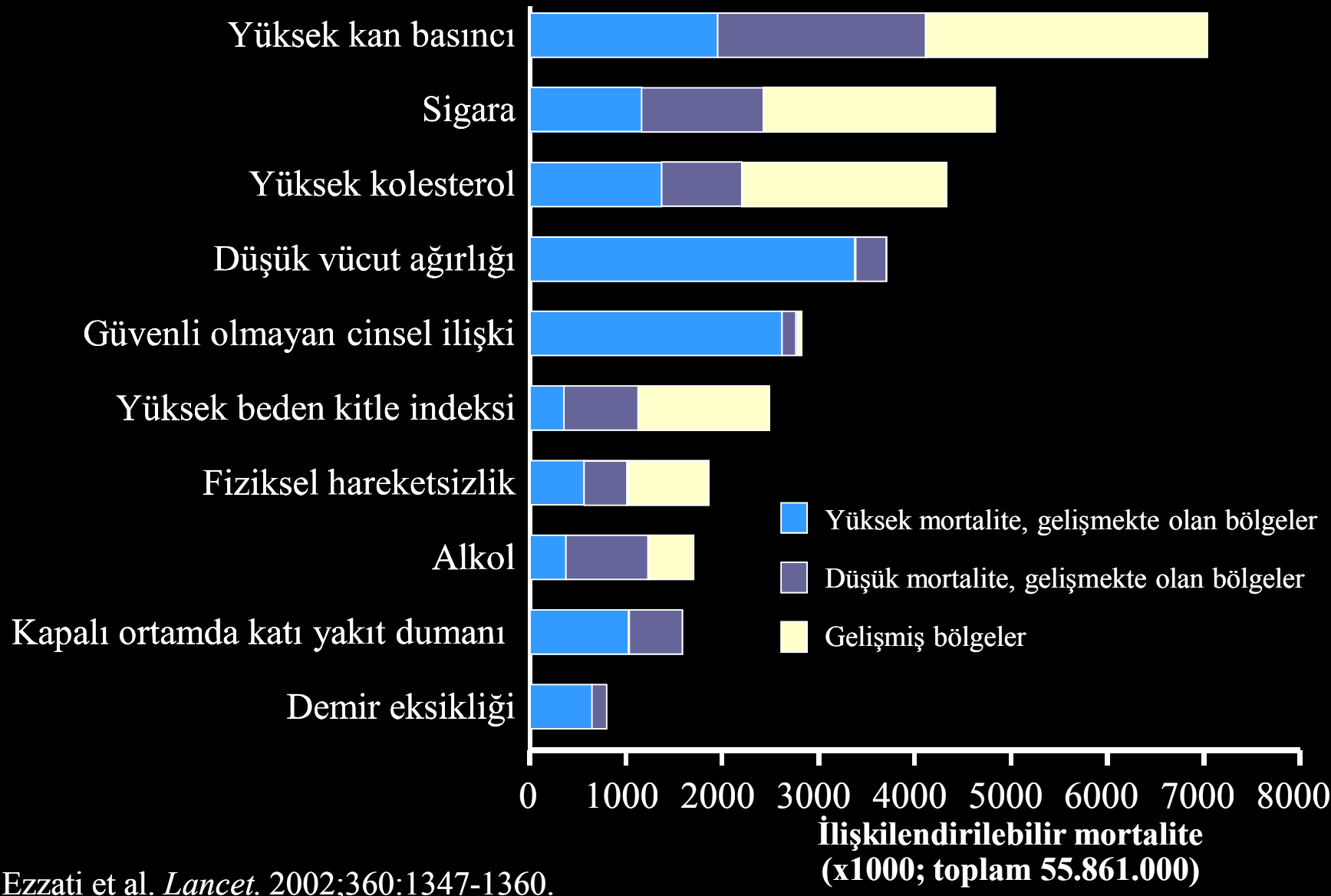
- NICE (2006)
- CHEP (2006)
- CHEP (2007)

Kılavuzların amacı

- Bu kılavuzlar Avrupa Hipertansiyon Birliği ve Avrupa Kardiyoloji Birliği tarafından atanan bir Uzman Komitesi tarafından hazırlanmış (ESC-ESH) ve Uluslararası Hipertansiyon Birliği tarafından onaylanmıştır
- Bu kılavuzlar, mevcut en iyi kanıtlar temel alınarak ve kılavuzların salt buyurucu olmaktan çok, eğitime yönelik bir amaca sahip olması gerektiği düşünülerek hazırlanmıştır.

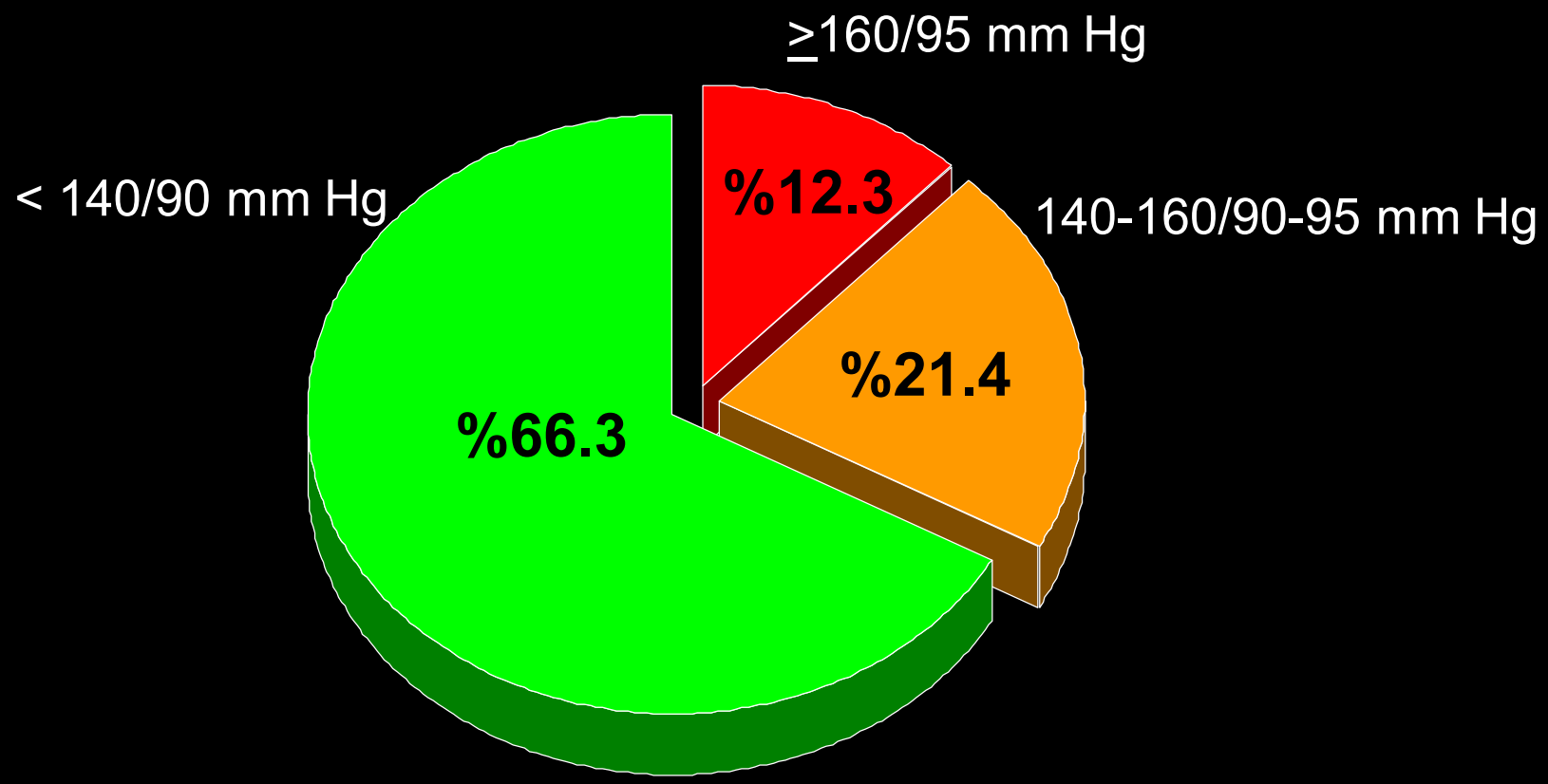
ESC-ESH/2003

2000 Yılında Global Mortalite: Hipertansiyon ve Diğer Risk Faktörlerinin Etkisi



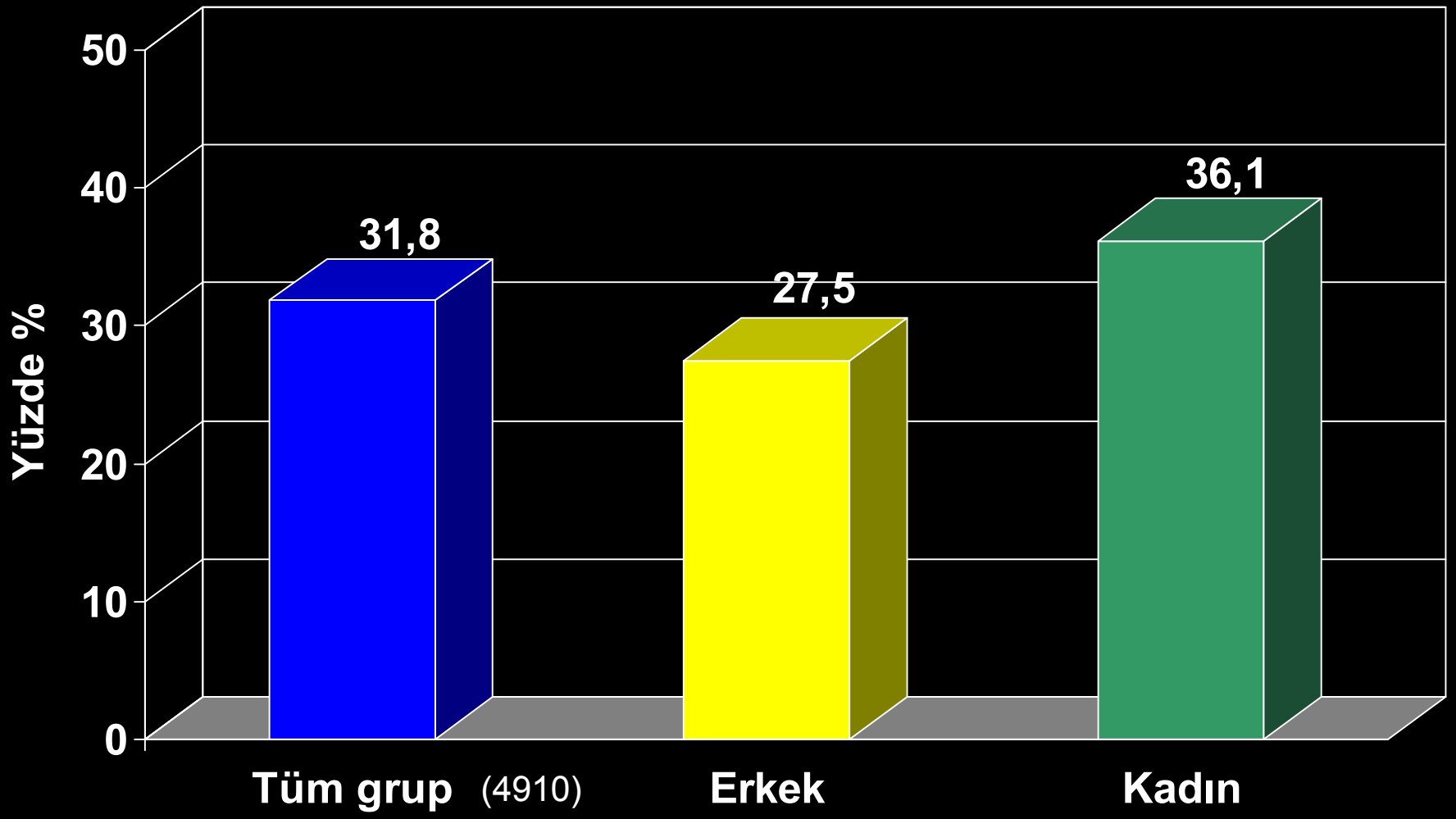
Ezzati et al. *Lancet*. 2002;360:1347-1360.

TÜRKiYE'DE HİPERTANSİYON SIKLIĞI



TEKHARF Çalışması

Hipertansiyon Prevalansı



TÜRK HİPERTANSİYON PREVALANS ÇALIŞMASI

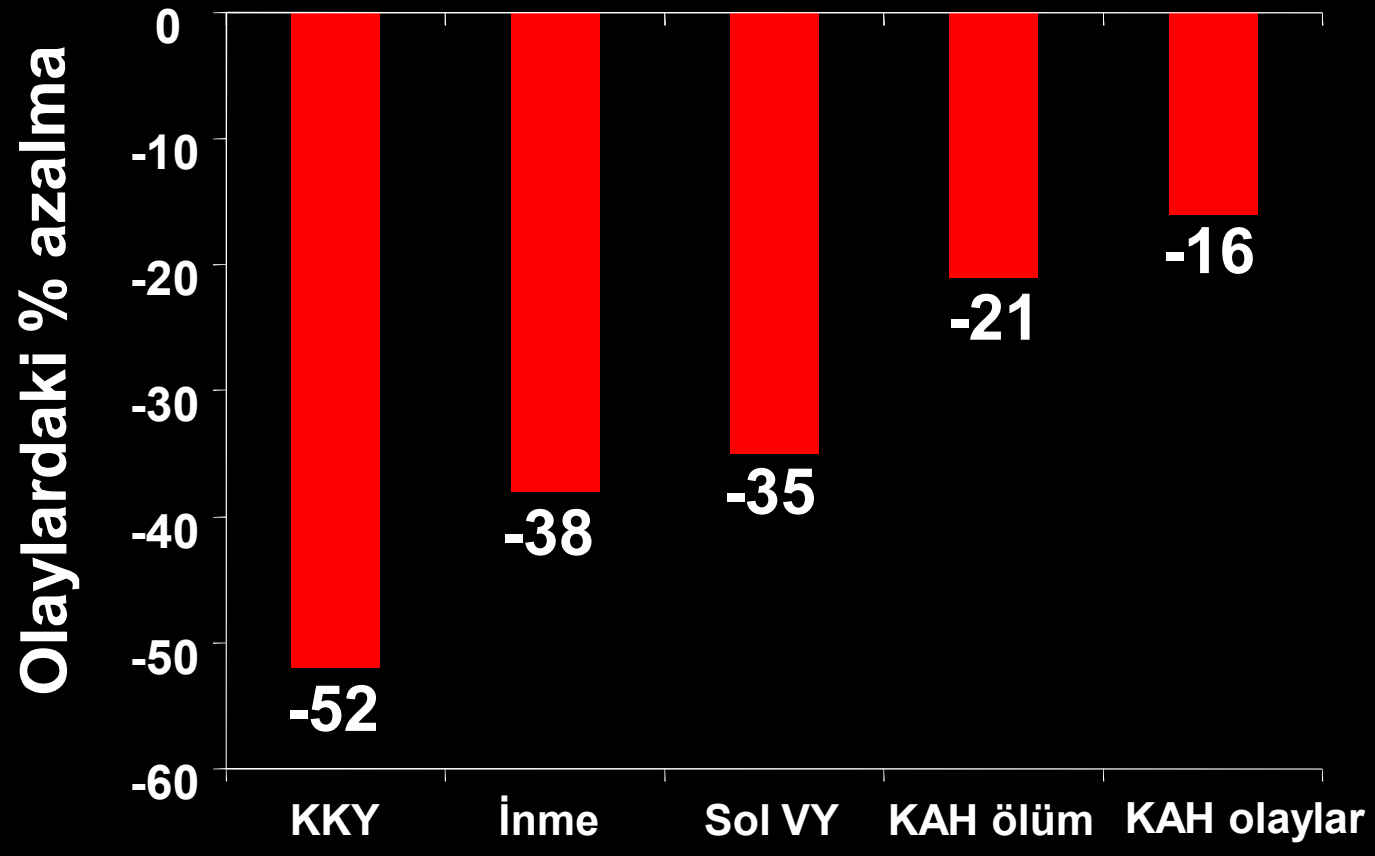
Kan Basıncını Düşürmenin Yararları

	Ortalama % Azalma
İnme İnsidansı	35–40
Miyokard İnfarktüsü	20–25
Kalp Yetersizliği	50

JNC 7

HT Tedavisinin Etkileri

Diüretik ve beta blokerlerle yapılan çalışmaların metaanalizi



JACC 1996, Arc Int Med 1993

Antihipertansif İlaçlar İçin Endikasyon ve Kontraendikasyonlar

Sınıf	Endikasyonlar	Kontraendikasyon	
		Zorunlu	Rölatif
Beta Blokerler	Anjina pektoris Post-miyokardiyal enfarktüs Konjestif kalp yetmezliği (titre edilir) Gebelik Taşiaritmiler	Astma Kronik obstrüktif akciğer hastalığı A-V blok (2-3)	Periferal vasküler hastalık Glukoz intoleransı Atletler ve fiziksel aktif hastalar

ESC 2003

JNC 7

Antihipertansif ilaç sınıflarının zorunlu endikasyonlarının klinik çalışmalara ve kılavuzlara göre sınıflanması

Hastalık	Önerilen ilaçlar: Diüretik	β bloker	ACEi	ARB	KKB	Aldosteron antagonisti	Klinik çalışmalar
Kalp yetersizliği	●	●	●	●		●	ACC/AHA Kalp Yetersizliği Kılavuzu, MERIT-HF, COPERNICUS, CIBIS, SOLVD, AIRE, TRACE, ValHEFT, RALES
Mİ sonrası		●	●			●	ACC/AHA post-MI kılavuzu, BHAT, SAVE, CAPRICORN, EPHESUS
Yüksek koroner hastalık riski	●	●	●		●		ALLHAT, HOPE, ANBP2, LIFE, CONVINCE
Diyabet	●	●	●	●	●		NKF-ADA Kılavuzu, UKPDS, ALLHAT
Kronik böbrek hastalığı			●	●			NKF Kılavuzu, Kaptopril Çalışması, RENAAL, IDNT, REIN, AASK
Rekürran inmeden korunma	●		●				PROGRESS

KB: Kan basıncı, ACEi: Anjiyotensin dönüştürücü enzim inhibiötrü, ARB: Anjiyotensin reseptör blokeri, KKB: Kalsiyum kanal blokeri

Antihipertansif tedavi algoritması

JNC 7

Yaşam tarzı değişiklikleri

Hedeflenen kan basıncına ulaşılamamışsa (<140/90 mmHg ya da diyabetikler veya kronik böbrek hastaları için <130/80 mmHg)

İlk ilaç seçenekleri

Zorunlu endikasyonu olmayan hipertansiyon

Zorunlu endikasyonu olan hipertansiyon

Evre 1 hipertansiyon
(sistolik KB 140-159 mmHg veya diyastolik KB 90-99 mmHg)
Çoğunlukla tiyazid diüretikleri kullanılır.
ACE inhibitörü, ARB, β bloker, KKB veya kombine tedavi de seçilebilir.

Evre 2 hipertansiyon
(sistolik KB ≥160 mmHg veya diyastolik KB ≥100 mmHg)
Çoğunlukla iki ilaç kombine edilir.
(Çoğunlukla tiyazid diüretikleri ve ACE inhibitörü veya ARB veya β bloker veya KKB)

Zorunlu endikasyonlar için ilaçlar
Gerektiğinde diğer antihipertansif ilaçlar
(Diüretikler, ACE inhibitörü, ARB, β bloker, KKB)

Hedeflenen kan basıncına ulaşılamamışsa

- Hedeflenen değere ulaşıncaya kadar dozajı optimize edin veya ek ilaç kullanın
- Bir hipertansiyon uzmanına danışmayı düşünün

KB: Kan basıncı, ACE: Anjiyotensin dönüştürücü enzim, ARB: Anjiyotensin reseptör blokeri, KKB: Kalsiyum kanal blokeri

İngiltere Hipertansiyon Cemiyeti Kan Basıncını Düşürücü İlaç Kombinasyonu Önerileri

	Genç (<55 yaş) ve siyahi değil	Yaşlı (>55 yaş) ve siyahi
Adım 1	**A (veya B*)**	**C veya D**
Adım 2	A (veya B*)	**C veya D**
Adım 3	A (veya B*)	
Adım 4 Dirençli Hipertansiyon	Ekle: alfa-bloker veya spironolakton veya diğer diüretikler	

A: ACE inhibitörü veya anjiyotensin reseptör blokeri **B: Beta bloker**
C: Kalsiyum kanal blokeri **D: Diüretik (tiyazid)**

Atenolol in hypertension: is it a wise choice?

Bo Carlberg, Ola Samuelsson, Lars Hjalmar Lindholm

Summary

Background Atenolol is one of the most widely used β blockers clinically, and has often been used as a reference drug in randomised controlled trials of hypertension. However, questions have been raised about atenolol as the best reference drug for comparisons with other antihypertensives. Thus, our aim was to systematically review the effect of atenolol on cardiovascular morbidity and mortality in hypertensive patients.

Methods Reports were identified through searches of *The Cochrane Library*, MEDLINE, relevant textbooks, and by personal communication with established researchers in hypertension. Randomised controlled trials that assessed the effect of atenolol on cardiovascular morbidity or mortality in patients with primary hypertension were included.

Findings We identified four studies that compared atenolol with placebo or no treatment, and five that compared atenolol with other antihypertensive drugs. Despite major differences in blood pressure lowering, there were no outcome differences between atenolol and placebo in the four studies, comprising 6825 patients, who were followed up for a mean of 4·6 years on all-cause mortality (relative risk 1·01 [95% CI 0·89–1·15]), cardiovascular mortality (0·99 [0·83–1·18]), or myocardial infarction (0·99 [0·83–1·19]). The risk of stroke, however, tended to be lower in the atenolol than in the placebo group (0·85 [0·72–1·01]). When atenolol was compared with other antihypertensives, there were no major differences in blood pressure lowering between the treatment arms. Our meta-analysis showed a significantly higher mortality (1·13 [1·02–1·25]) with atenolol treatment than with other active treatment, in the five studies comprising 17 671 patients who were followed up for a mean of 4·6 years. Moreover, cardiovascular mortality also tended to be higher with atenolol treatment than with other antihypertensive treatment. Stroke was also more frequent with atenolol treatment.

Interpretation Our results cast doubts on atenolol as a suitable drug for hypertensive patients. Moreover, they challenge the use of atenolol as a reference drug in outcome trials in hypertension.

Atenolol in hypertension: is it a wise choice?

- **4 çalışma, 6825 hasta atenolol vs plasebo**
- **5 çalışma, 17 671 hasta atenolol vs diğer antihipertansifler**

Bo Carlberg, Ola Samuelsson, Lars Hjalmar Lindholm
***Lancet* 2004; 364: 1684–89**

Atenolol in hypertension: is it a wise choice?

Beta Blokörler ile Diğer Antihipertansiflerin Karşılaştırılması :Meta-analiz

Sonlanım	BB ile Relatif risk (vs plasebo)	95% GA
İnme	1.16	1.04–1.30
MI	1.02	0.93–1.12
Tüm ölümler	1.03	0.99–1.08

Bo Carlberg, Ola Samuelsson, Lars Hjalmar Lindholm
***Lancet* 2004; 364: 1684–89**

Atenolol in hypertension: is it a wise choice?

Atenolol vs Diğer Antihipertansifler

Sonlanım	Atenolol ile RR	95% GA
İnme	1.26	1.15–1.38
MI	1.05	0.91–1.21
Tüm ölümler	1.08	1.02–1.14

Bo Carlberg, Ola Samuelsson, Lars Hjalmar Lindholm
***Lancet* 2004; 364: 1684–89**

Atenolol in hypertension: is it a wise choice?

Non-atenolol Beta Blokörler vs Diğer Antihipertansifler

Sonlanım	βB ile Relatif risk	95% GA
İnme	1.20	0.30–4.71
MI	0.86	0.67–1.11
Tüm Ölümler	0.89	0.70–1.12

Bo Carlberg, Ola Samuelsson, Lars Hjalmar Lindholm
***Lancet* 2004; 364: 1684–89**

Atenolol in hypertension: is it a wise choice?

Beta Blokör + Diüretik vs Diğer Antihipertansifler

Sonlanım	Beta Bloker ile RR	95% GA
İnme	1.09	0.98−1.21
MI	1.00	0.81−1.22
Tüm ölümler	0.97	0.89−1.05

Bo Carlberg, Ola Samuelsson, Lars Hjalmar Lindholm
***Lancet* 2004; 364: 1684–89**

Atenolol in hypertension: is it a wise choice?

We **did not analyse other blockers.** The effect of other blockers in cardiac failure, and after myocardial infarction, is well-documented. However,in large hypertension trials, few researchers have specifically studied the outcome of different blockers.Instead,beta blockers were most often considered as a group, which is also the case in hypertension guidelines.

Bo Carlberg, Ola Samuelsson, Lars Hjalmar Lindholm
***Lancet* 2004; 364: 1684–89**

Atenolol in hypertension: is it a wise choice?

Hence, based on the results of our meta-analyses and on the effects of atenolol in other cardiovascular disorders, **we have doubts about the suitability of atenolol** as a first-line antihypertensive drug and as a reference drug in outcome trials of hypertension.

Bo Carlberg, Ola Samuelsson, Lars Hjalmar Lindholm
***Lancet* 2004; 364: 1684–89**

REVIEW

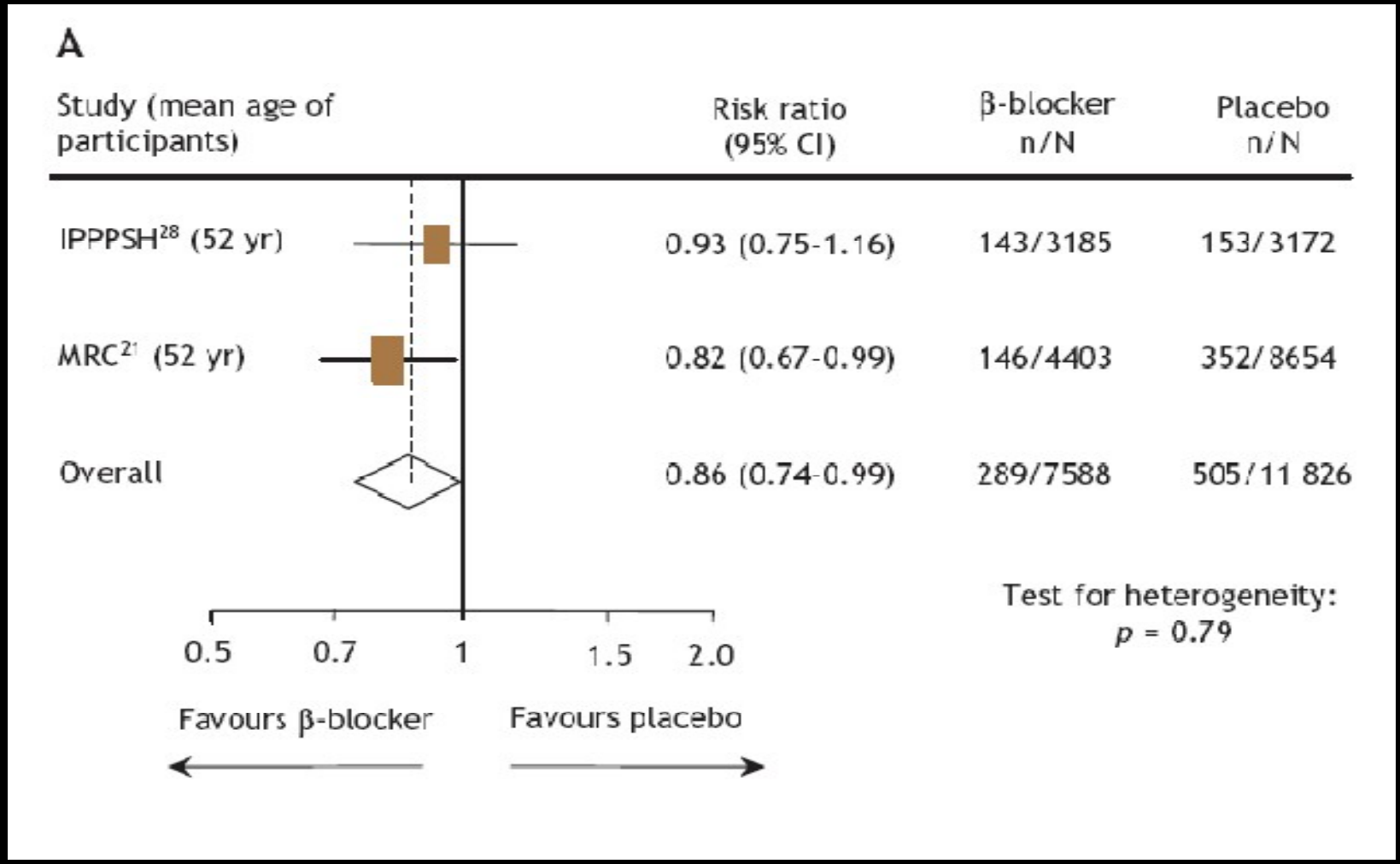
Re-examining the efficacy of β-blockers for the treatment of hypertension: a meta-analysis

Nadia Khan, Finlay A. McAlister

145 811 hasta , 21 çalışma

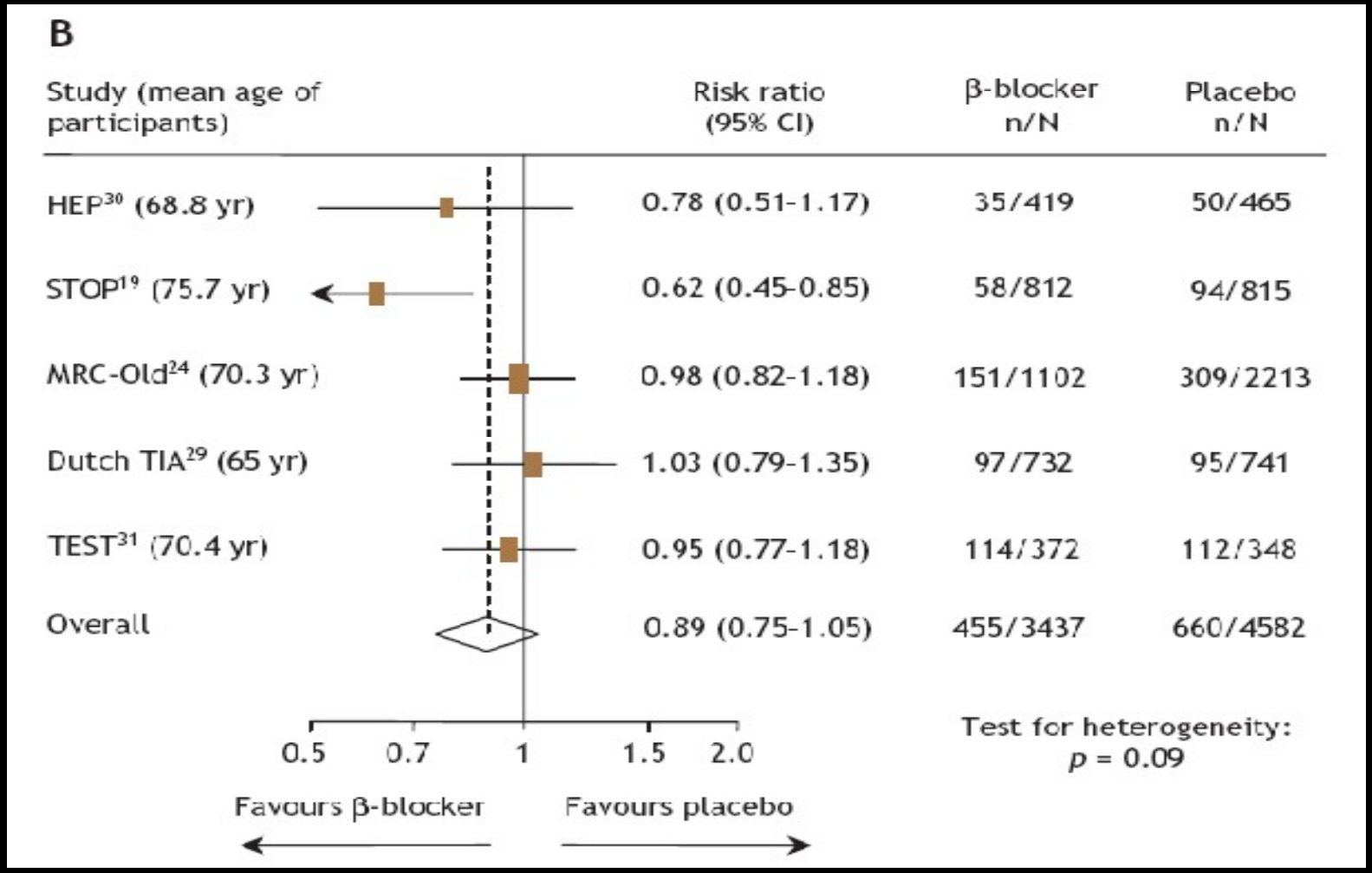
Canadian Medical Association Journal
(CMAJ) 2006;174(12):1737-42

Birleşik sonlanım noktaları için(ölüm, inme,MI) risk oranları (<60 yaş)



Khan N, A. McAlister FA . CMAJ 2006;174(12):1737-42

Birleşik sonlanım noktaları için (ölüm, inme,MI) risk oranları (> 60 yaş)



Khan N, A. McAlister FA . CMAJ 2006;174(12):1737-42

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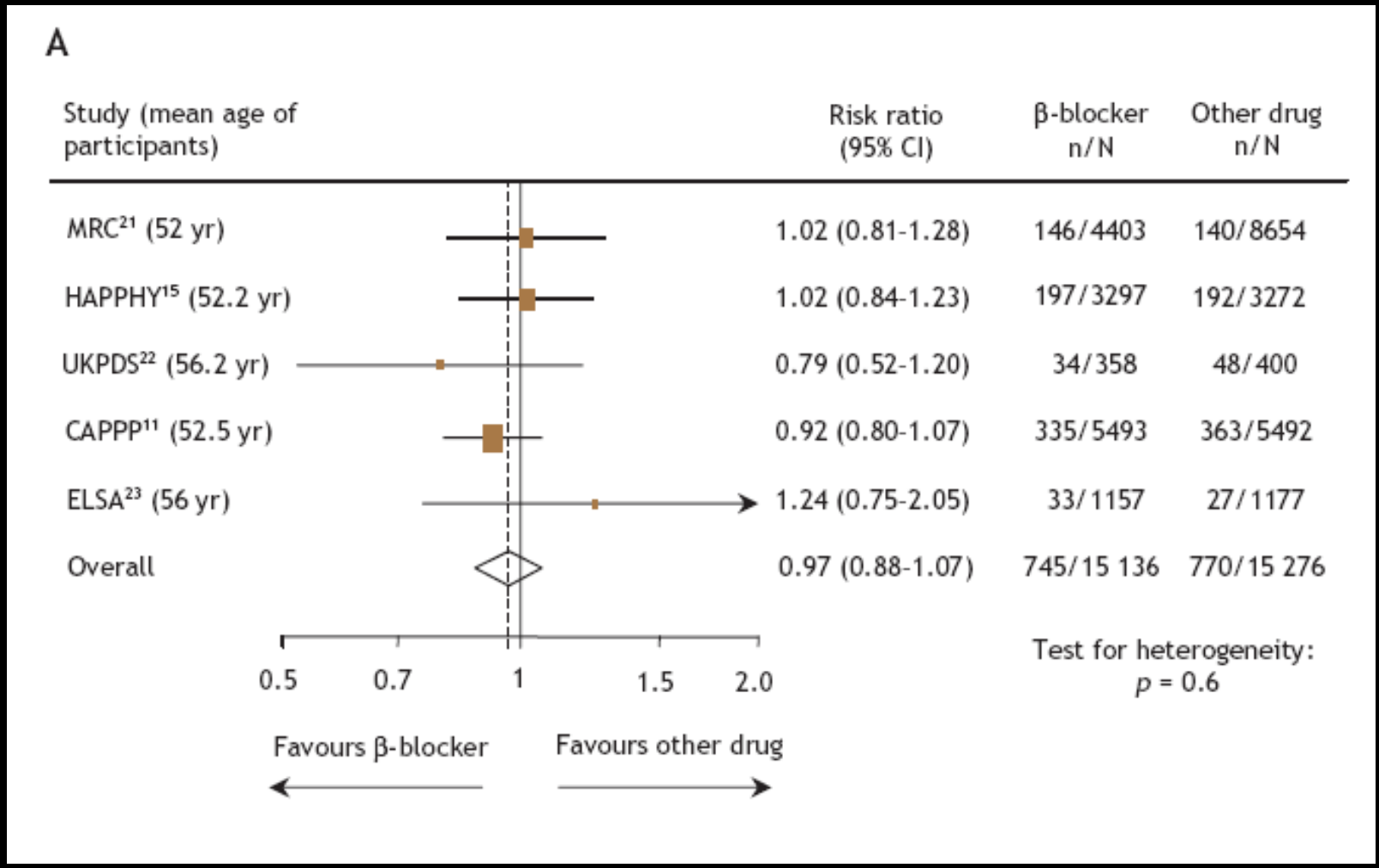

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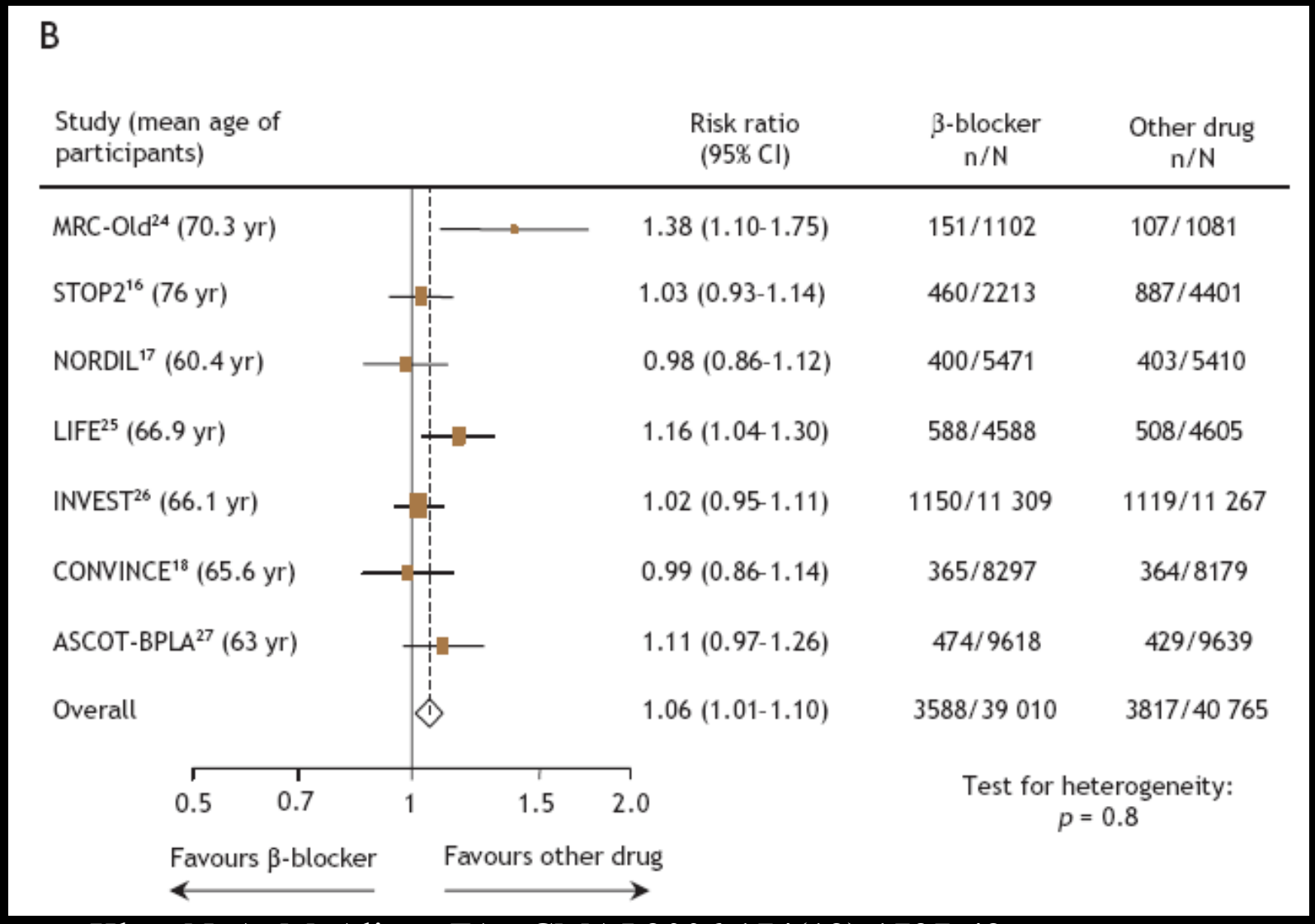

Khan N, A. McAlister FA . CMAJ 2006;174(12):1737-42

Yorum

Beta-blockers should not be considered firstline therapy for older hypertensive patients without another indication for these agents; however, in younger patients beta-blockers are associated with a significant reduction in cardiovascular morbidity and mortality.

Khan N, A. McAlister FA . CMAJ 2006;174(12):1737-42

Controversies in Cardiology 2

Controversies in hypertension

Norman M Kaplan, Lionel H Opie

Lancet 2006; 367: 168–76

Controversies in hypertension

- Two additional facts were recorded: first, the commonly used blocker, **atenolol**, provided no cardioprotection; second, diuretic-based regimens with or without blocker provoked more new cases of diabetes than comparator regimens

Norman M Kaplan, Lionel H Opie Lancet 2006; 367: 168–76

Controversies in hypertension

But are all blockers equally ineffective? Important reservations must be made.

First, the failure of atenolol-based therapy might be caused by the absence of 24-h efficacy when used once a day.

Norman M Kaplan, Lionel H Opie Lancet 2006; 367: 168–76

Controversies in hypertension

Second, other blockers might give different results. However, a meta-analysis of blockers as a group showed that the risk of stroke was 16% higher for blockers than for other drugs, and that by comparison with placebo or no therapy, blockers reduced stroke by about half of that predicted from previous studies. **More modern blockers such as** carvedilol and nebivolol **could be safer than others**, with less glucose intolerance, but few major outcome studies in hypertension have investigated this possibility.

Norman M Kaplan, Lionel H Opie Lancet 2006; 367: 168–76

Controversies in hypertension

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Norman M Kaplan, Lionel H Opie Lancet 2006; 367: 168–76

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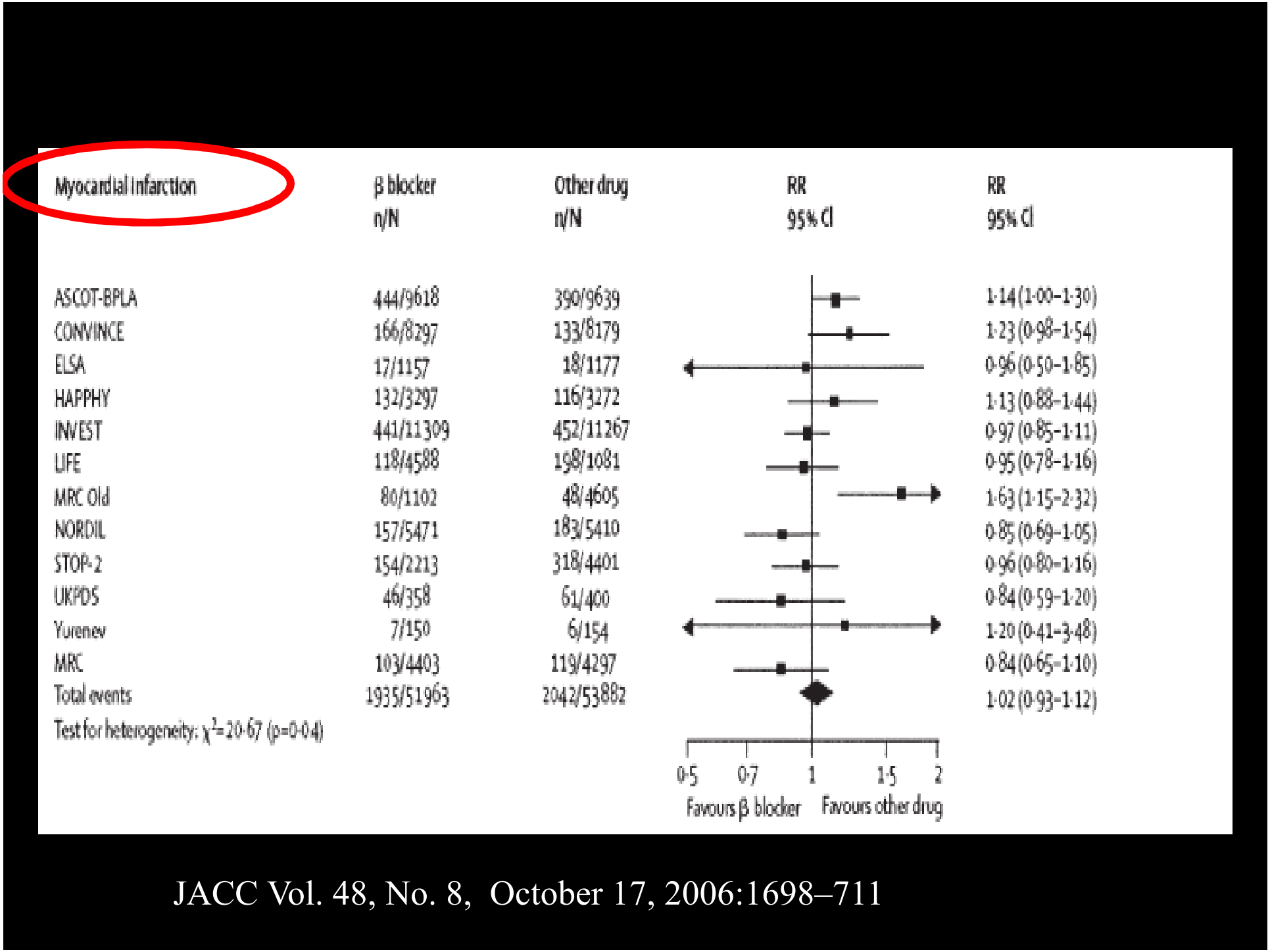
YEAR IN CARDIOLOGY SERIES

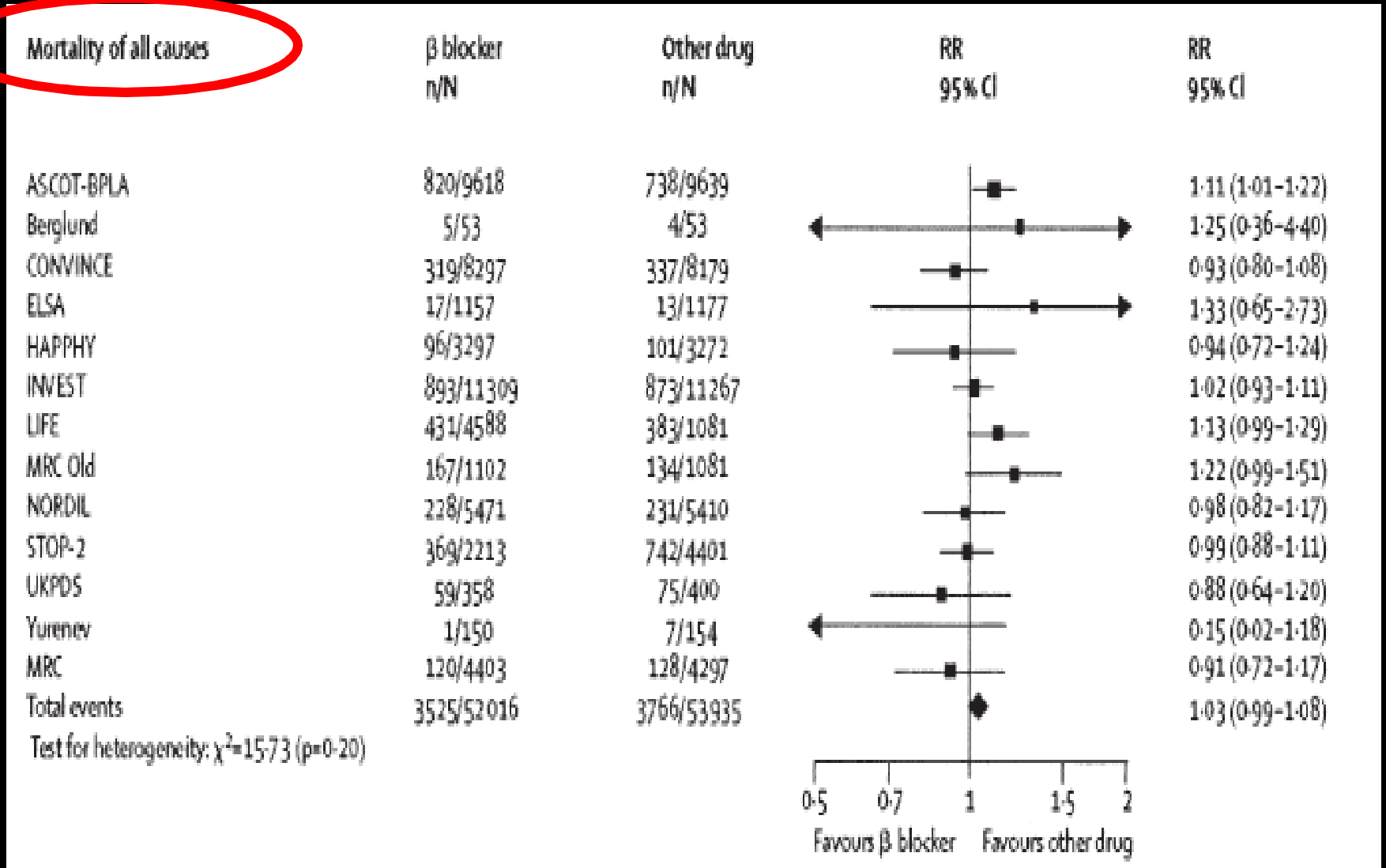
The Year in Hypertension

Bryan Williams, MD, FRCP, FAHA
Leicester, United Kingdom

JACC Vol. 48, No. 8, October 17, 2006:1698–711



JACC Vol. 48, No. 8, October 17, 2006:1698–711



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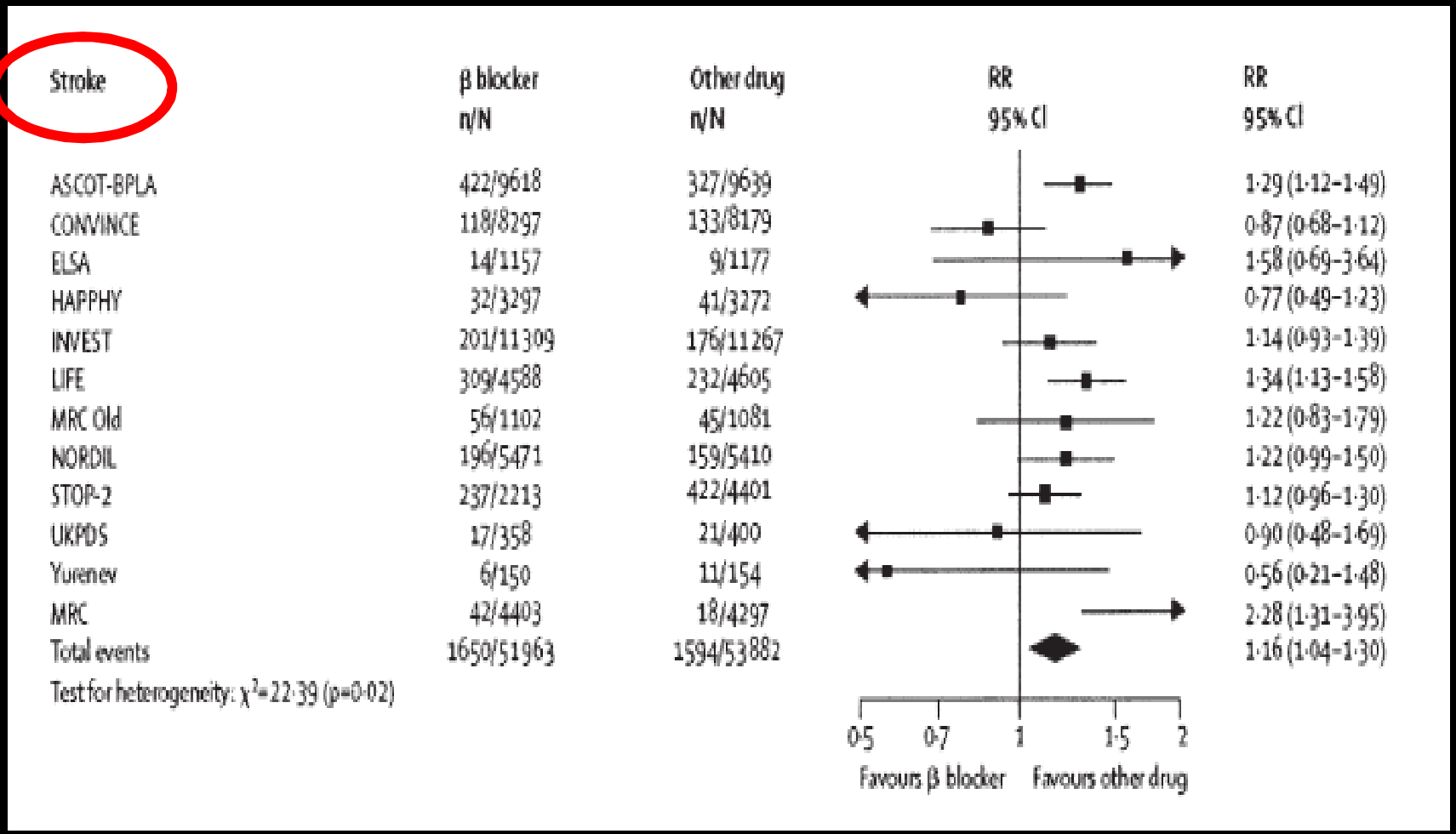
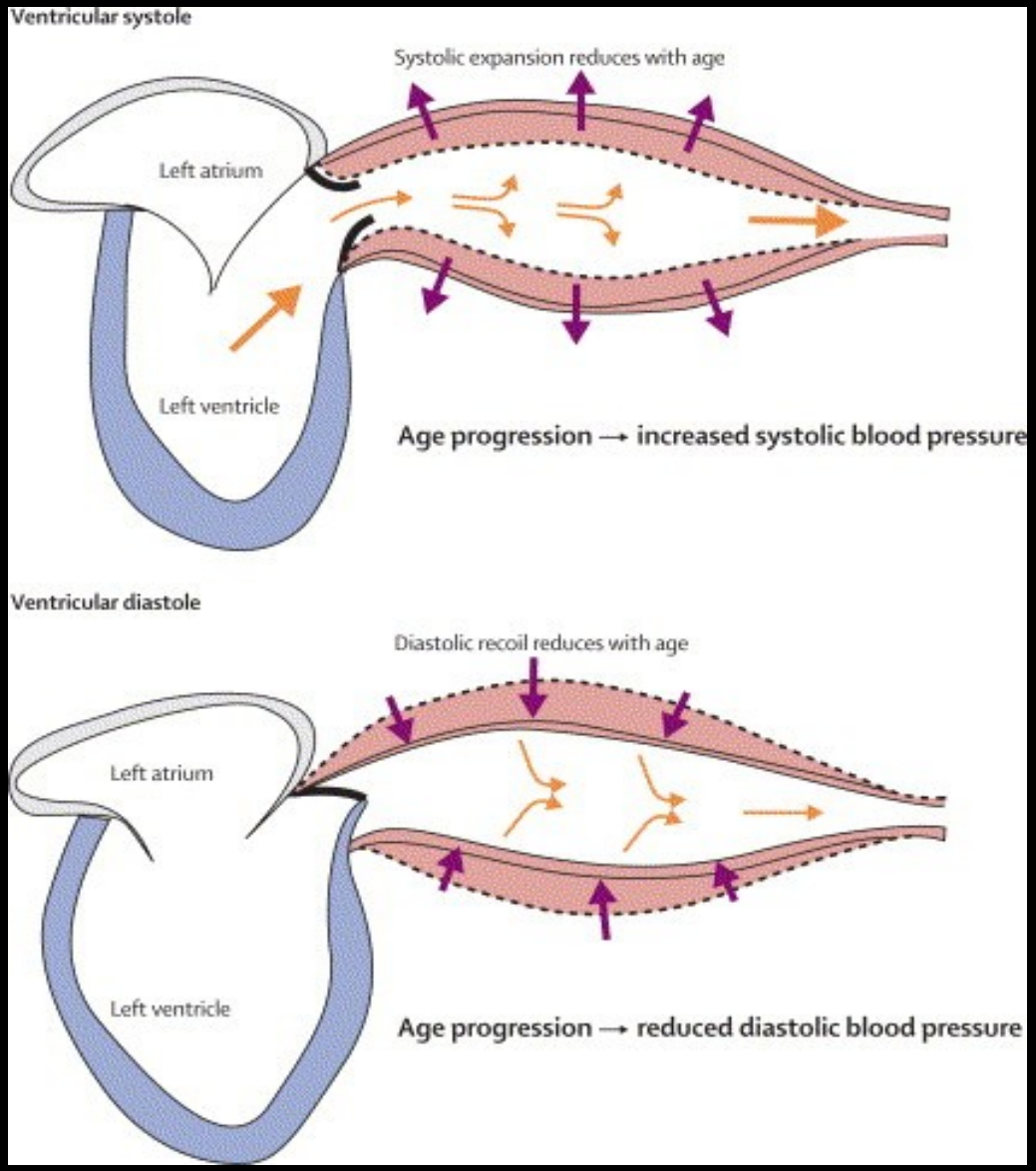
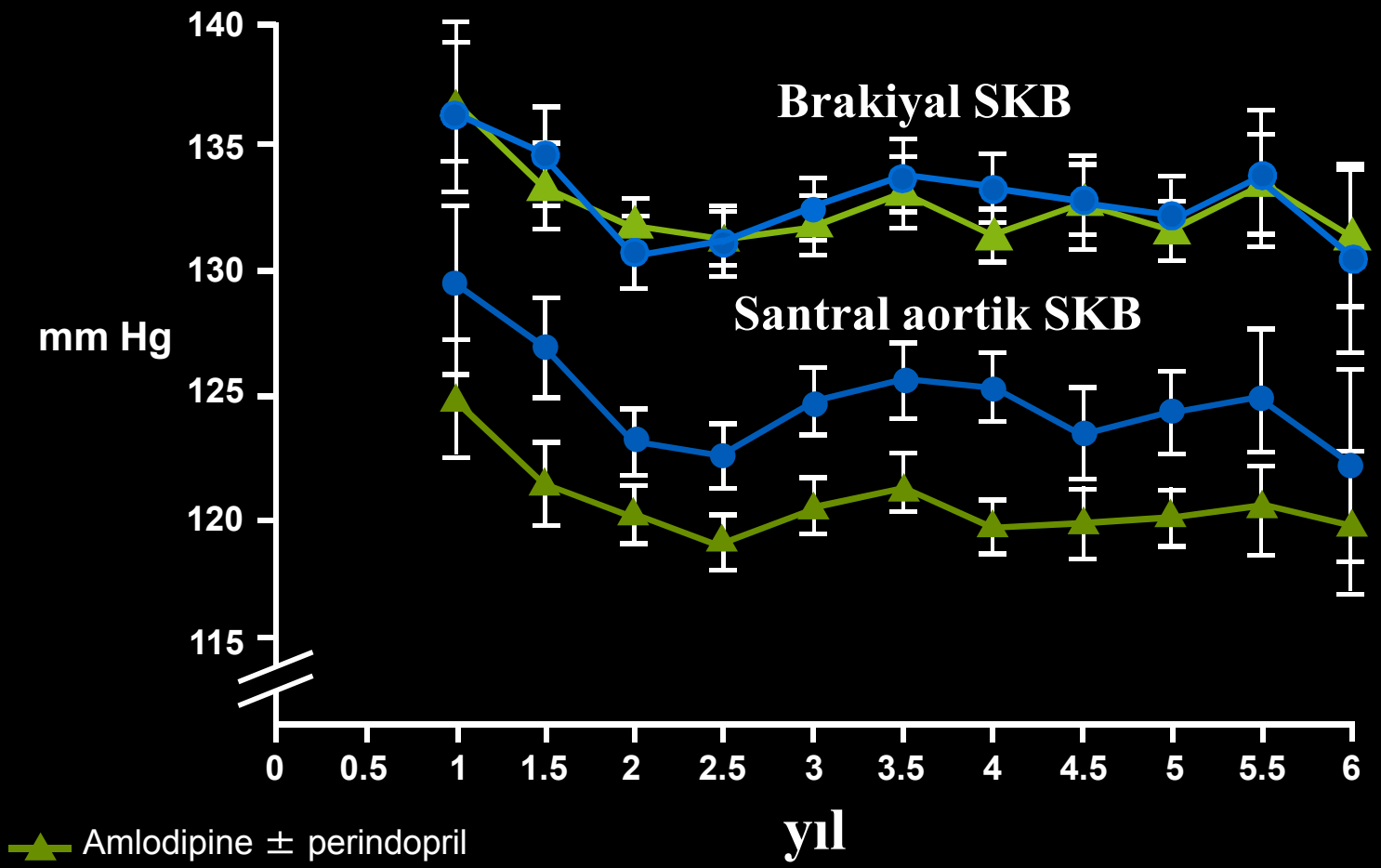


JACC Vol. 48, No. 8, October 17, 2006:1698–711



Norman M Kaplan, Lionel H Opie Lancet 2006; 367: 168–76

CAFE: Santral aortik basınç



CAFE Investigators. *Circulation*. 2006;113:1213-25.

N° 82429 Different pattern of peripheral versus central blood pressure in hypertensive patients treated with beta-blockers either with or without vasodilating properties

YEAR IN CARDIOLOGY SERIES
The Year in Hypertension

It is unclear whether the outcomes would be similar with other beta-blockers, especially those with different pharmacologic properties.

JACC Vol. 48, No. 8, October 17, 2006:1698–711

BÜTÜN BETA BLOKÖRLER AYNI MI?

Expert consensus document on beta adrenergic receptor blockers

β-blocker	ISA	Lipid solubility	Peripheral vasodilation	i.v.	Average daily oral dose
I. Non-selective ($\beta_1 + \beta_2$) adrenergic antagonists					
Carteolol	+	Low			2.5–20 mg once/twice daily
Nadolol	0	Low			40–320 mg once daily
Penbutolol	+	Moderate			20–80 mg once/twice daily
Pindolol	++	High			10–40 mg twice daily
Propranolol	0	High		+	40–180 mg twice daily
Sotalol	0	Low		+	
Timolol	0	High			5–40 mg twice daily
II. Selective β_1-adrenergic antagonists					
Acebutolol	+	Moderate			200–800 mg once/twice daily
Atenolol	0	Low		+	25–100 mg once daily
Betaxolol	0	Moderate			5–20 mg once daily
Bisoprolol	0	Moderate			2.5–10 mg once daily
Celiprolol	+	Moderate	+		200–600 mg once daily
Esmolol	0	Low		+	Only i.v.
Metoprolol	0	High		+	50–100 mg once/twice daily
Nebivolol	0		+		2.5–5 mg once daily
III. α_1- and β-adrenergic antagonists					
Bucindolol	+	Moderate	+		25–100 mg twice daily
Carvedilol*	0	Moderate	+		3.125–50 mg twice daily
Labetalol	+	Low	+		200–800 mg twice daily

European Heart Journal (2004) 25, 1341–1362

Effects of nebivolol and atenolol on insulin sensitivity and haemodynamics in hypertensive patients

Luc Poirier[a], Jean Cléroux[a], André Nadeau[b] and Yves Lacourcière[a]

Journal of Hypertension 2001, 19:1429±1435

Table 1 Effects of 16 weeks of double-blind treatment with nebivolol or atenolol compared to placebo on clinic and ambulatory blood pressures as well as on glucose and insulin homeostasis parameters

Variable	Placebo	Nebivolol	Atenolol
Clinic values (seated)			
SBP/DBP (mmHg)	160 ± 11/101 ± 4	148 ± 21***/92 ± 8***	147 ± 20***/91 ± 5***
Heart rate (beats/min)	78 ± 2	67 ± 7***	66 ± 11***†
Ambulatory monitoring			
24 h means			
SBP/DBP (mmHg)	152 ± 11/90 ± 5	138 ± 16***/81 ± 8***	136 ± 19***/78 ± 9***†
Heart rate (beats/min)	75 ± 9	66 ± 7***	61 ± 7*††
Daytime			
SBP/DBP (mmHg	158 ± 10/94 ± 6	142 ± 16***/84 ± 8***	138 ± 17***/81 ± 9***††
Heart rate (beats/min)	79 ± 9	70 ± 7***	63 ± 8***†††
Night-time			
SBP/DBP (mmHg)	144 ± 14/82 ± 7	131 ± 20***/75 ± 9***	131 ± 23***/73 ± 12***
Heart rate (beats/min)	67 ± 9	60 ± 7***	57 ± 7***†
CLAMP			
Glucose disposal rate (*M*) (mg/kg per min)	4.62 ± 2.04	4.30 ± 2.17	3.89 ± 1.68*
Mean insulin concentration (*I*) (pmol/l)	672 ± 150	723 ± 168	722 ± 157
Insulin sensitivity index (*M*/*I*)	0.74 ± 0.40	0.65 ± 0.39	0.58 ± 0.33**
IVGTT			
Glucose disappearance rate (*K*) (min^{-1})	1.12 ± 0.34	1.16 ± 0.41	1.00 ± 0.31*††
Peak insulin response (pmol/l)	322 ± 231	347 ± 266	350 ± 287
Insulin AUC (nmol/l.min) 0–120 min	38 ± 19	42 ± 27	46 ± 28
Glucose AUC (mmol/l.min) 0–120 min	1258 ± 177	1244 ± 229	1323 ± 190*††

Data are means ± SD. SBP/DBP, systolic/diastolic blood pressure; AUC, area under the curve; IVGTT, intravenous glucose tolerance test.
* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$ versus placebo; † $P < 0.05$, †† $P < 0.01$, ††† $P < 0.001$ versus nebivolol.

Conclusions:……

insulin sensitivity was preserved with nebivolol but not with atenolol.

Journal of Hypertension 2001, 19:1429±1435

Nebivolol Reverses Endothelial Dysfunction in Essential Hypertension

A Randomized, Double-Blind, Crossover Study

Nikolaos Tzemos, MRCP; Pitt O. Lim, MRCP; Thomas M. MacDonald, MD, FRCP, FESC

Circulation. 2001;104:511-514

Conclusions

- Nebivolol/bendrofluazide increased both stimulated and basal endothelial nitric oxide release, whereas for the same degree of blood pressure control, atenolol/bendrofluazide had no effect on nitric oxide bioactivity. Thus, nebivolol may offer additional vascular protection in treating hypertension.

***Circulation*. 2001;104:511-514**

Influence of nebivolol and enalapril on metabolic parameters and arterial stiffness in hypertensive type 2 diabetic patients

Thomas Kaiser[a], Tim Heise[b,c], Leszek Nosek[b], Uta Eckers[b] and Peter T. Sawicki[a]

J Hypertens 24:1397–1403 , 2006.

Influence of nebivolol and enalapril on metabolic parameters and arterial stiffness in hypertensive type 2 diabetic patients

Table 2 Results: parameters of total body insulin sensitivity, blood vessel insulin sensitivity and arterial stiffness

	Nebivolol			Enalapril			
Parameter	First visit	Last visit	Δ[a]	First visit	Last visit	Δ[a]	P[b]
S_I (ml/min/m^2/μU/ml)	1.457 ± 0.624	1.48 ± 0.94	+0.02 ± 1.16	1.59 ± 0.86	1.36 ± 0.67	−0.23 ± 0.73	0.89
M_{low} (mg/m^2/min/kg)	2.982 ± 1.9	4.116 ± 2.898	+1.134 ± 2.126	3.791 ± 2.105	3.814 ± 1.988	+0.023 ± 1.291	0.35
M_{high} (mg/m^2/min/kg)	6.252 ± 2.841	7.133 ± 2.383	+0.881 ± 1.864	7.302 ± 2.988	6.595 ± 2.291	−0.707 ± 1.787	0.54
M/I_{low} (mg/m^2/min/kg/μU/ml)	0.046 ± 0.041	0.071 ± 0.072	+0.025 ± 0.051	0.056 ± 0.042	0.063 ± 0.053	+0.007 ± 0.022	0.83
M/I_{high} (mg/m^2/min/kg/μU/ml)	0.035 ± 0.02	0.043 ± 0.023	+0.008 ± 0.01	0.041 ± 0.024	0.041 ± 0.023	0 ± 0.01	0.38
MCR_{low} (mg/m^2/min/kg/mg/ml)	0.033 ± 0.021	0.046 ± 0.031	+0.013 ± 0.023	0.042 ± 0.023	0.042 ± 0.021	0 ± 0.014	0.78
MCR_{high} (mg/m^2/min/kg/mg/ml)	0.07 ± 0.032	0.08 ± 0.026	+0.01 ± 0.02	0.082 ± 0.034	0.073 ± 0.026	−0.009 ± 0.021	0.27
ΔLBF (ml/100 ml tissue/min)	−0.34 ± 1.58	−0.61 ± 2.34	−0.27 ± 2.11	0.3 ± 0.74	0.26 ± 0.8	−0.04 ± 1.1	0.8
LBF_{low} (ml/100 ml tissue/min)	3.96 ± 2.05	3.66 ± 2.39		2.92 ± 1.34	2.96 ± 1.05		
LBF_{high} (ml/100 ml tissue/min)	3.62 ± 1.55	3.05 ± 1.34		3.22 ± 1.3	3.22 ± 1.33		
$LBF_{max(low)}$ (ml/100 ml tissue/min)	6.11 ± 2.85	5.5 ± 2.75	−0.61 ± 2.34	4.59 ± 1.67	4.8 ± 2.14	+0.21 ± 2.03	0.63
$LBF_{max(high)}$ (ml/100 ml tissue/min)	5.87 ± 2.51	5.65 ± 2.2	−0.22 ± 1.91	5.44 ± 2.51	4.75 ± 1.76	−0.69 ± 2.8	0.92
ΔAI (%)	−5 ± 13.6	2.4 ± 10.9	+7.3 ± 13.3	−1 ± 16.7	−5.5 ± 21.8	−4.4 ± 25.0	0.52
AI_{low} (%)	143 ± 17.3	136.4 ± 12.4		157.3 ± 52.4	147.2 ± 22.6		
AI_{high} (%)	138 ± 19.6	138.8 ± 18.6		156.3 ± 56.2	141.8 ± 14.6		
ΔPWV (m/s)	−0.1 ± 1.2	0.2 ± 1.6	+0.3 ± 2.2	0.3 ± 1.2	1.0 ± 2.4	+0.7 ± 2.5	0.52
PWV_{low} (m/s)	10.3 ± 1.6	10.2 ± 2.7		10.8 ± 1.5	10.1 ± 1.9		
PWV_{high} (m/s)	10.2±1.2	10.4 ± 2.0		11.0 ± 1.4	11.1 ± 2.1		

J Hypertens 24:1397–1403 , 2006.

Influence of nebivolol and enalapril on metabolic parameters and arterial stiffness in hypertensive type 2 diabetic patients

Conclusions :This pilot study shows that the combined measurement of insulin sensitivity, blood flow and arterial stiffness is feasible. Nebivolol and enalapril did not show different effects with regard to these parameters in hypertensive diabetic patients. If these results are confirmed in larger clinical trials, this would argue against the reservations against beta-blockers as drugs of first choice in patients with diabetes because of potential metabolic side-effects.

J Hypertens 24:1397–1403 , 2006.

Metabolic effects of β-blockers: importance of dissociating newer from conventional agents

Pantelis A. Sarafidis and George L. Bakris

Journal of Hypertension 2007, Vol 25 No 1

Metabolic effects of β-blockers: importance of dissociating newer from conventional agents

Pantelis A. Sarafidis and George L. Bakris

However, there is considerable evidence suggesting that within the class of b-blockers there are major differences between the various agents because newer compounds with vasodilating properties have a much less adverse metabolic profile

Journal of Hypertension 2007, Vol 25 No 1

Metabolic effects of β-blockers: importance of dissociating newer from conventional agents

Pantelis A. Sarafidis and George L. Bakris

This findings indicate a neutral effect of nebivolol on insulin sensitivity, but small sample sizes and other design issues could have somehow limited the relevant conclusions.

Journal of Hypertension 2007, Vol 25 No 1

NITRIC OXIDE, ERECTILE DYSFUNCTION AND BETA-BLOCKER TREATMENT (MR NOED STUDY): BENEFIT OF NEBIVOLOL VERSUS METOPROLOL IN HYPERTENSIVE MEN

Clinical and Experimental Pharmacology and Physiology (2007) **34**, 327–331

Beneficial effects of switching from β-blockers to nebivolol on the erectile function of hypertensive patients

Asian J Androl 2006; 8 (2): 177–182

Yeni Kanıtlar Işığında Hipertansiyon Tedavisi: Beta Blokerleri Nasıl Kullanmalıyız?

Quick reference guide

Issue date: June 2006

Hypertension: management of hypertension in adults in primary care

National Institute for Health and Clinical Excellence (NICE)
Issue date: June 2006

www.nice.org.uk

Management of hypertension in adults in primary care-June 2006

Thresholds and targets

Hypertension

Persistent raised blood pressure:

- measured at the past two visits and
- systolic or diastolic pressure or both are above 140/90 mmHg.

Threshold for offering drug treatment

Offer treatment to patients with:

- blood pressure of more than 160/100 mmHg or
- isolated systolic hypertension (systolic blood pressure of more than 160 mmHg) or
- blood pressure of more than 140/90 mmHg and:
  - 10-year CVD risk of at least 20%, or
  - existing CVD or target organ damage.

Treatment targets

The aim of treatment is:

- to reduce blood pressure to 140/90 mmHg or below.

www.nice.org.uk

İngiltere Hipertansiyon Cemiyeti Kan Basıncını Düşürücü İlaç Kombinasyonu Önerileri

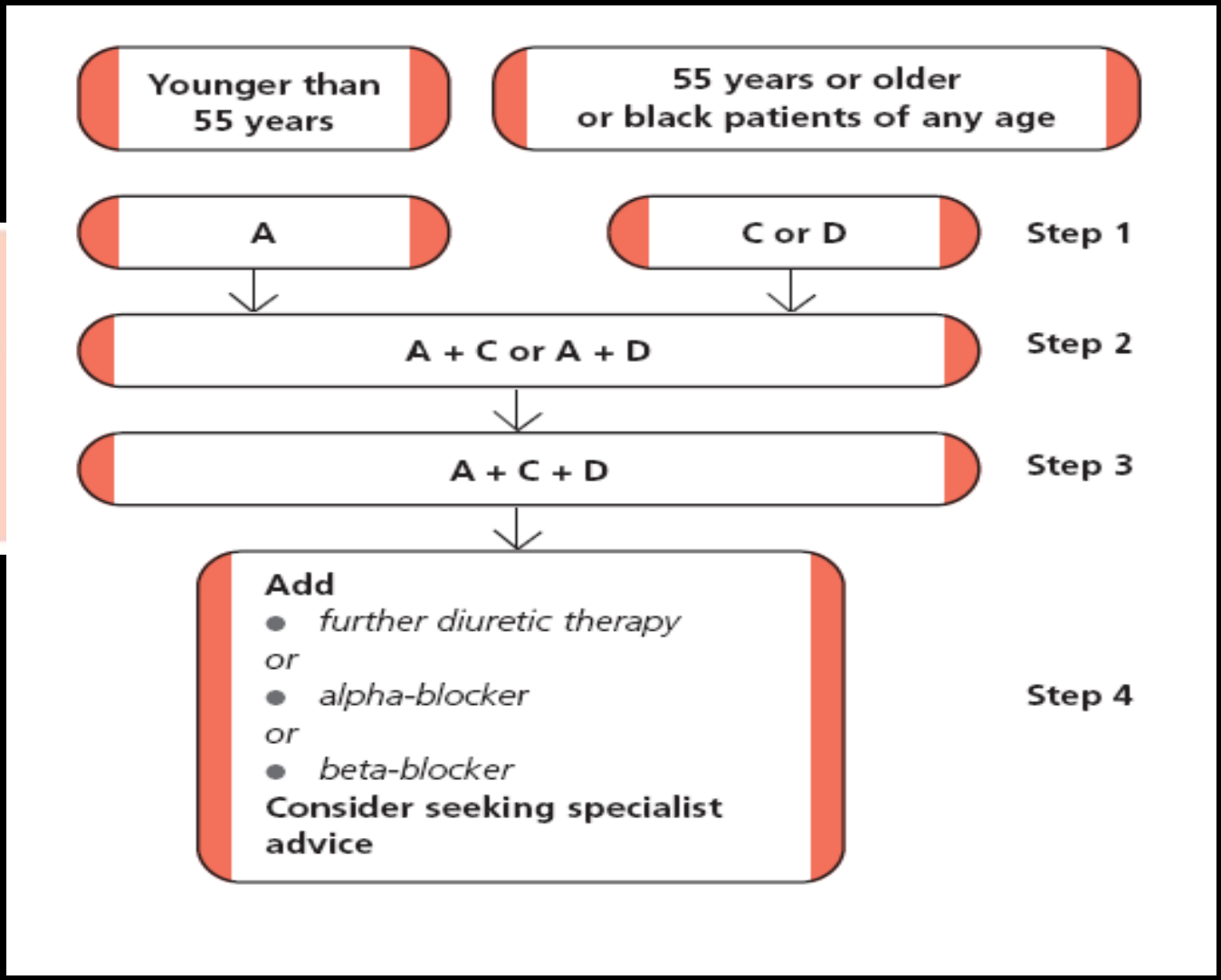
	Genç (<55 yaş) ve siyahi değil	Yaşlı (>55 yaş) ve siyahi
Adım 1	**A (veya B*)**	**C veya D**
Adım 2	A (veya B*)	**C veya D**
Adım 3	A (veya B*)	
Adım 4 Dirençli Hipertansiyon	Ekle: alfa-bloker veya spironolakton veya diğer diüretikler	

A: ACE inhibitörü veya anjiyotensin reseptör blokeri **B: Beta bloker**
C: Kalsiyum kanal blokeri **D: Diüretik (tiyazid)**

*B ve D kombinasyonu diğer tedavilere göre yeni DM başlama riskini arttırır.

Williams, B. et al. BMJ 2004;328:634-640

Management of hypertension in adults in primary care-June 2006



Abbreviations:
A = ACE inhibitor (consider angiotensin-II receptor antagonist if ACE intolerant)
C = calcium-channel blocker
D = thiazide-type diuretic

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Beta-blockers

- Beta-blockers are no longer preferred as a routine initial therapy for hypertension.
- But consider them for younger people, particularly:

– women of childbearing potential

– patients with evidence of increased sympathetic drive

– patients with intolerance of or contraindications to ACE inhibitors and angiotensin- antagonists.

www.nice.org.uk

Beta-blokerler

- Beta-blokerler artık hipertansiyonun başlangıç tedavisinde tercih edilmemelidir
- Ancak genç hastalarda özellikle düşünülmelidir:
  – Doğurganlık çağındaki kadınlarda
  –Sempatik aktivasyon belirtileri olanlarda
  –ACEi ve ARB kullanamayan hastalarda

www.nice.org.uk

Pahor et al: Lancet 2000;356:1949-54

VARILAN SONUÇLAR KKB'NİN HİPERTANSİF HASTALARDA ORTAYAÇIKAN MAJOR KARDİYOVASKÜLER KOMPLİKASYONLARIN ÖNLENMESİNDE DAHA AZ YARARLI OLDUĞUNU GÖSTERMEKTEDİR.

BU NEDENLE HİPERTANSİYON TEDAVİSİNDE İLK TERCİH OLARAK KULLANILMAMALIDIR.

BP Trialist: Lancet 2000;355:1955-64

DEĞİŞİK İLAÇ GRUPLARININ DEĞİŞİK TEDAVİ REJİMLERİNDE KULLANILMASI İLE FARKLI SONUÇLARA ULAŞILDIĞI YÖNÜN DE YETERLİ KANIT YOKTUR.

DEVAM EDEN ÇALIŞMALARINI SONUCUNU BEKLEMEK GEREKMEKTEDİR.

Evidence–Based Evaluation of Calcium Channel Blockers for Hypertension

Opie LH, Schall R JACC 2002;39:315-22

TOTAL ve KARDİYOVASKÜLER MORTALİTE ve MAJOR KARDİYOVASKÜLER OLAYLAR AÇISINDAN KKB İLE KT ARASINDA FARKLILIK YOKTUR.İNMEDEKİ AZALMA MI ARTIŞI İLE DENGELENİYOR GİBİ GÖZÜKMEKTEDİR. ANCAK DİYABETİK HASTALARDA ACEİ ÖZELLİKLE NONFATAL MI AÇISINDAN DAHA İYİ KARDİYOVASKÜLER KORUMA YAPMAKTADIR.

ALLHAT

Antihipertansif ilaç sınıflarının zorunlu endikasyonlarının klinik çalışmalara ve kılavuzlara göre sınıflanması

JNC 7

	Önerilen ilaçlar						
Hastalık	**Diüretik**	**β bloker**	**ACEi**	**ARB**	**KKB**	**Aldosteron antagonisti**	**Klinik çalışmalar**
Kalp yetersizliği	●	●	●	●		●	**ACC/AHA Kalp Yetersizliği Kılavuzu, MERIT-HF, COPERNICUS, CIBIS, SOLVD, AIRE, TRACE, ValHEFT, RALES**
Mİ sonrası		●	●			●	**ACC/AHA post-MI kılavuzu, BHAT, SAVE, CAPRICORN, EPHESUS**
Yüksek koroner hastalık riski	●	●	●		●		**ALLHAT, HOPE, ANBP2, LIFE, CONVINCE**
Diyabet	●	●	●	●	●		**NKF-ADA Kılavuzu, UKPDS, ALLHAT**
Kronik böbrek hastalığı			●	●			**NKF Kılavuzu, Kaptopril Çalışması, RENAAL, IDNT, REIN, AASK**
Rekürran inmeden korunma	●		●				**PROGRESS**

İngiltere Hipertansiyon Cemiyeti Kan Basıncını Düşürücü İlaç Kombinasyonu Önerileri

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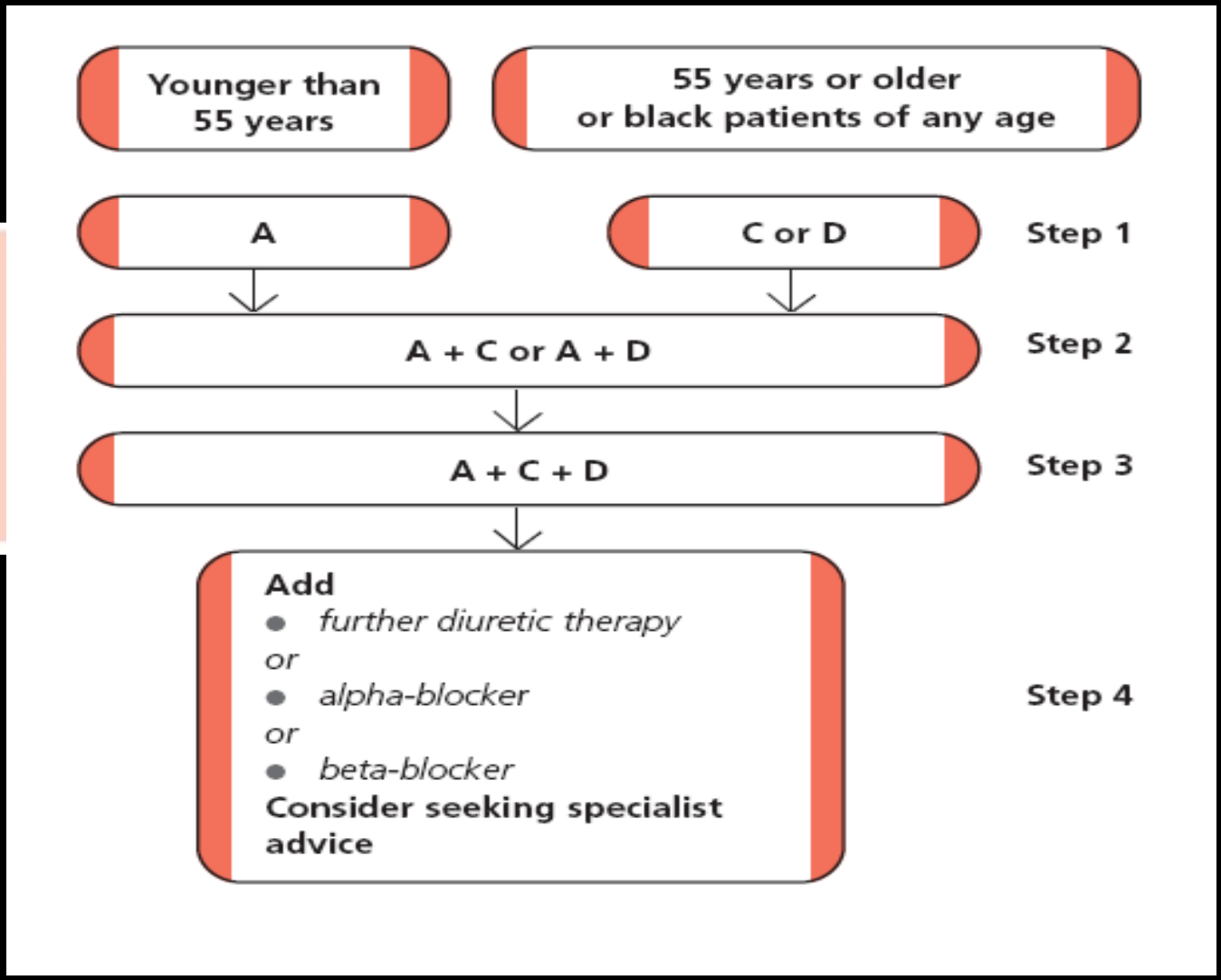
Williams, B. et al. BMJ 2004;328:634-640

Management of hypertension in adults in primary care-June 2006



Abbreviations:
A = ACE inhibitor (consider angiotensin-II receptor antagonist if ACE intolerant)
C = calcium-channel blocker
D = thiazide-type diuretic

www.nice.org.uk

Re-examining the efficacy of b-blockers for the treatment of hypertension: a meta-analysis

- Our analysis supports the stance espoused in the 2006 Canadian Hypertension Education Program Recommendations that beta-blockers should remain one of the recommended drug classes in the therapeutic armamentarium for younger hypertensive patients

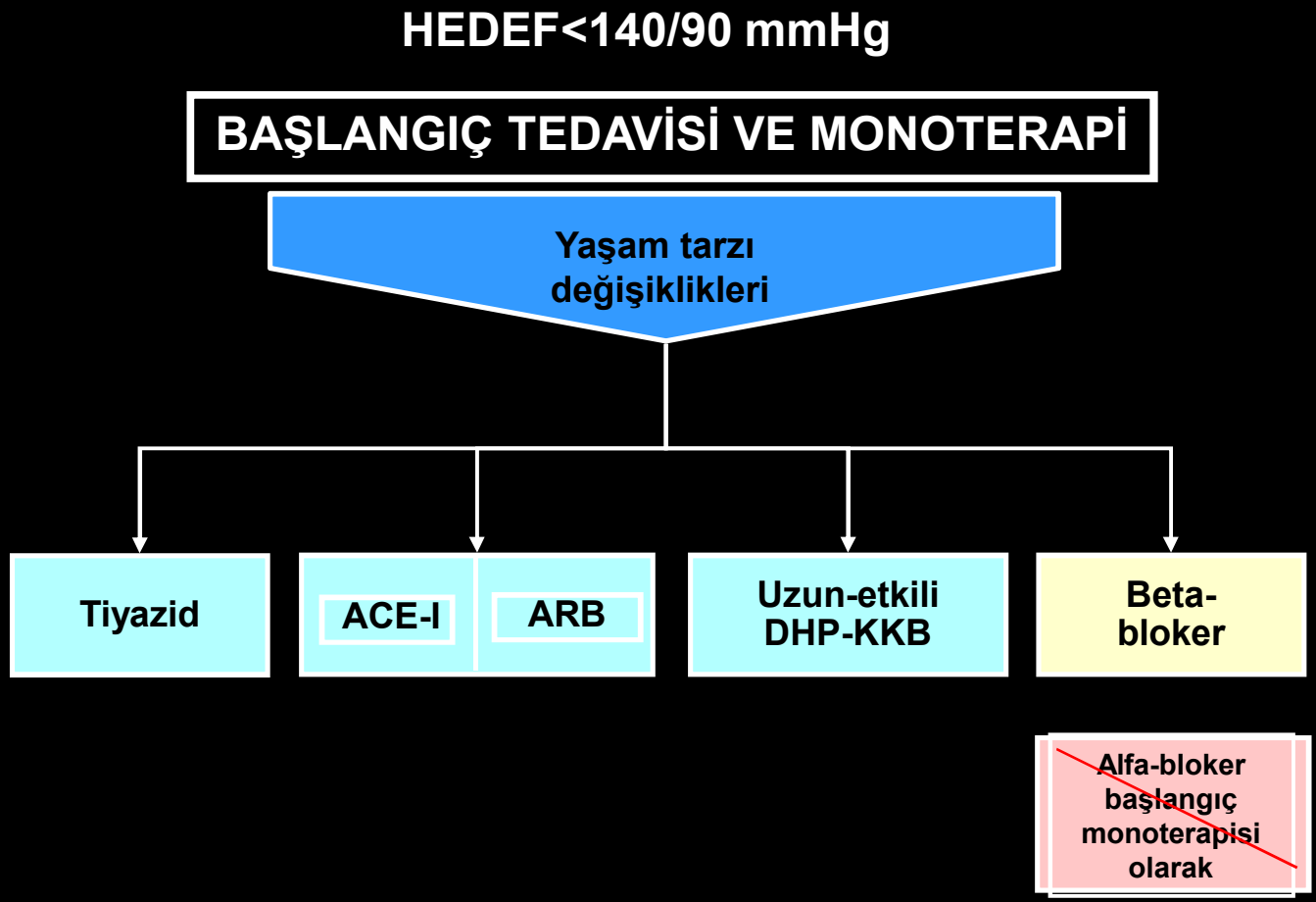
Khan N, A. McAlister FA . CMAJ 2006;174(12):1737-42

Re-examining the efficacy of b-blockers for the treatment of hypertension: a meta-analysis

- Lindholm and associates, Beevers cautioned that there was a danger of "throwing out the baby with the bath water" in recommending against the use of b-blockers for the treatment of hypertension.

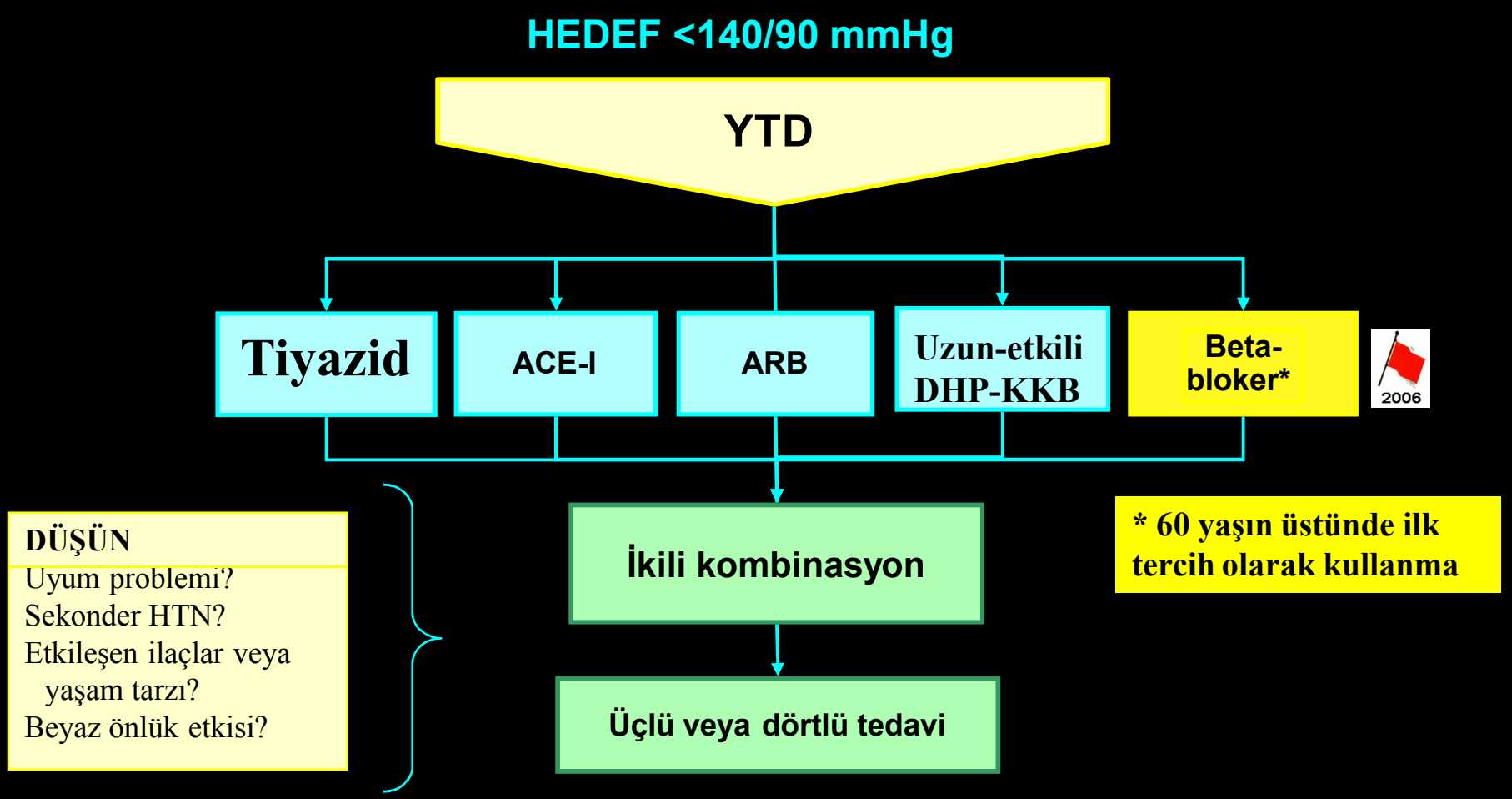
Khan N, A. McAlister FA . CMAJ 2006;174(12):1737-42

Zorlayıcı Endikasyon Yokluğunda, Sistolik-Diyastolik Hipertansiyonu Olan Hastalardaki Tedavi Algoritması



CHEP 2003

Özet: Zorlayıcı Endikasyon Yokluğunda, Sistolik-Diyastolik Hipertansiyonu Olan Hastalardaki Tedavi Algoritması



2006 **C**anadian **H**ypertension **E**ducation **P**rogram Recommendations

CHEP 2006

Part 2: Recommendations for Hypertension Treatment

2007

Canadian

Hypertension

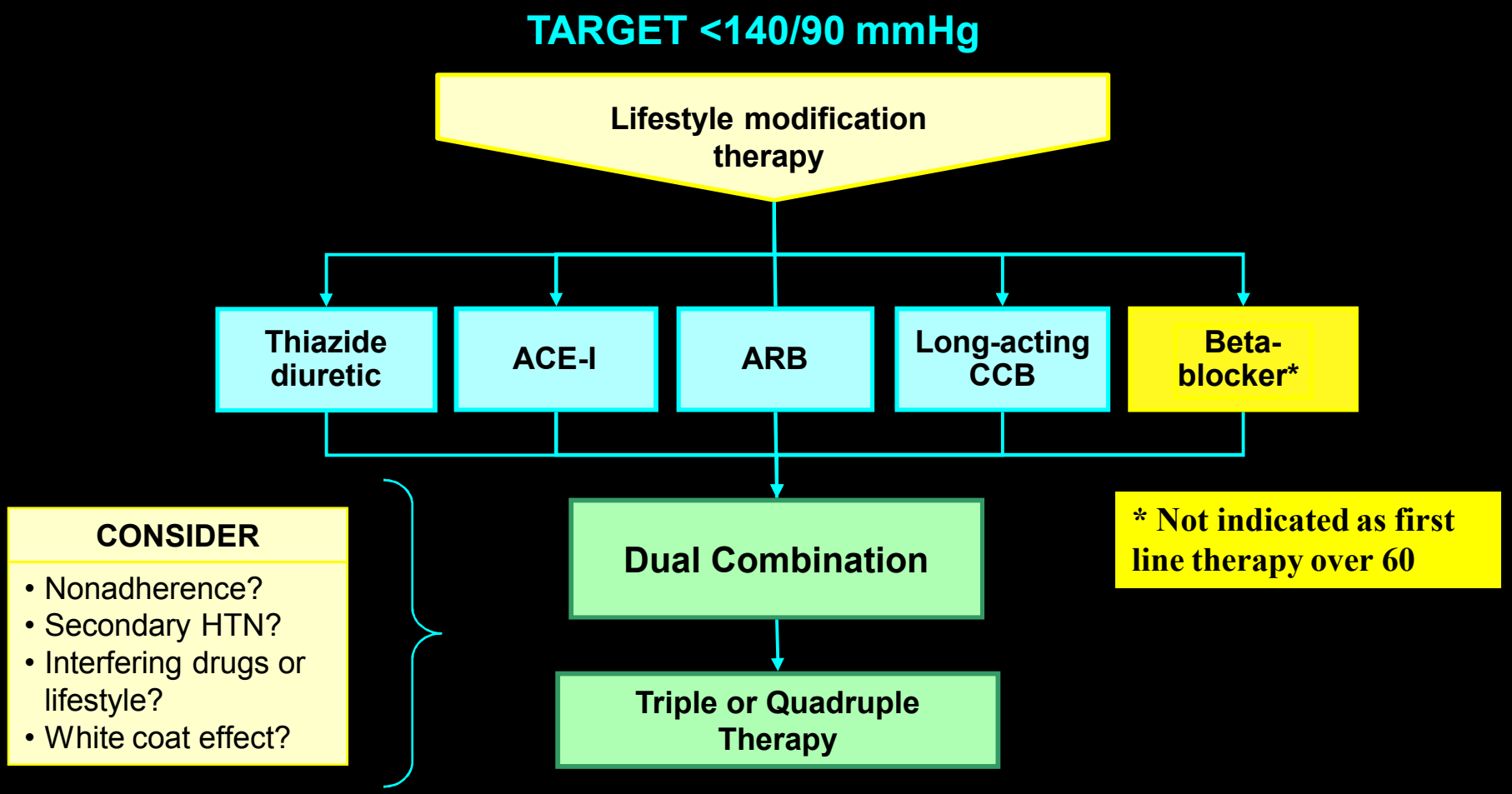
Education

Program

Recommendations

January 2007

V. Summary: Treatment of Systolic-Diastolic Hypertension without Other Compelling Indications

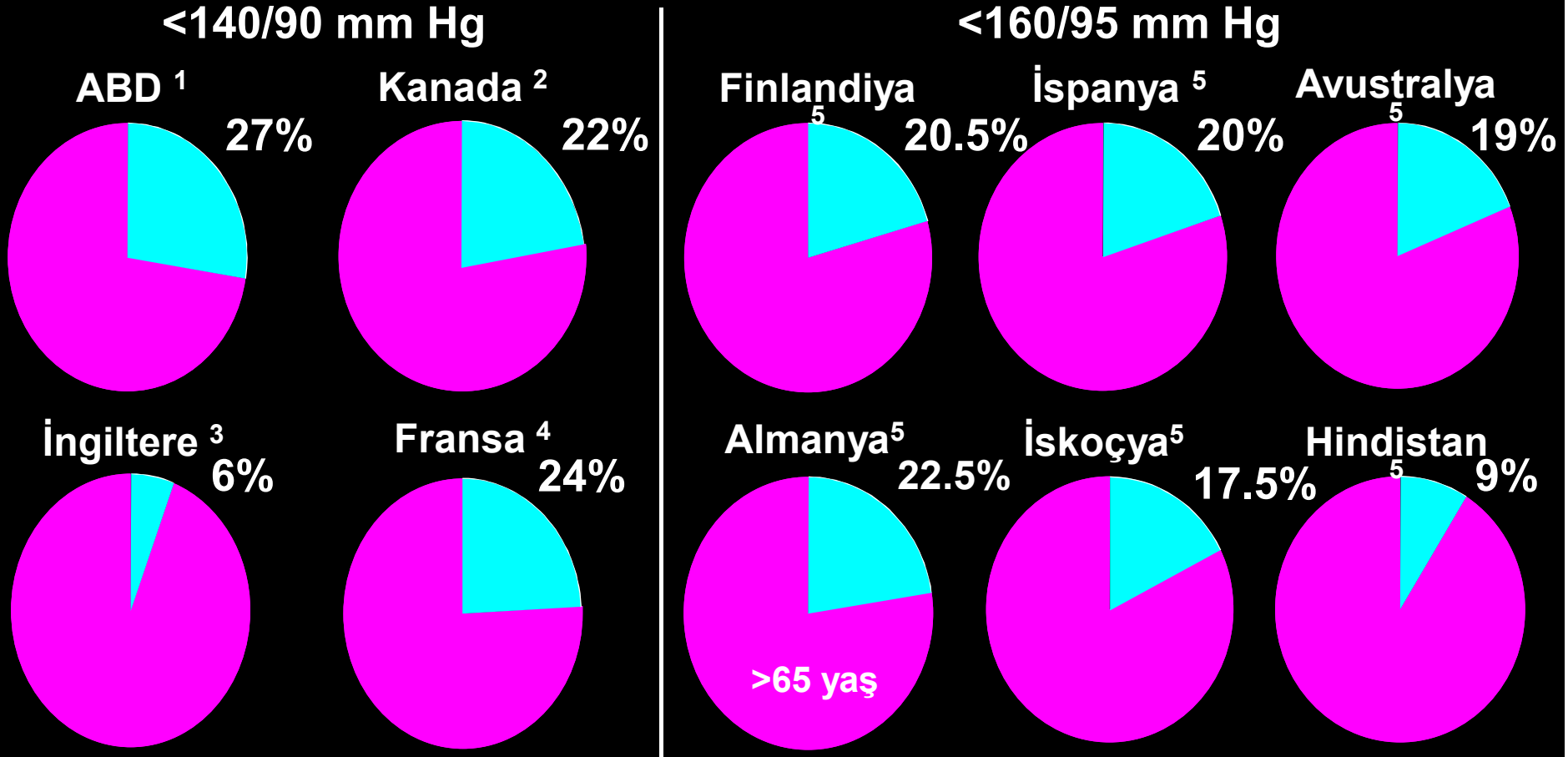


Beta-Blokerler
Tedavi

- Koroner arter hastalığı
- Hipertansiyon
- Aritmiler
- Konjestif kalp yetersizliği
- Hipertrofik obsrüktif kardiyomiyopati
- Dissekan aort anevrizması

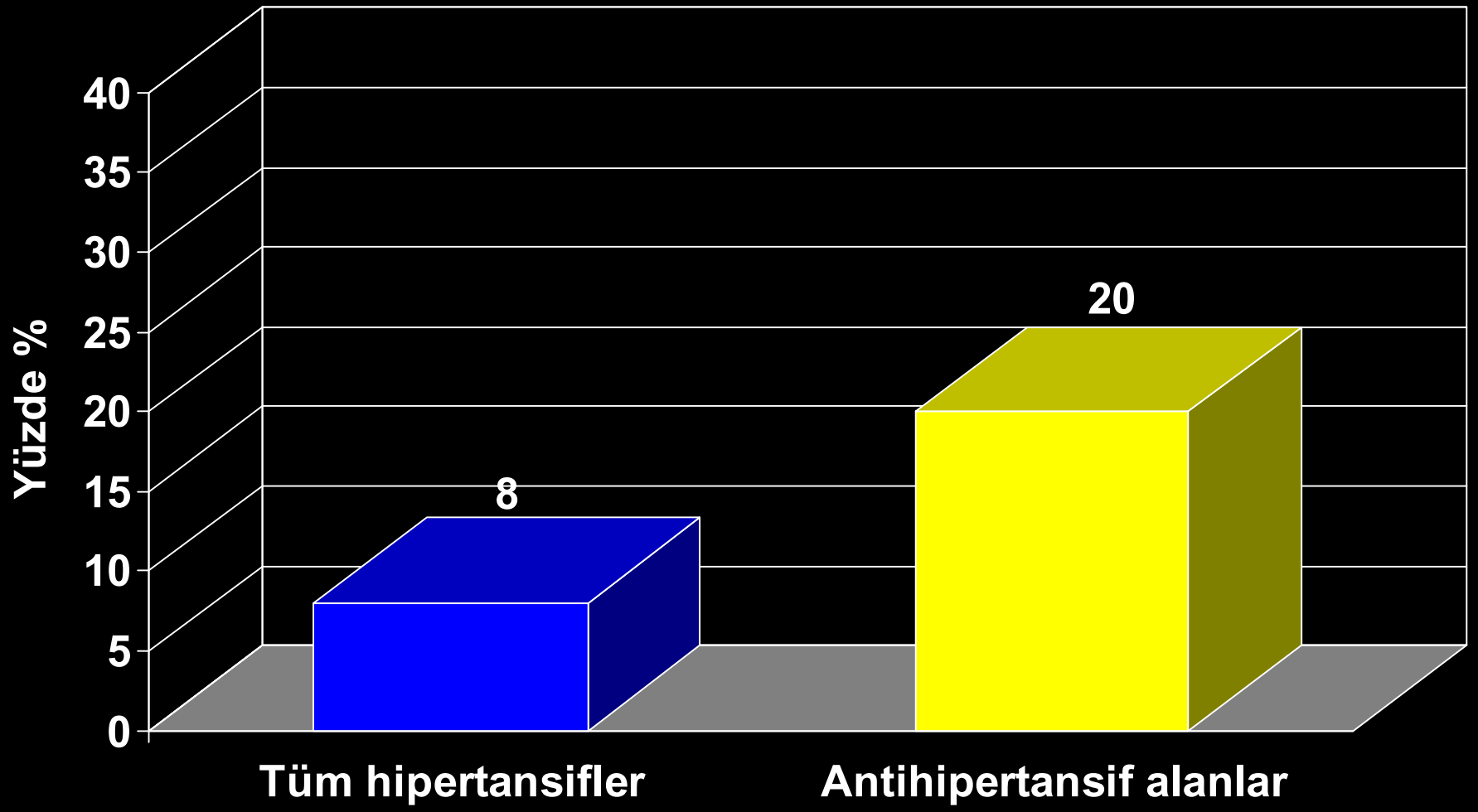
- Feokromositoma
- Hipertiroidi
- Migren-profilaksisi
- Esansiyel tremor
- Anksiyete
- Glokom (topikal)

Dünyada Kan Basıncı Kontrolu



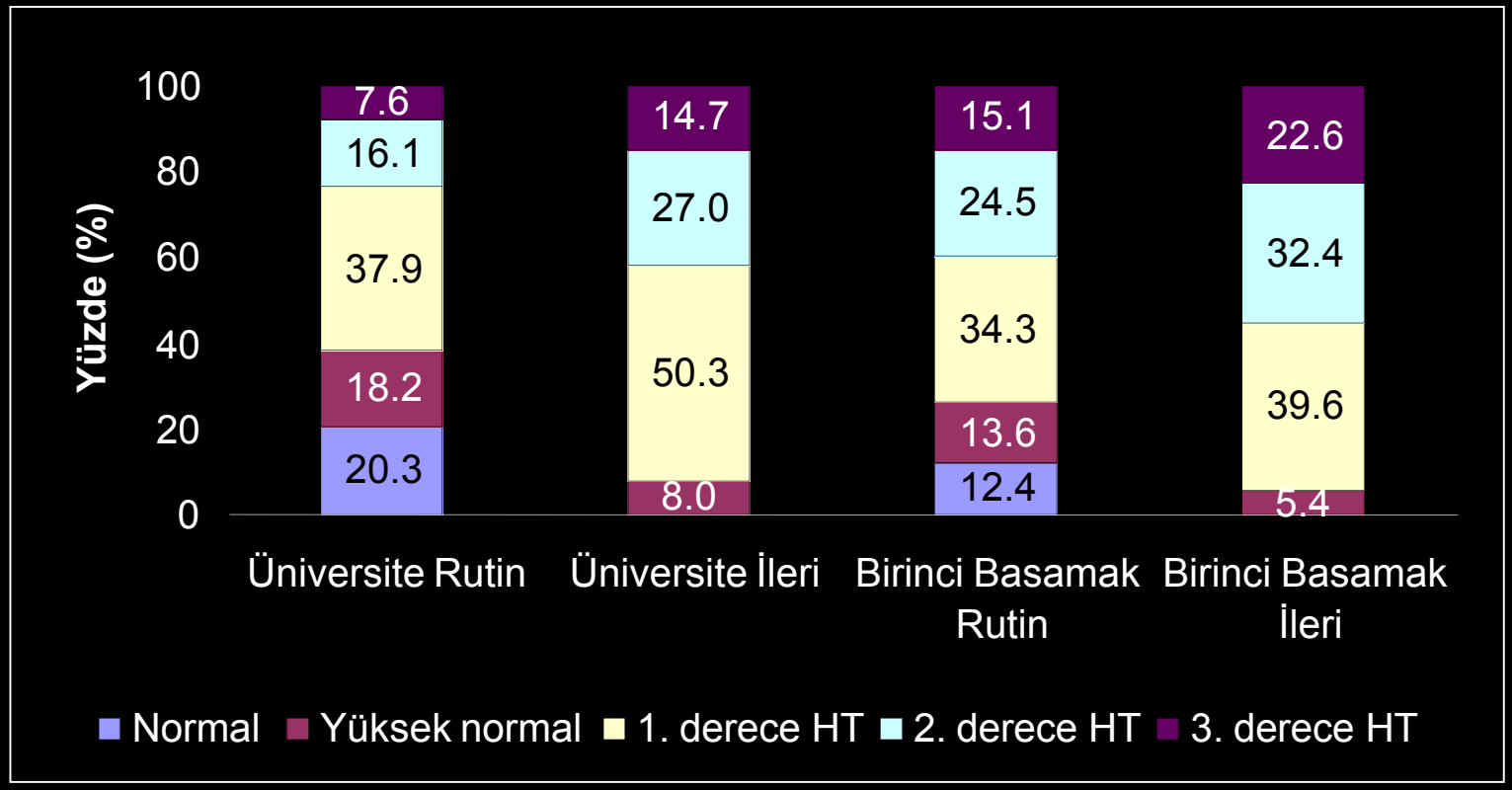
1. JNC VI. *Arch Intern Med.* 1997;157:2413-2446.
2. Joffres MR et al. *Am J Hypertens.* 1997;10:1097-1102.
3. Colhoun HM et al. *J Hypertens.* 1998;16:747-752.
4. Chamontin B et al. *Am J Hypertens.* 1998;11:759-762.
5. Marques-Vidal P et al. *J Hum Hypertens.* 1997;11:213-220.

Kontrol Altında Hipertansiyon



TÜRK HİPERTANSİYON PREVALANS ÇALIŞMASI

HT Hastalarında Gruplandırılmış Kan Basıncı Değerleri- **ICEBERG**



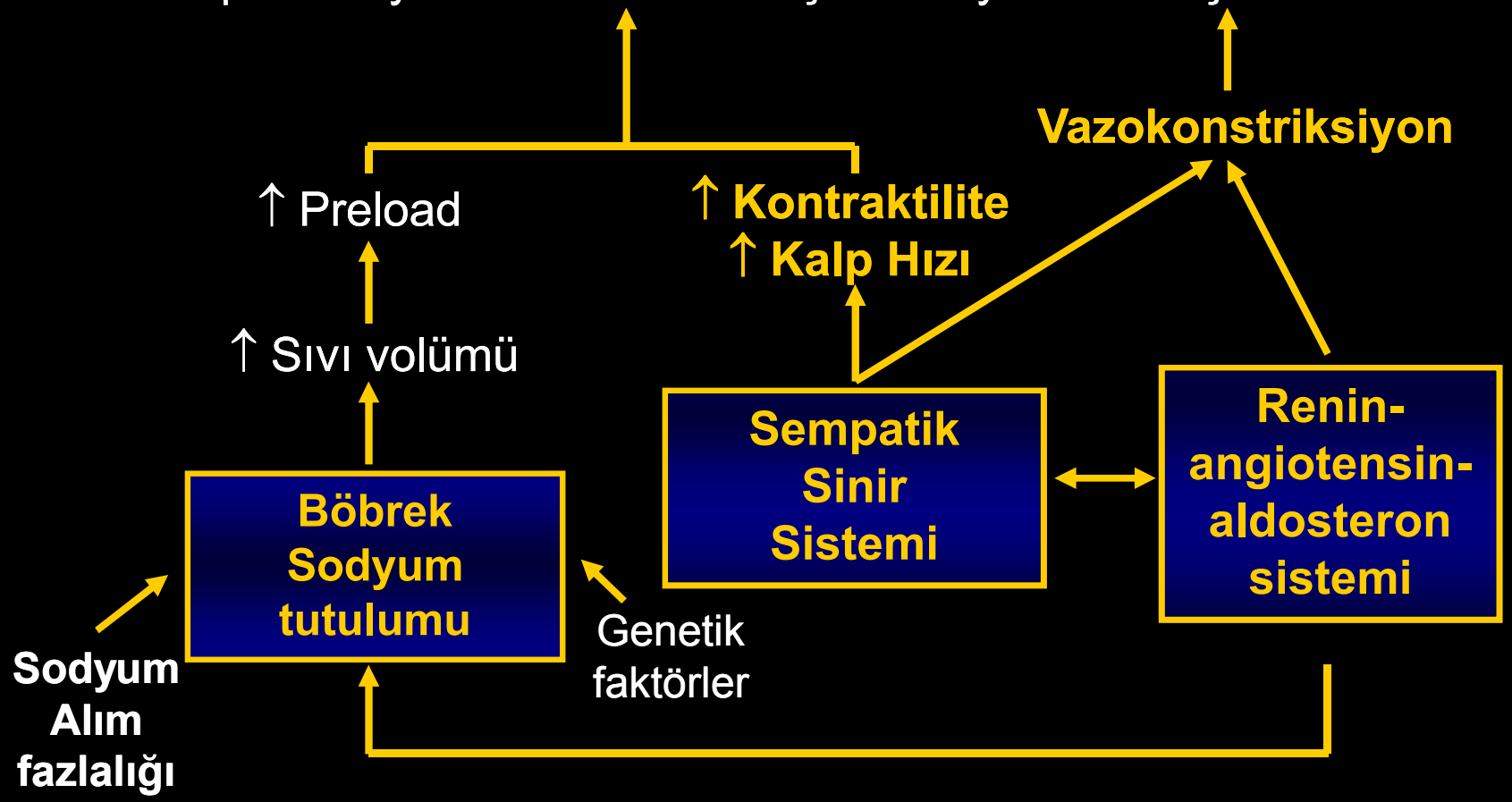
American Journal of Hypertension, ***Volume 18,*** *May 2005, A141*

Bood Pressure (In press)

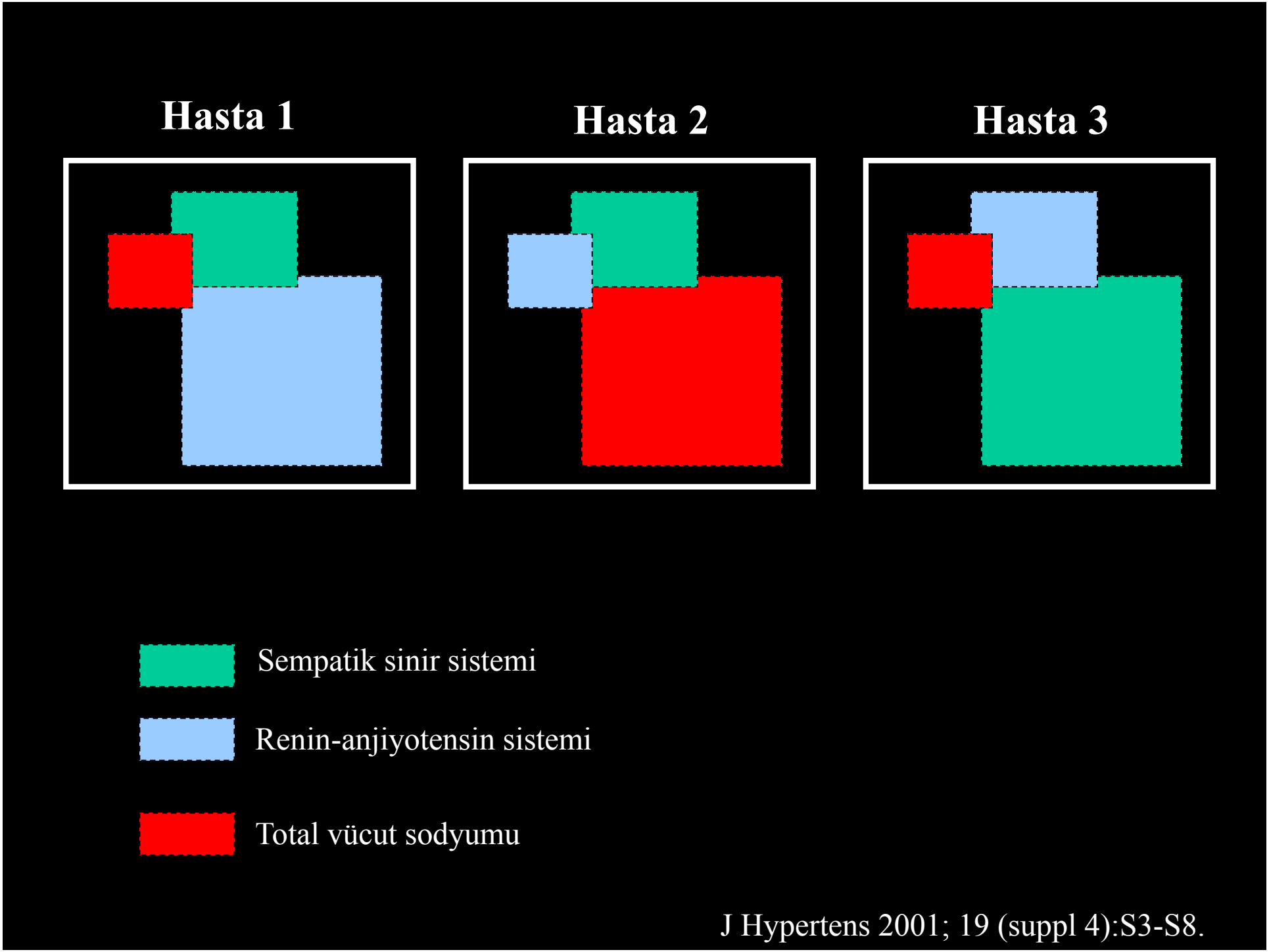
Kan Basıncının Kontrolü

Kan Basıncı = Kalp Debisi x Periferik direnç

Hipertansiyon = KD artışı ve/veya PD artışı

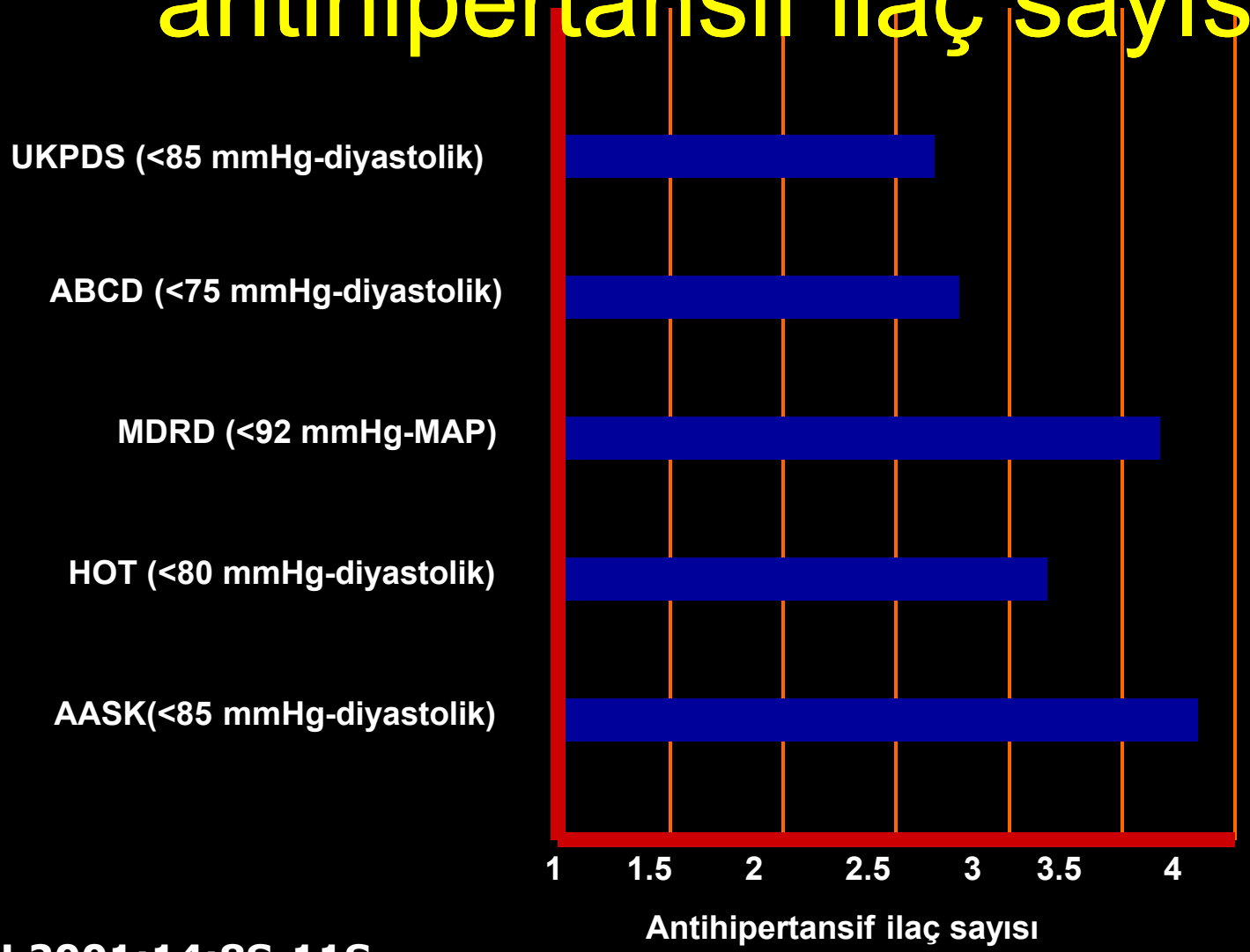


Kaplan NM. Curr Opin Nephrol Hypertens 1994



J Hypertens 2001; 19 (suppl 4):S3-S8.

Klinik çalışmalarda hedef kan basıncına ulaşmak için kullanılan antihipertansif ilaç sayısı



AJH 2001;14:8S-11S

Önlenebilir Ölümler

ABD'de her yıl için yaklaşık olarak 57,000 ölüm, eğer uygun tedavi verilirse önlenebilecektir

National Committee for Quality Assurance. Washington, DC 2003.