Quelle cible tensionnelle viser? Au plus bas au mieux?

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Néphrologie-HTA

CHU Liège-ULG

6 février 2010

Fifty years ago, at the beginning of the era of antihypertensive therapy, important but simple question:

Is antihypertensive treatment better or worse than no treatment?

The lower, the better? (Staessen et al Lancet 2001)

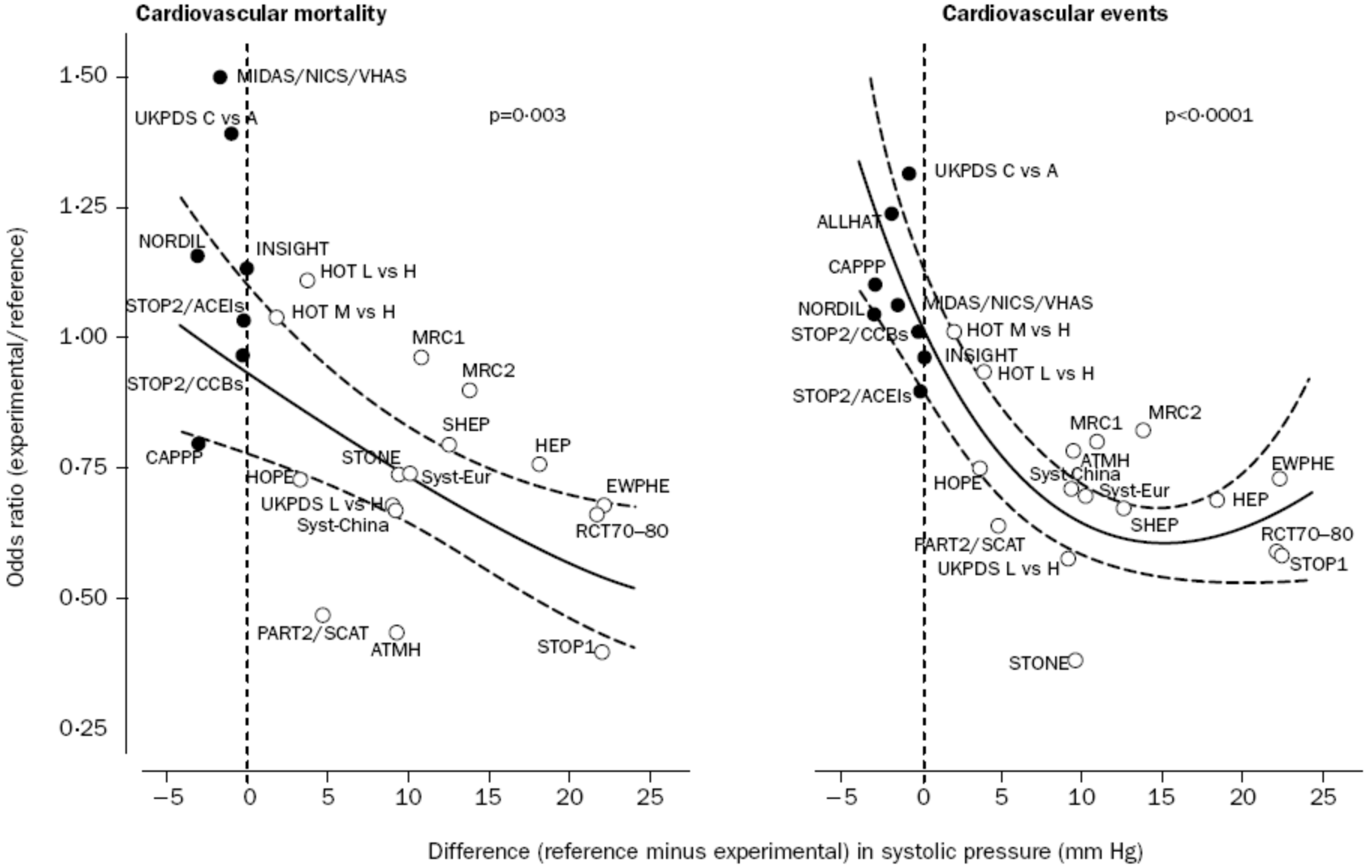


Figure 4: **Relation between odds ratios for cardiovascular mortality and all cardiovascular events, and corresponding differences in systolic blood pressure**

Définition et classification de la pression artérielle (mmHg)

Catégorie	Systolique	Diastolique
Optimal	< 120	< 80
Normal	120-129	80-84
Normal haute	130-139	85-89
Hypertension de Grade 1 (légère)	140-159	90-99
Hypertension de Grade 2 (modérée)	160-179	100-109
Hypertension de Grade 3 (sévère)	≥ 180	≥ 110
Hypertension systolique isolée	≥ 140	< 90

Lorsque la pression systolique et la pression diastolique d'un patient se situent dans des catégories différentes, la catégorie la plus élevée est d'application.. L'hypertension systolique isolée peut également être gradée (grades 1,2,3) en fonction de la tension artérielle systolique dans les marges indiquées, si les valeurs diastoliques sont < 90.

Quand démarrer le traitement antiHTA? (Selon ESH 2007)

- HTA grade 1 (entre 140/90 et 159/99 mmHg)
- PA N haute (entre 130/85 et 139/89 mmHg) si diabète, risque CV>

Décisions reposant sur des preuves?

ESH 2007: Objectifs du traitement

- Chez les patients hypertendus, la pression artérielle cible est **< 140/90** mmHg.
- La PA cible est **<130/80 mmHg** chez les diabétiques et les patients à risque élevé ou très élevé (en particulier AVC, infarctus du myocarde, dysfonction rénale, protéinurie)

Ces cibles sont-elles fondées sur l'évidence?

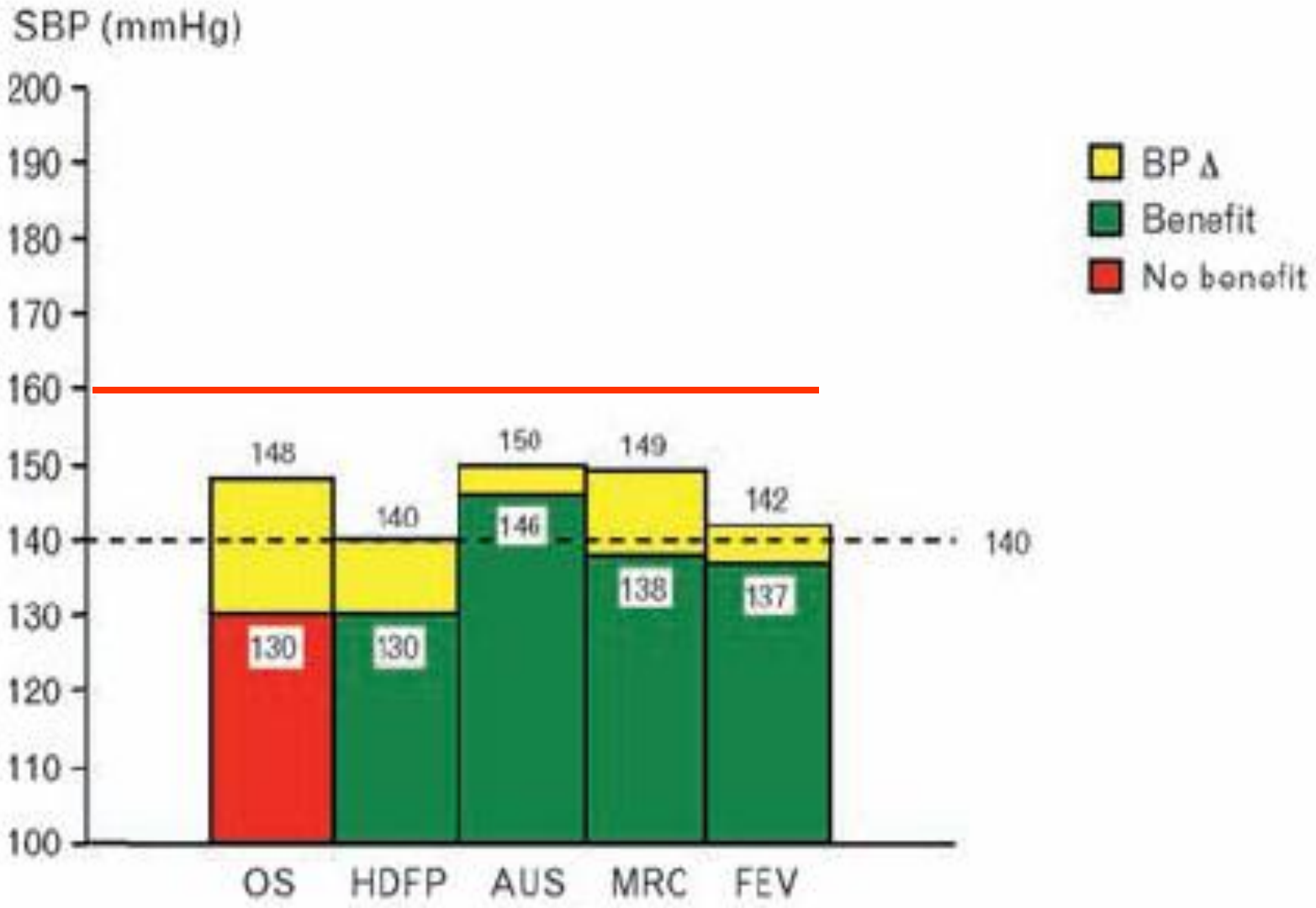
Ces cibles sont-elles fondées sur l'évidence?

Non pour la Cochrane collaboration 2009!

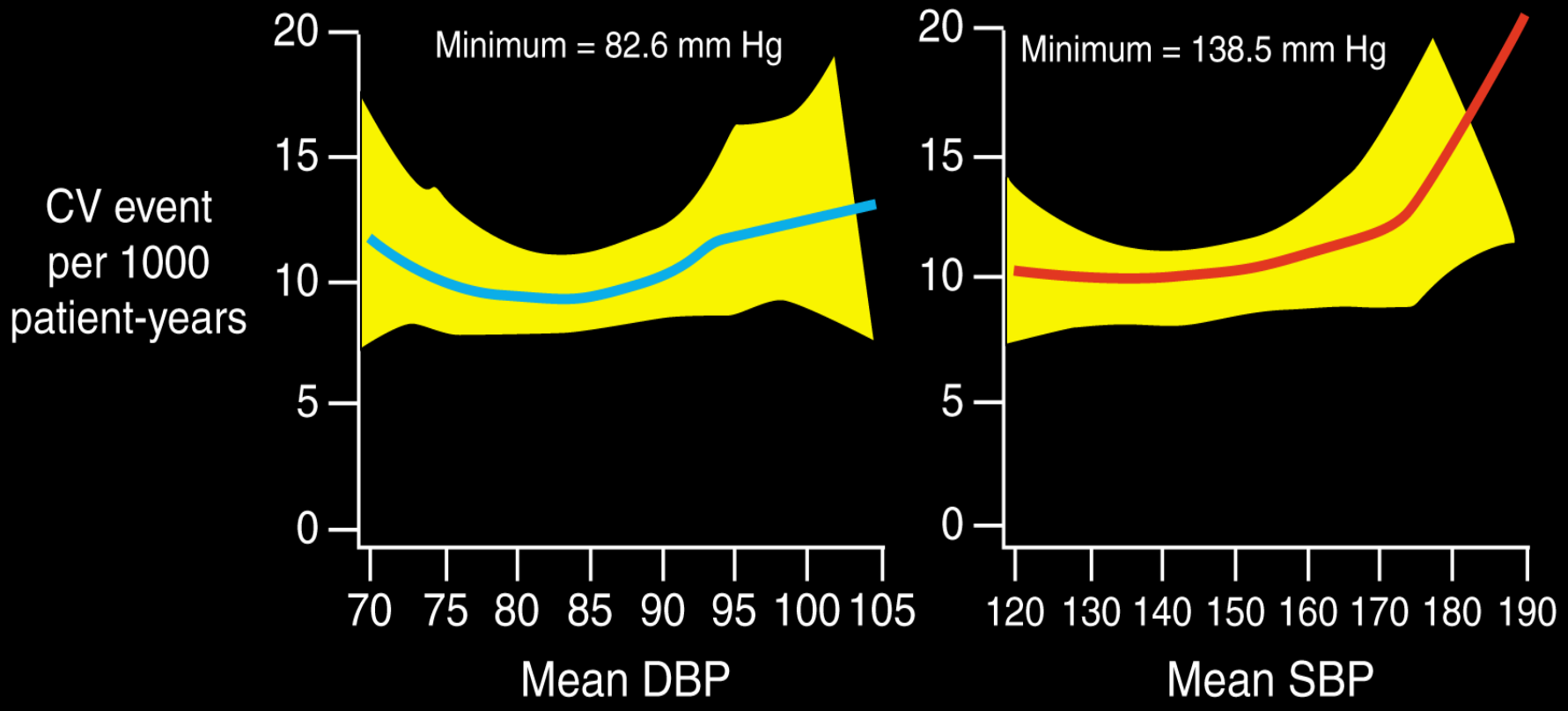
Points abordés:

- HTA **non compliquée**
- HTA sujet âgé
- HTA avec antécédent CV
- HTA et Diabète
- HTA et IRC (protection rénale)

'Uncomplicated' Hypertension



HOT: Estimated incidence of major cardiovascular events



Hansson L, et al for the HOT Study Group. *Lancet.* 1998;351.

Usual versus tight control of systolic blood pressure in non-diabetic patients with hypertension (Cardio-Sis): an open-label randomised trial

*Paolo Verdecchia, Jan A Staessen, Fabio Angeli, Giovanni de Simone, Augusto Achilli, Antonello C Aldo P Maggioni, Donata Lucci, Gianpaolo Reboldi, on behalf of the Cardio-Sis investigators**

The degree to which systolic blood pressure should be lowered in individuals with mild hypertension is unclear. The Cardio-Sis trial has investigated whether tight systolic blood pressure control is more beneficial than usual control in individuals with hypertension but without diabetes.

- PA initiale 163/90 mmHg
- PA « usual »: 136/79 vs PA « intensive »: 132/77 mmHg

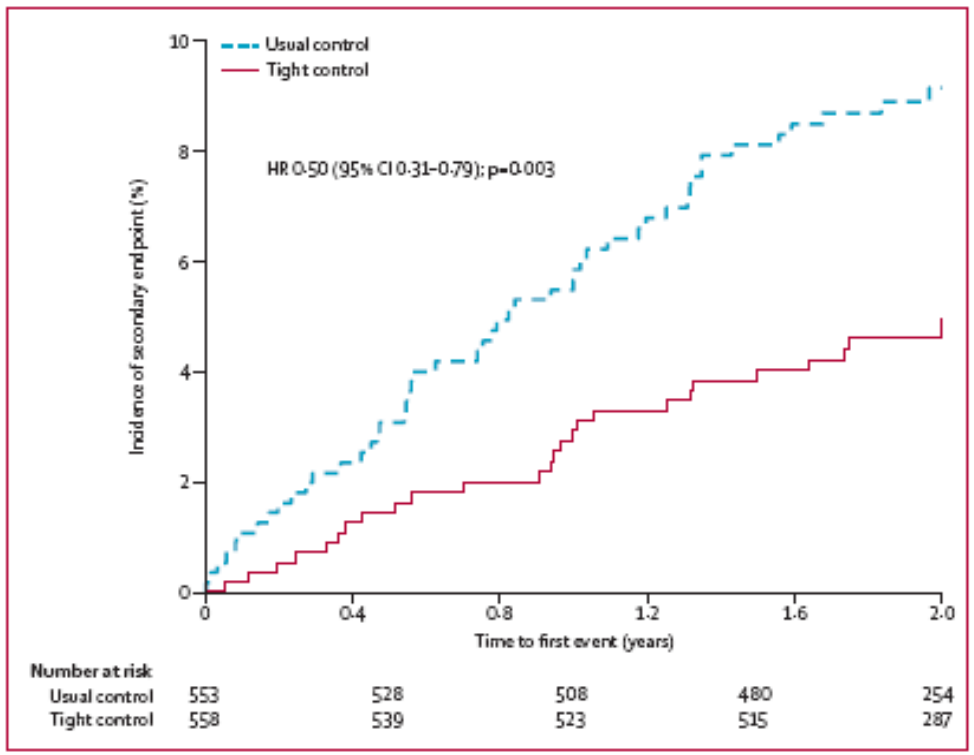


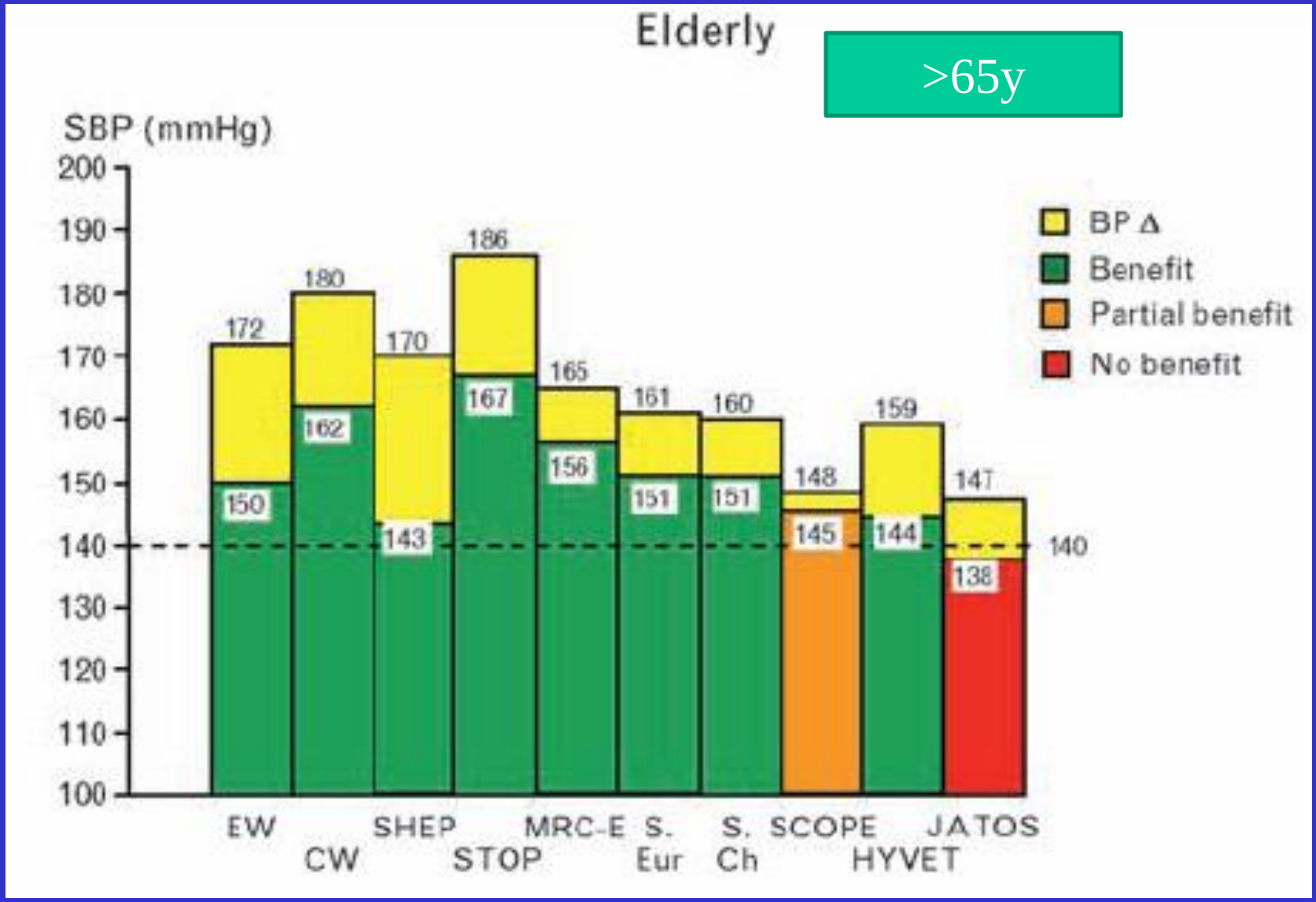
Figure 4: Main composite secondary endpoint in the two groups
HR=hazard ratio.

Main secondary end point
Composite of: all-cause mortality, fatal or nonfatal myocardial infarction, fatal or nonfatal stroke, transient ischemic attack, congestive heart failure of New York Heart Association stages III or IV requiring admission to hospital, angina pectoris with objective evidence of myocardial ischemia, new-onset atrial fibrillation, coronary revascularization, aortic dissection, occlusive peripheral arterial disease, and renal failure requiring dialysis.

Lancet 2009

Ces cibles sont-elles fondées sur l'évidence?

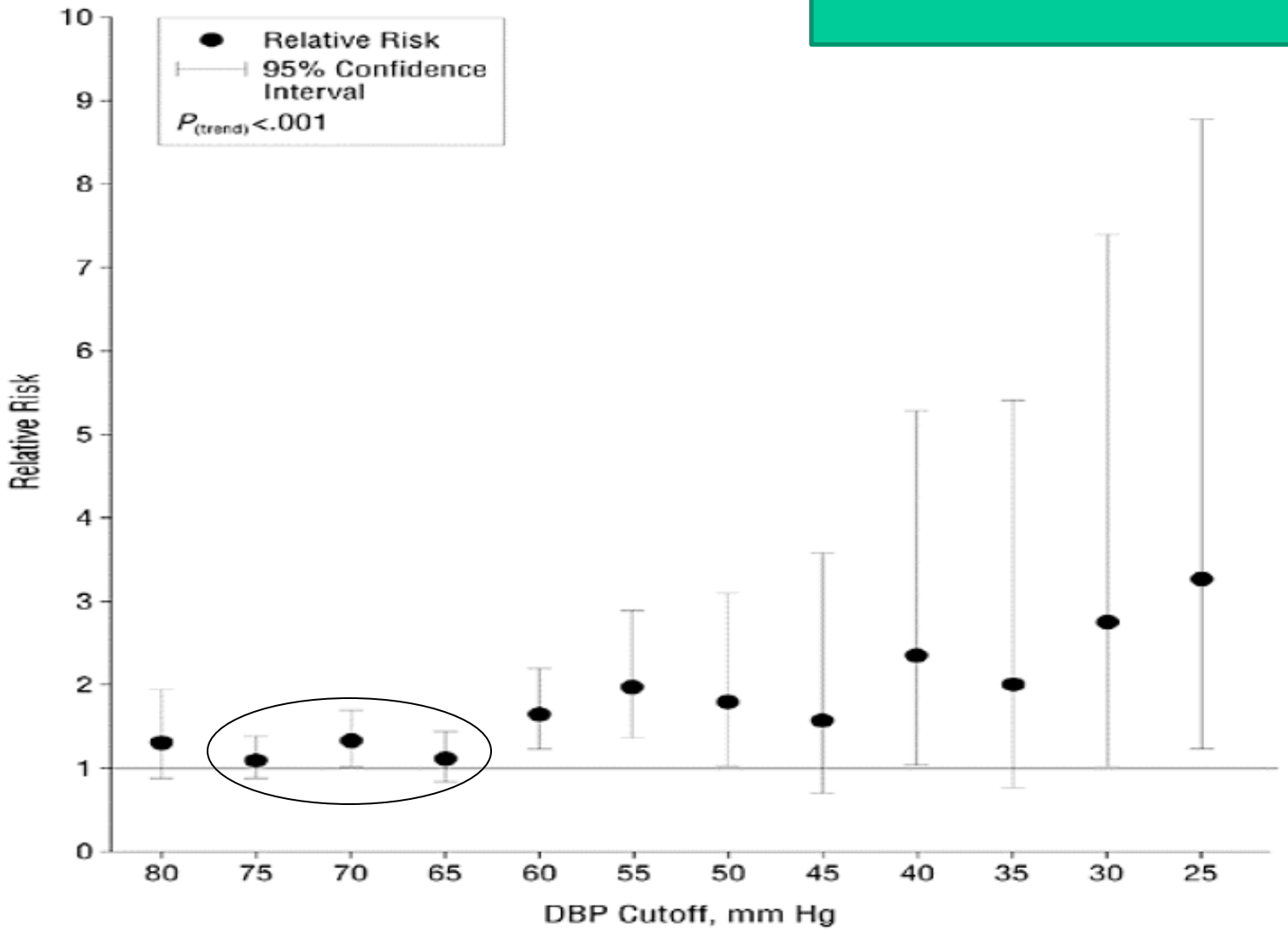
- HTA **non compliquée**: PA< 140/90 mmHg (OK jusque 120/75 mmHg)
- HTA **sujet âgé**
- HTA avec antéc CV
- HTA et Diabète
- HTA et IRC


Elderly
>65y
SBP (mmHg)
200
190
180
170
160
150
140
130
120
110
100
BP Δ
Benefit
Partial benefit
No benefit
172
150
180
162
170
143
186
167
165
156
161
151
160
151
148
145
159
144
147
138
140
EW
CW
SHEP
STOP
MRC-E
S. Eur
S. Ch
SCOPE
HYVET
JATOS

RR for CVD by DBP in Treatment Group

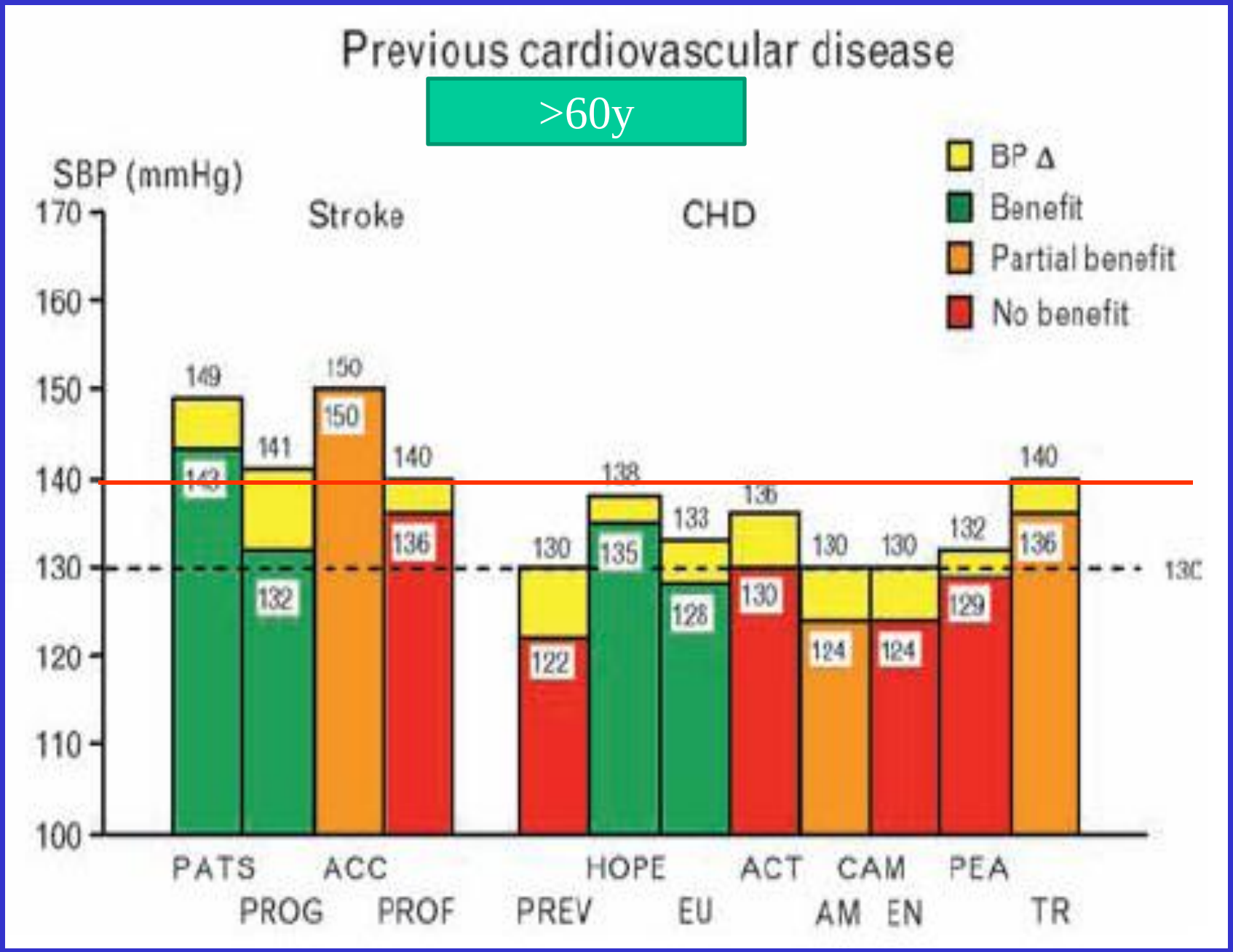
-SHEP-

HTAS isolée sujet âgé



Ces cibles sont-elles fondées sur l'évidence?

- HTA non compliquée: PA< 140/90 mmHg (jusque 120/70 mmHg)
- HTA sujet âgé: PA <150/80 mmHg (jusque 140-70 mmHg)
- HTA **avec antécédent CV**
- HTA et Diabète
- HTA et IRC


Previous cardiovascular disease
>60y
SBP (mmHg)
Stroke
CHD
BP Δ
Benefit
Partial benefit
No benefit
170
160
150
140
130
120
110
100
149
141
150
140
143
132
150
136
130
138
133
136
130
130
132
140
135
128
130
124
124
129
136
122
PATS
PROG
ACC
PROF
HOPE
PREV
EU
ACT
CAM
AM
EN
PEA
TR

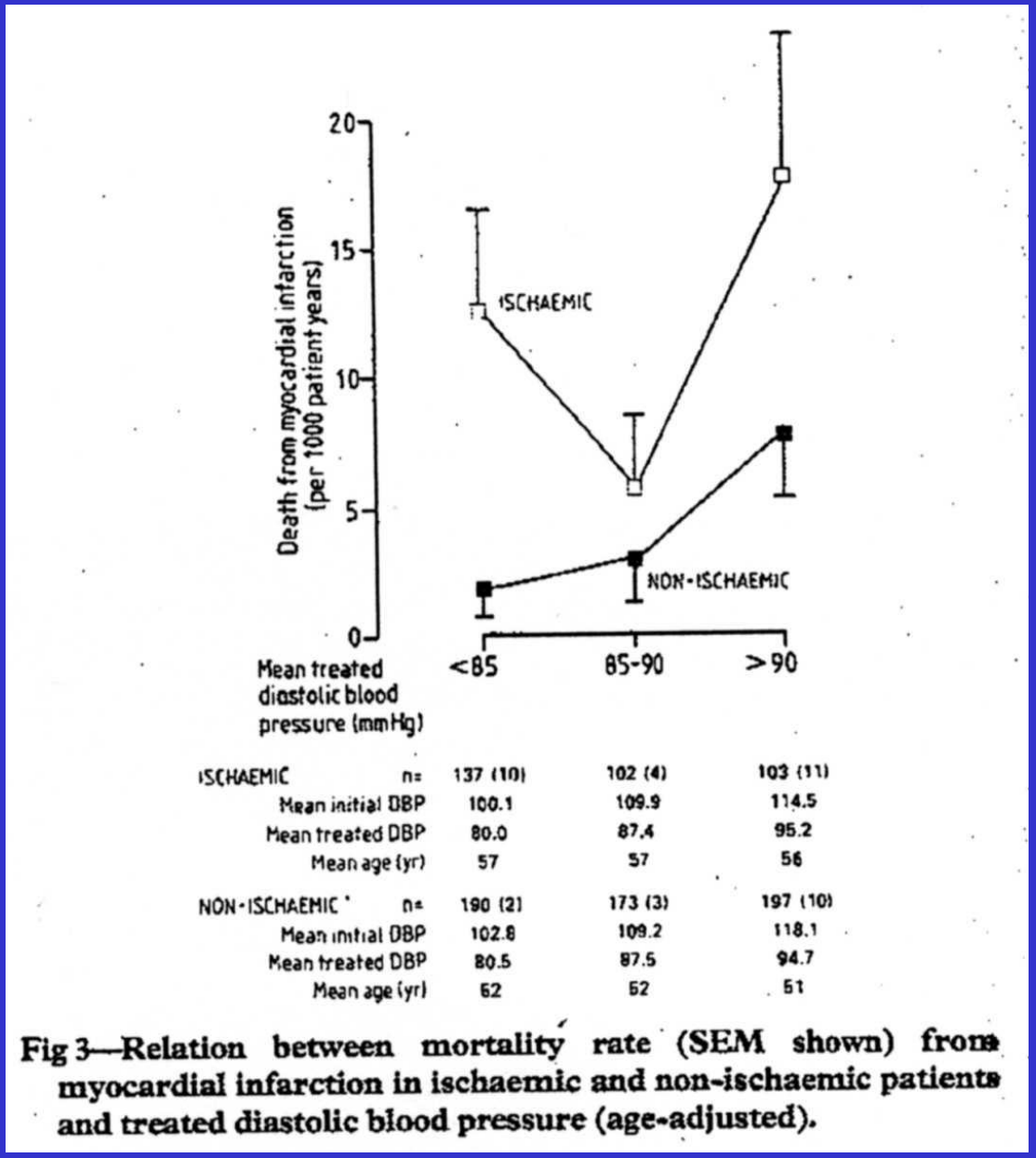
J curve

900 pts (54 ans)

Aténolol

Suivi 10 ans

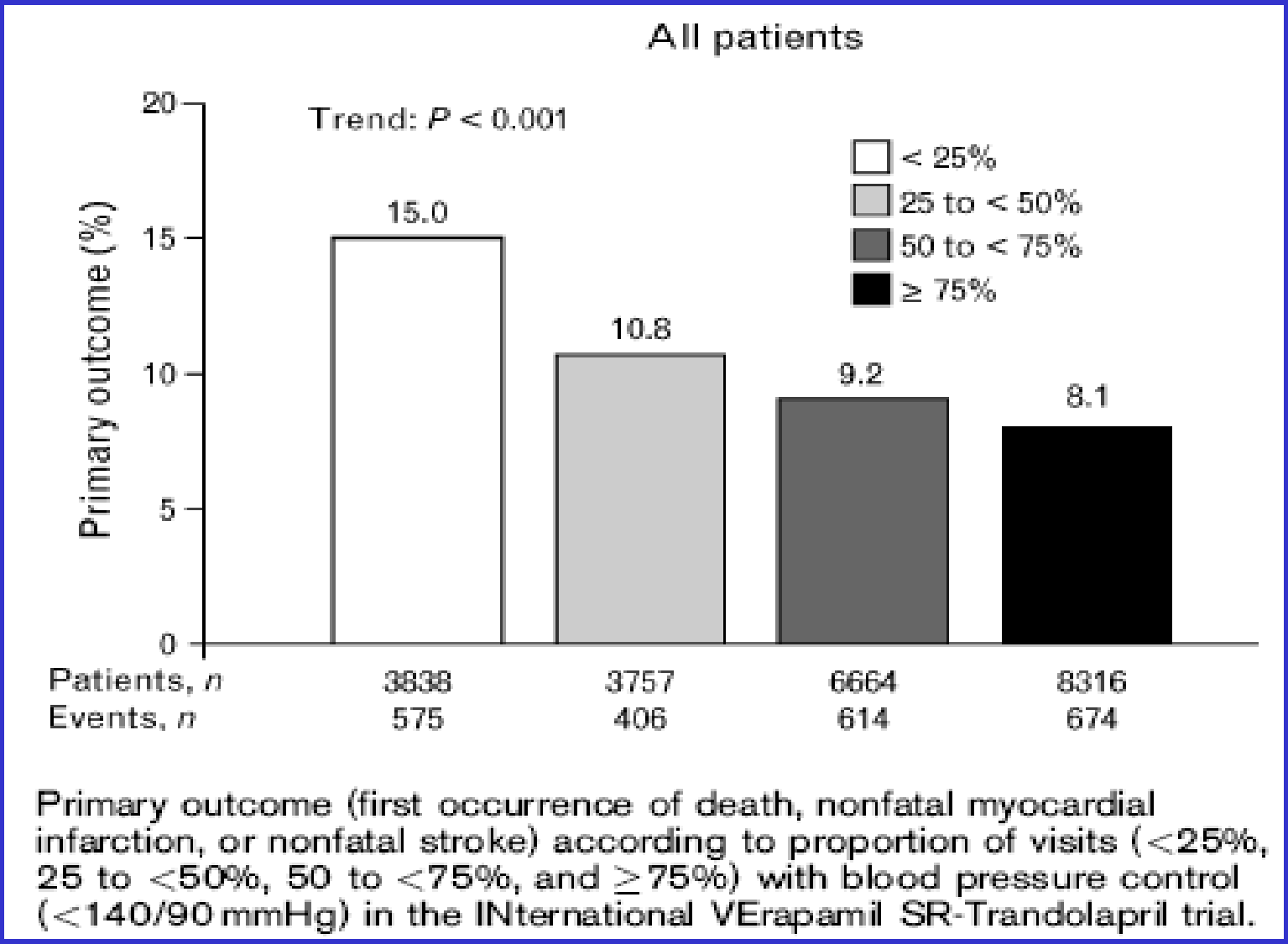
91 décès (40 IM)



ISCHAEMIC	n=	137 (10)	102 (4)	103 (11)
	Mean initial DBP	100.1	109.9	114.5
	Mean treated DBP	80.0	87.4	95.2
	Mean age (yr)	57	57	56
NON-ISCHAEMIC	n=	190 (2)	173 (3)	197 (10)
	Mean initial DBP	102.8	109.2	118.1
	Mean treated DBP	80.5	87.5	94.7
	Mean age (yr)	62	62	61

Fig 3—Relation between mortality rate (SEM shown) from myocardial infarction in ischaemic and non-ischaemic patients and treated diastolic blood pressure (age-adjusted).

Cruickshank J.M.. et al., *Lancet 1987*, 581-584.



Primary outcome (first occurrence of death, nonfatal myocardial infarction, or nonfatal stroke) according to proportion of visits (<25%, 25 to <50%, 50 to <75%, and ≥75%) with blood pressure control (<140/90 mmHg) in the INternational VErapamil SR-Trandolapril trial.

Journal of Hypertension 2009, 27 (suppl 5):S3–S8

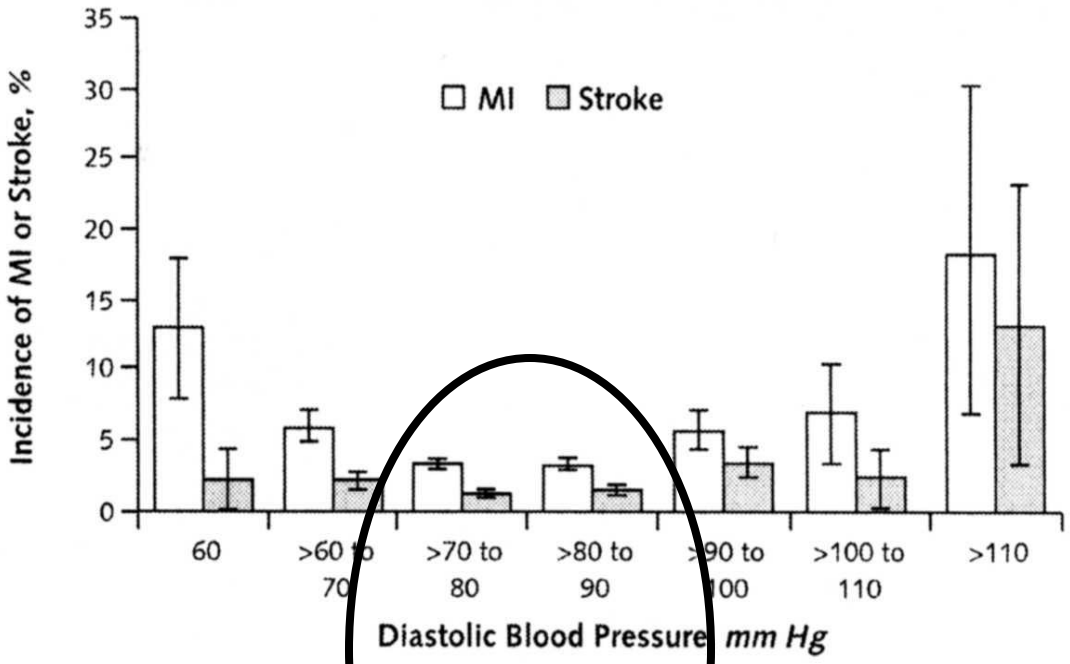
Figure 3. Incidence of total myocardial infarction (*MI*) and total stroke by diastolic blood pressure strata.

Si A.P. Infarctus Myocarde:
Min de risque pour récidive
entre 145/85 et
135/75 mmHg

Messerli F. et al., *Ann Intern Med* 2006,.

ETUDE INVEST
(22576 pts coronariens)

Vérapamil
vs aténolol



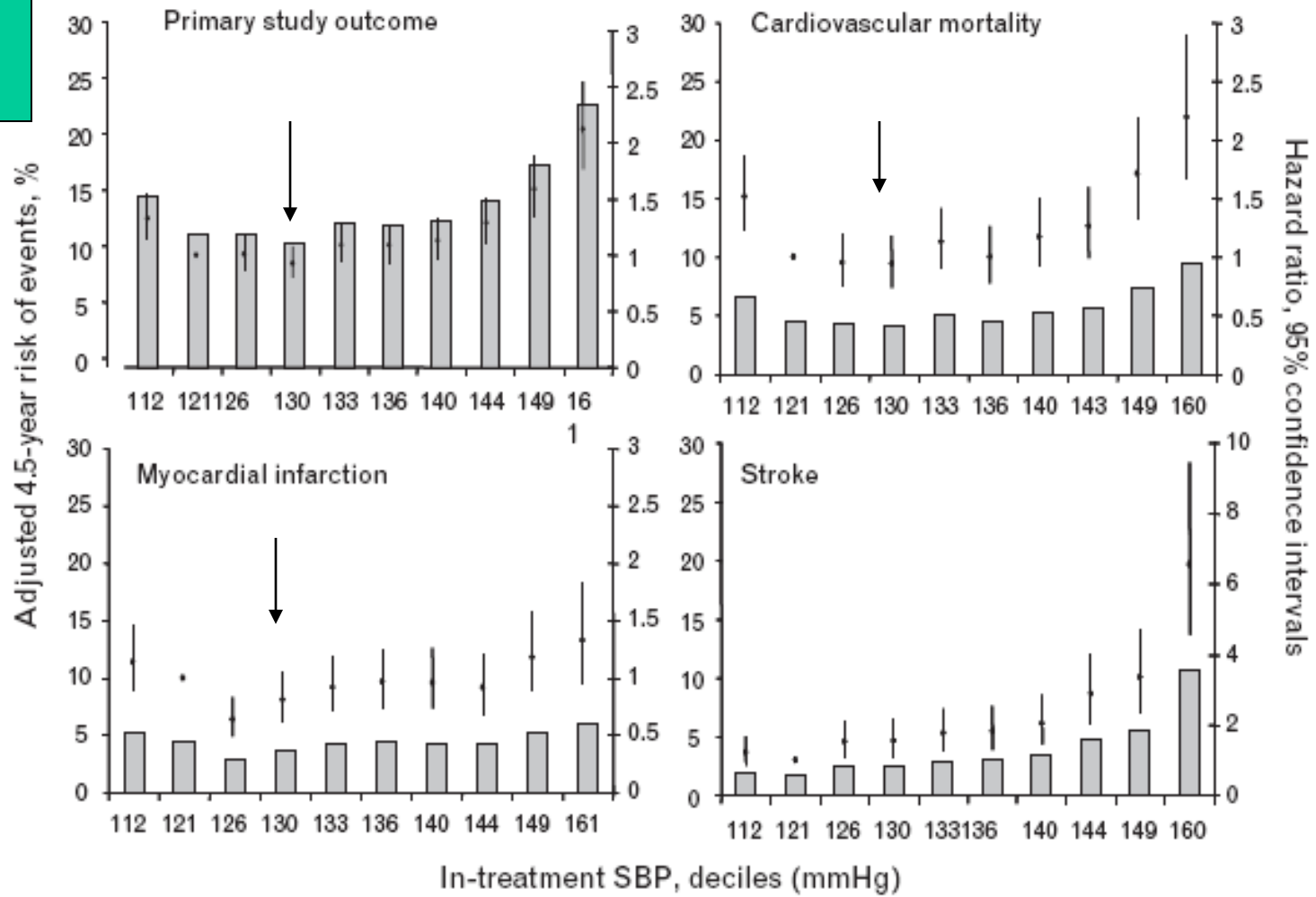
MI							
Patients with MI, *n*	23	135	387	255	71	14	8
Total patients, *n*	177	2239	11 324	7378	1214	201	43
Mean systolic blood pressure, *mm Hg*							
Patients with MI	127.0	131.9	135.2	143.8	158.3	166.9	191.4
Patients without MI	126.2	129.6	131.4	139.3	155.2	170.3	185.7
Stroke							
Patients with stroke, *n*	4	50	151	116	44	5	6
Total patients, *n*	175	2253	11 320	7366	1217	199	45
Mean systolic blood pressure, *mm Hg*							
Patients with stroke	112.2	132.7	136.3	143.8	161.1	171.1	177.9
Patients without stroke	126.7	129.6	131.5	139.3	155.2	169.9	187.9

Error bars represent 95% CIs.

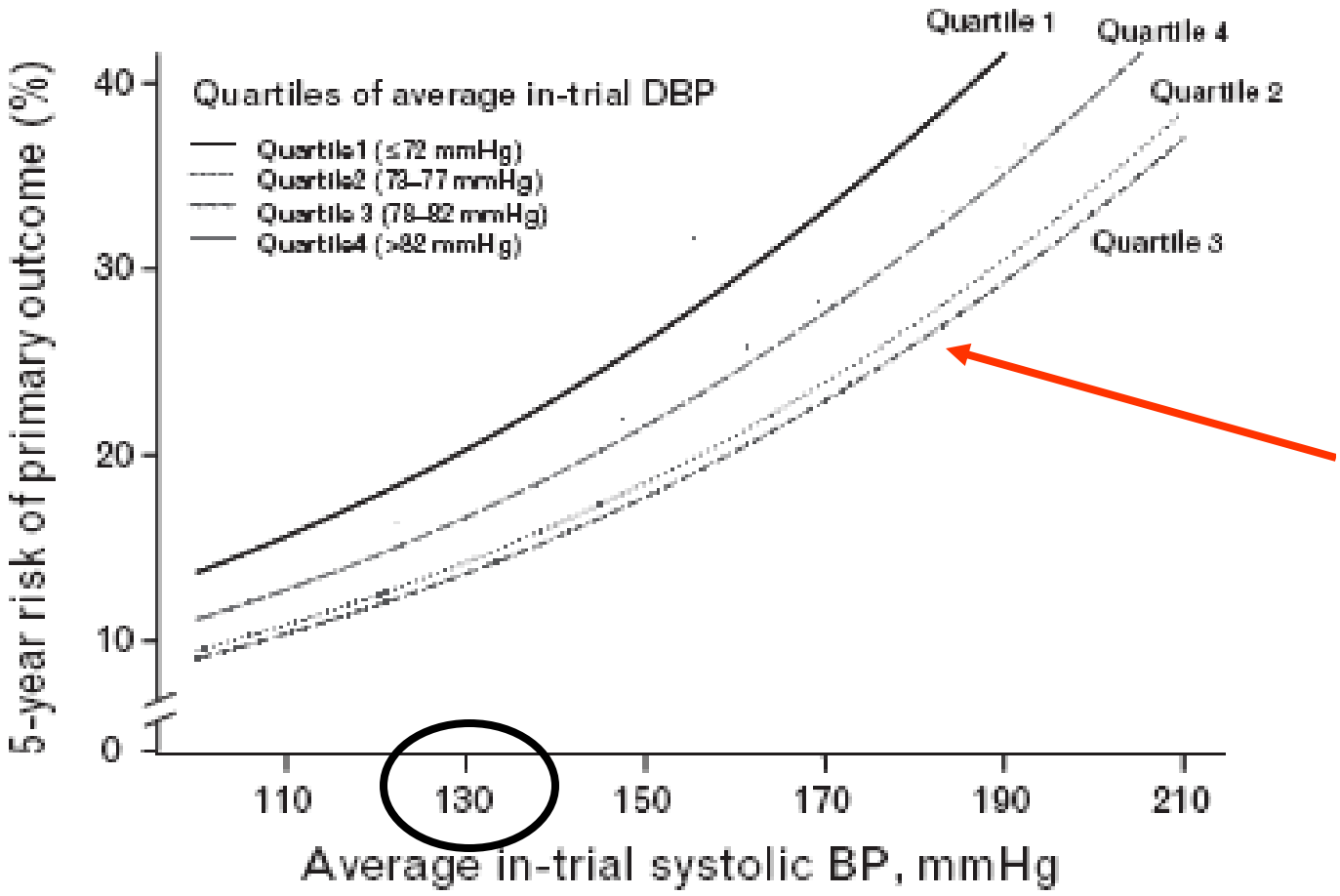
Prognostic value of blood pressure in patients with high vascular risk in the Ongoing Telmisartan Alone and in combination with Ramipril Global Endpoint Trial study

Journal of Hypertension 2009,

PAS avec
Min de risque
130 mmHg



Ontarget NEJM 2008
Risque CV

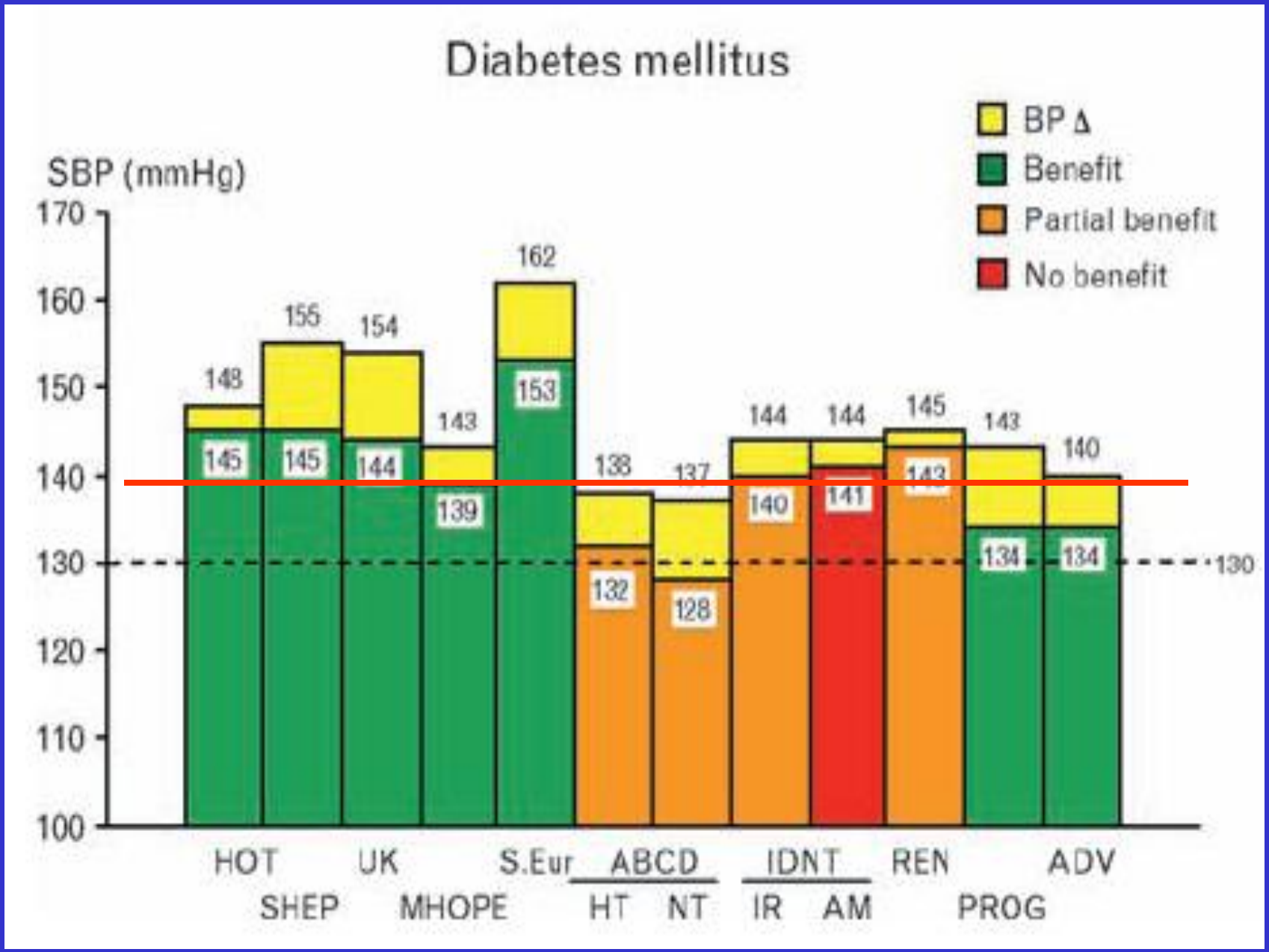


Idéal PAD 72-82 mmHg

Adjusted 5-year risk of primary outcome in relation to achieved DBP (divided in to quartiles) at any level of achieved SBP. Note that for any given SBP, the risk is highest with the lowest DBP; additionally, the lowest risk for a given SBP occurs with the third quartile of DBP.

Ces cibles sont-elles fondées sur l'évidence?

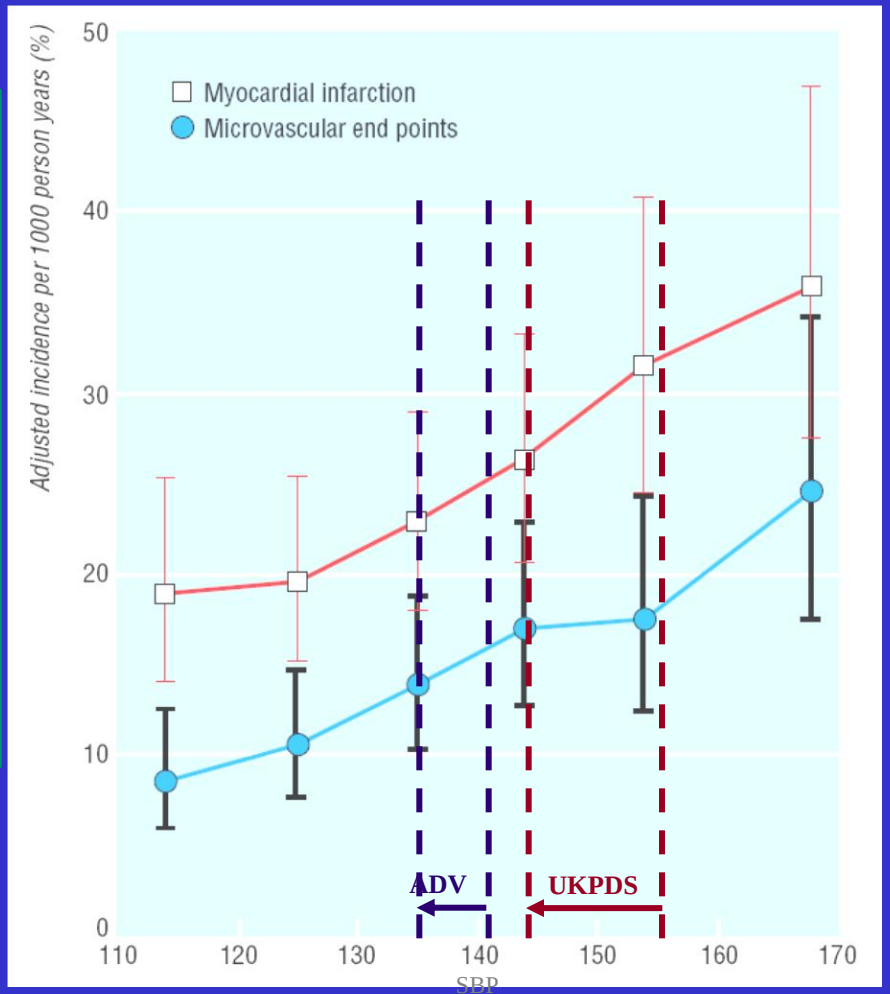
- HTA non compliquée: PA< 140/90 mmHg (jusque 120-75 mmHg)
- HTA sujet âgé: PA <150/80 mmHg (jusque 140/70 mmHg)
- HTA et antécédent CV: PA<140/85 mmHg (jusque PA 130/75 mmHg)
- HTA et **Diabète**
- HTA et IRC


Diabetes mellitus
BP Δ
Benefit
Partial benefit
No benefit
SBP (mmHg)
170
160
150
140
130
120
110
100
148
155
154
143
162
145
145
144
139
153
138
137
132
128
144
144
145
143
140
140
141
143
134
134
130
HOT
SHEP
UK
MHOPE
S.Eur
ABCD
HT
NT
IDNT
IR
AM
REN
PROG
ADV

ADVANCE BP reduction in context:

UK Prospective Diabetes Study

PA finale 134/75 mmHg



Diminution des events CV 15% et rénaux 20%

The Lancet, Published online September 2, 2007 ADVANCE

UKPDS BMJ 1998

Ces cibles sont-elles fondées sur l'évidence? Protection CV

- HTA non compliquée: PA< 140/90 mmHg (jusque 120-75 mmHg) **cible confirmée**
- HTA sujet âgé: PA <150/80 mmHg (jusque 140/70 mmHg) **cible moins sévère**
- HTA et antécédent CV: PA<140/85 mmHg (jusque PA 130/75 mmHg) **cible moins sévère**
- HTA et Diabète: PA< 135/85 mmHg (jusque 130/75 mmHg) **cible moins sévère**
- HTA et **IRC**

Relation PA et risque d'insuffisance rénale

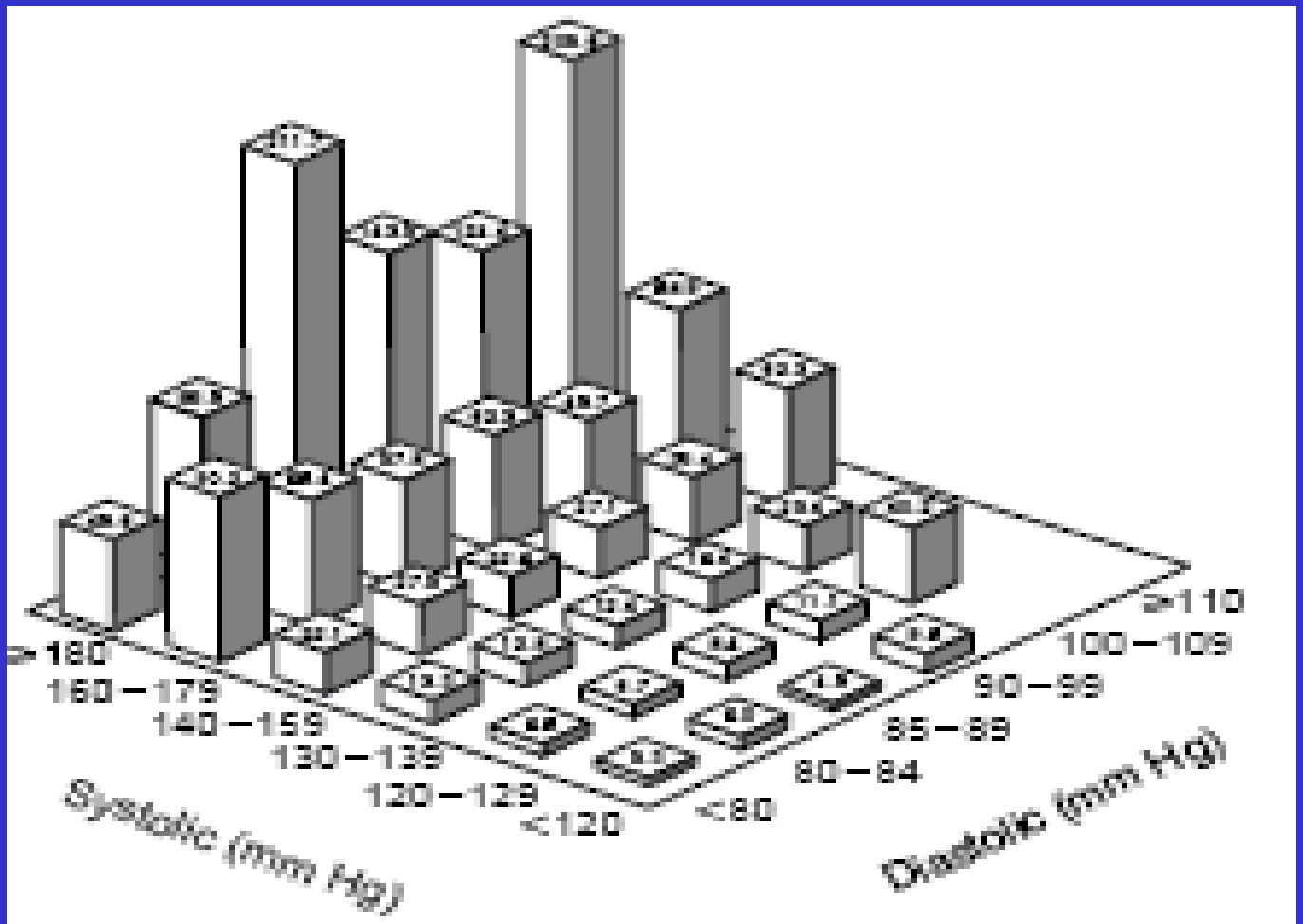


Figure 2. Age-Adjusted Rate of End-Stage Renal Disease Due to Any Cause per 100,000 Person-Years, According to Systolic and Diastolic Blood Pressure in 332,544 Men Screened for MRFIT.

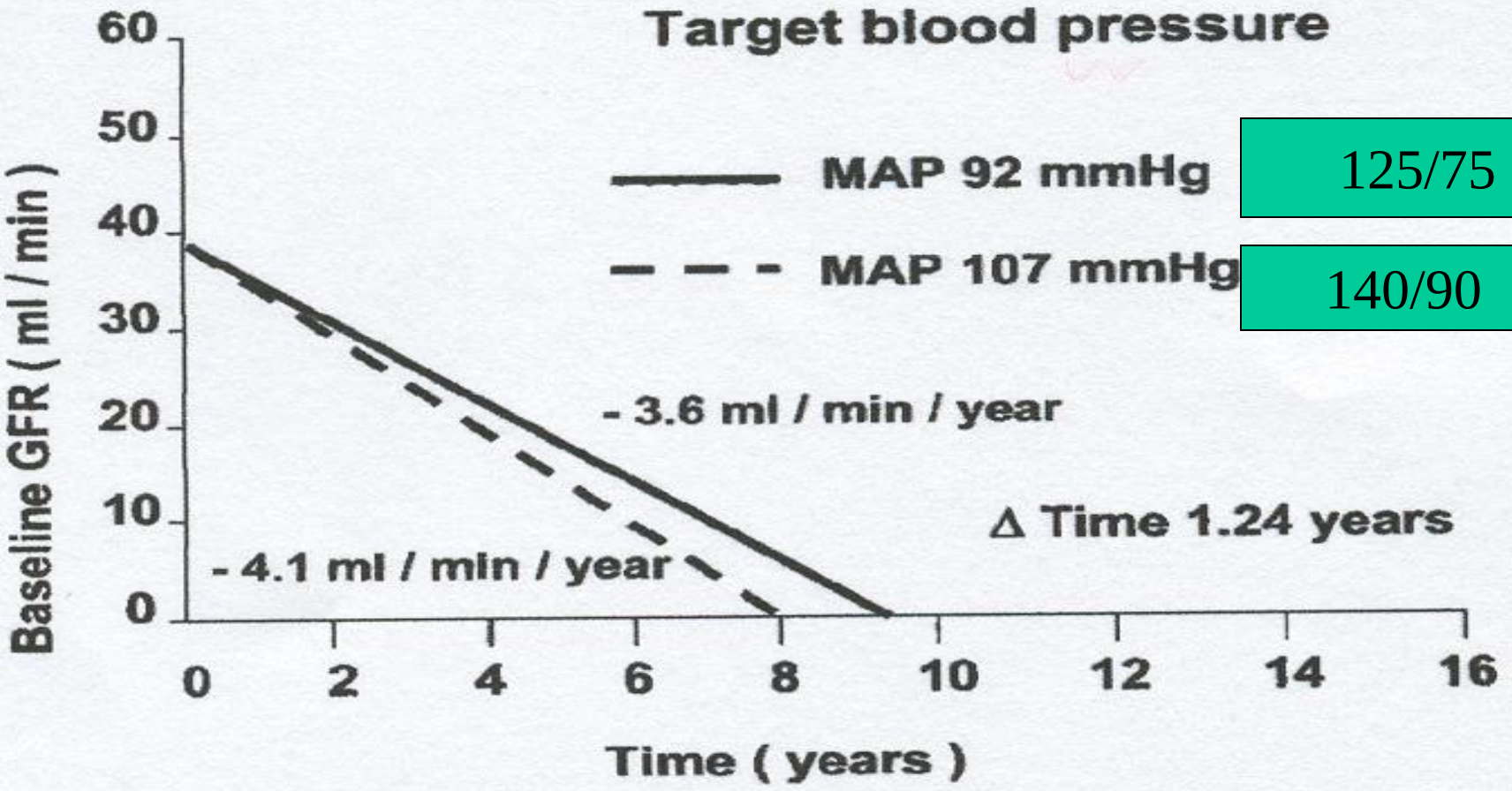


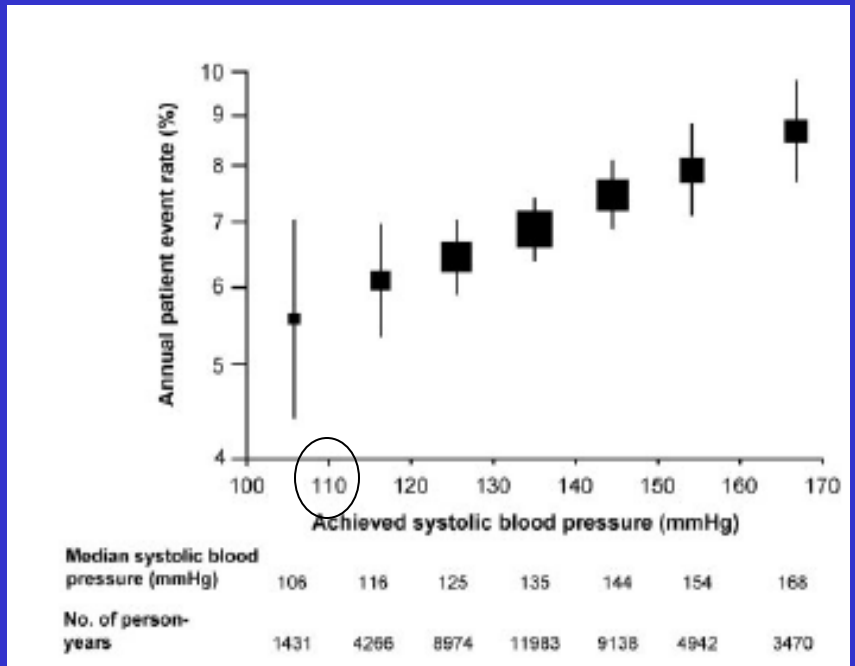
Figure 1. In MDRD study A, the strict BP control for a projected mean of 9.4 yr delays the beginning of renal replacement therapy by 1.24 yr.

MDRD, Klahr et al NEJM 1994

Lowering Blood Pressure Reduces Renal Events in Type 2 Diabetes

Bastiaan E. de Galan,*† Vlado Perkovic,* Toshiharu Ninomiya,* Avinesh Pillai,* Anushka Patel,* Alan Cass,* Bruce Neal,* Neil Poulter,‡ Stephen Harrap,§ Carl-Erik Mogensen,‖ Mark Cooper,¶ Michel Marre,** Bryan Williams,†† Pavel Hamet,‡‡ Giuseppe Mancia,§§ Mark Woodward,* Paul Glasziou,‖‖ Diederick E. Grobbee,¶¶ Stephen MacMahon,* and John Chalmers,*
on behalf of the ADVANCE Collaborative Group

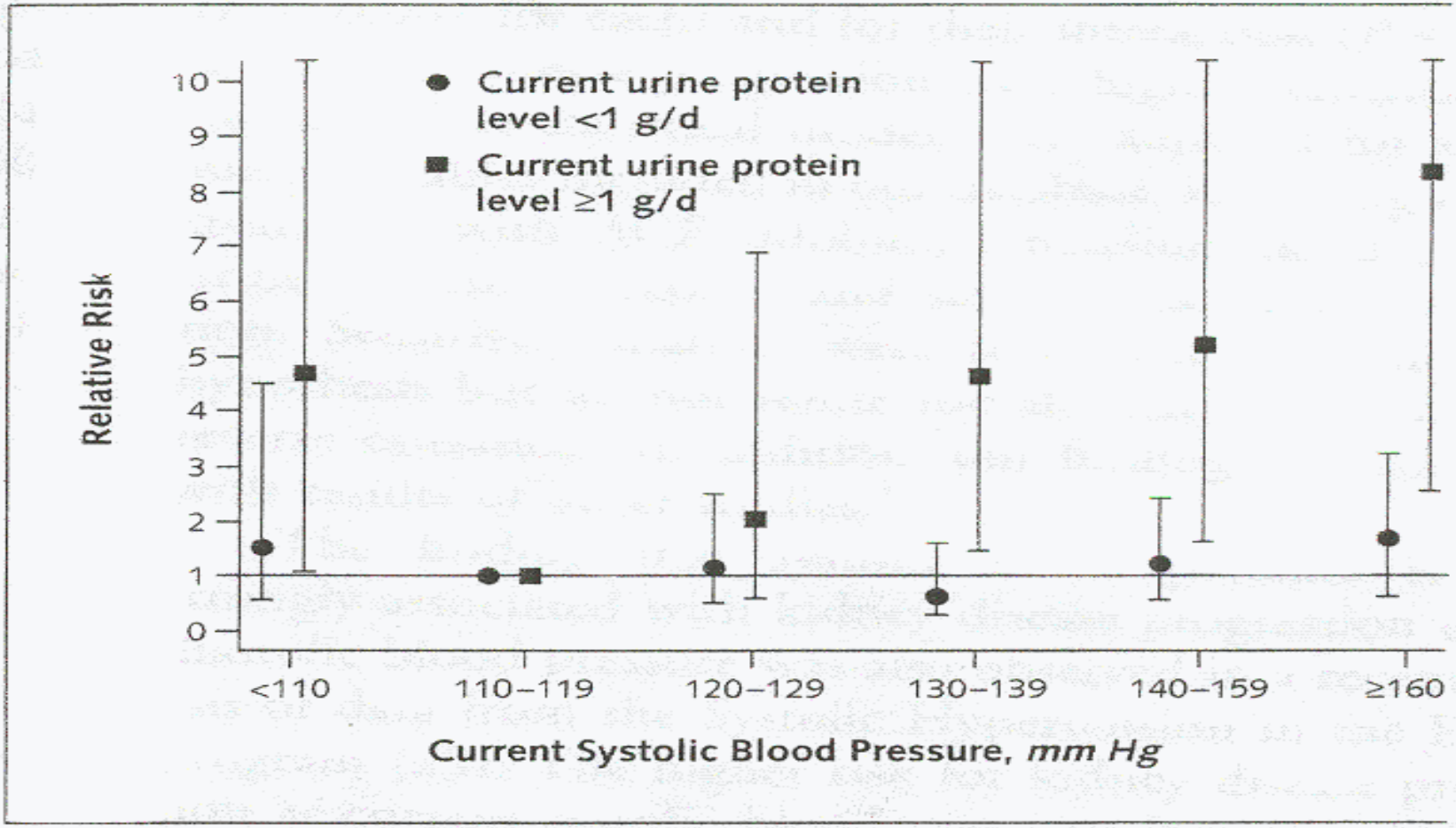
ADVANCE: protection rénale jusque PAS de 110 mmHg



Median systolic blood pressure (mmHg)	106	116	125	135	144	154	168
No. of person-years	1431	4266	8974	11983	9138	4942	3470

Figure 4. Incidence of all renal events according to achieved BP levels, adjusted for age, gender, duration of diabetes, glycosylated hemoglobin, currently treated hypertension, history of macrovascular disease, electrocardiogram abnormalities (ventricular hypertrophy, Q waves, or atrial fibrillation), triglycerides, LDL cholesterol, HDL cholesterol, body mass index, current smoking,

Figure. Relative risk for kidney disease progression based on current level of systolic blood pressure and current urine protein excretion.



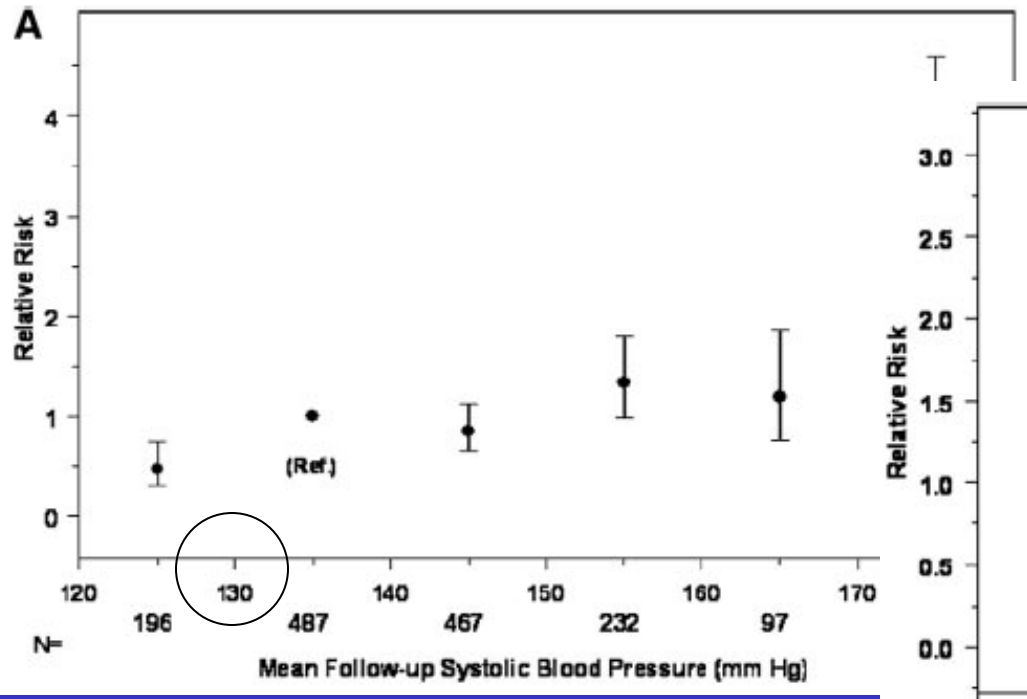
Jafar et al. Ann Intern Med 2003

Impact of Achieved Blood Pressure on Cardiovascular Outcomes in the Irbesartan Diabetic Nephropathy Trial

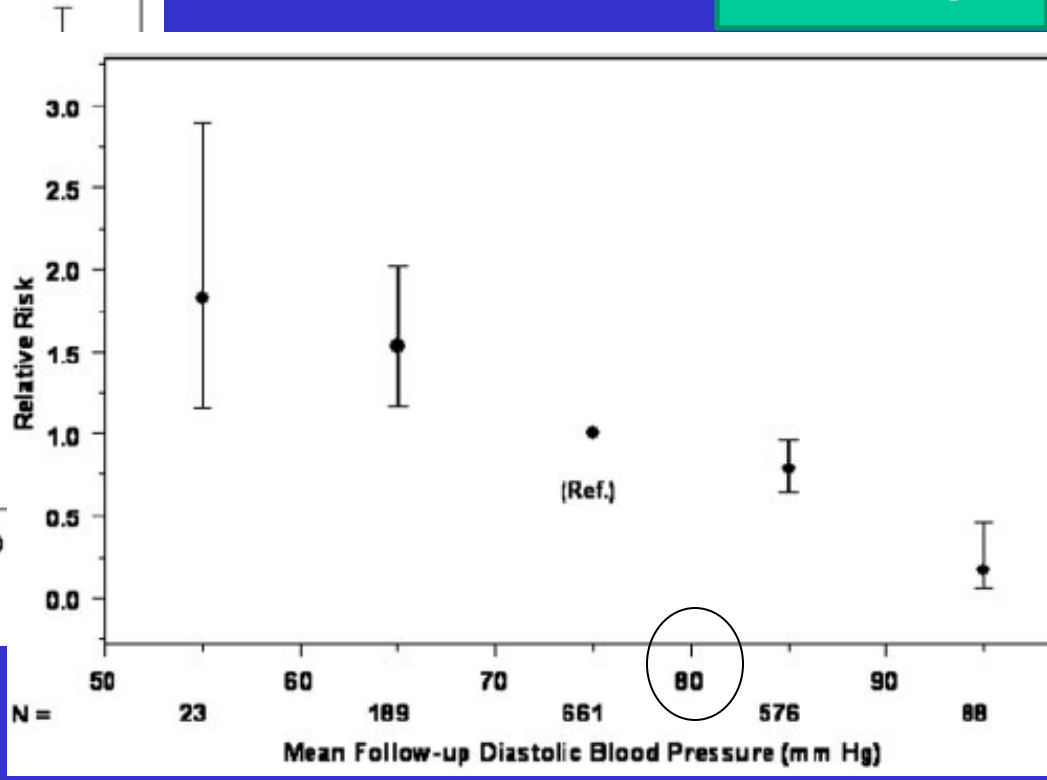
Tomas Berl,* Lawrence G. Hunsicker,† Julia B. Lewis,‡ Marc A. Pfeffer,§ Jerome G. Porush,‖ Jean-Lucien Rouleau,¶ Paul L. Drury,# Enric Esmatjes,** Donald Hricik,†† Marc Pohl,‡‡ Itamar Raz,§§ Philippe Vanhille,‖‖ Thomas B. Wiegmann,¶¶ Bernard M. Wolfe,## Francesco Locatelli,*** Samuel Z. Goldhaber,§ and Edmund J. Lewis;††† for the Collaborative Study Group[a]

Am Soc Nephrol 16: 2170–2179, 2005

Best CV Protection 130/80 mmHg



Mortalité CV



Infarctus Myocarde

Ces cibles sont-elles fondées sur l'évidence?

- HTA non compliquée: PA< 140/90 mmHg (jusque 120-75 mmHg) cible confirmée
- HTA sujet âgé: PA <150/80 mmHg (jusque 140/70 mmHg) cible moins sévère
- HTA et antéc CV: PA<140/85 mmHg (jusque PA 130/75 mmHg) cible moins sévère
- HTA et Diabète: PA< 135/85 mmHg (jusque 130/75 mmHg) cible moins sévère
- HTA et IRC: PA< 130/85 mmHg (jusque 110/75) **cible confirmée pour le rein, à individualiser pour le CV**

Que dit l'évidence sur quand démarrer le traitement? Mancia et al ESH 2009

- HTA grade 2 (PA > 159/99 mmHg).
- HTA grade 1, SANS FR, <u>après qq semaines</u> de règles H-D.
- PAN haute et diabète **<u>si</u>** µalbuminurie ou protéinurie.
- PA N haute et risque CV> , pas de preuve de devoir démarrer un antiHTA!

Cible tensionnelle recommandée en 2009

Mancia et al J HTA Nov 2009

- < 140/90 mmHg chez la majorité des hypertendus
- Viser une PA plus basse quand haut risque CV, diabète, CKD est probablement sage
- **Idéal actuel: 130-139/80-85 mmHg**
- **Agir sur les autres FR associés**!
- Quand HTA systolique isolée, ne pas diminuer la PAD sous 70 mmHg, stt si coronarien ou fumeur.