

New Scientific Evidence Leading to Modify Hypertension Treatment: How to Initiate Pharmacological Treatment

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Conflict of interest concerning this presentation: None

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Current Controversies in Hypertension Treatment

- **When initiate pharmacological treatment?**
 - Elderly patients
 - Low-risk grade 1 hypertensive patients
 - High-normal blood pressure (prehypertension)
- **Which blood pressure targets have to be achieved**
 - Primary prevention
 - Secondary prevention

2013 ESH/ESC Guidelines Recommendations

When to initiate antihypertensive drug treatment

Recommendations	Class	Level
In elderly hypertensive patients drug treatment is recommended when SBP is ≥ 160 mmHg	I	A
May also be considered in younger than 80 years) when SBP is in the 140–159 mmHg range, if antihypertensive treatment is well tolerated	IIb	C
Drug treatment should be considered in grade 1 hypertensive patients at low-moderate risk, after a period of time with lifestyle measures	IIa	B
Unless the necessary evidence is obtained it is not recommended to initiate antihypertensive drug therapy at high normal BP	III	A

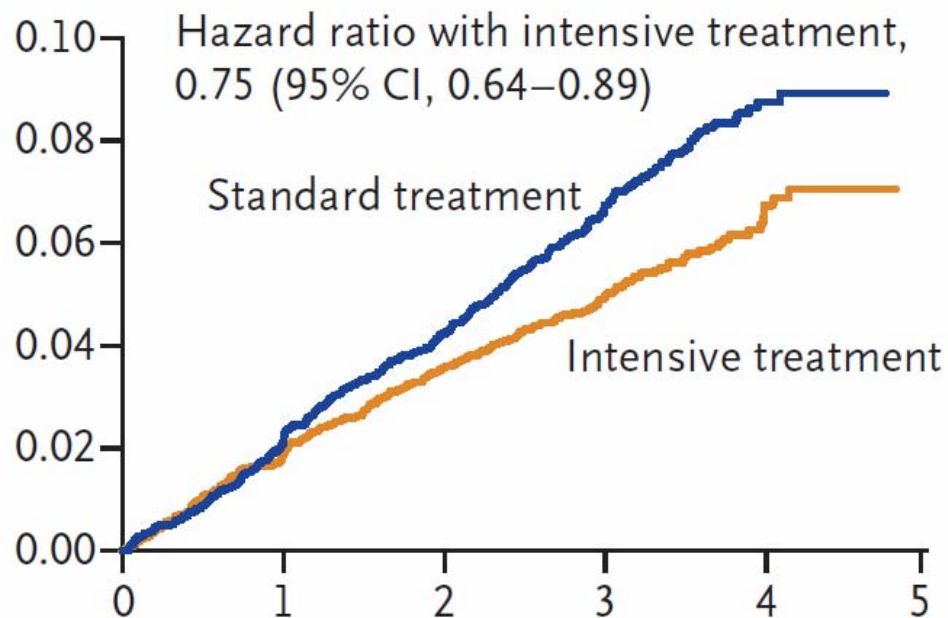
Initiation of Antihypertensive Treatment in Elderly patients in the SPRINT Study

Table 1. Baseline Characteristics of the Study Participants.*

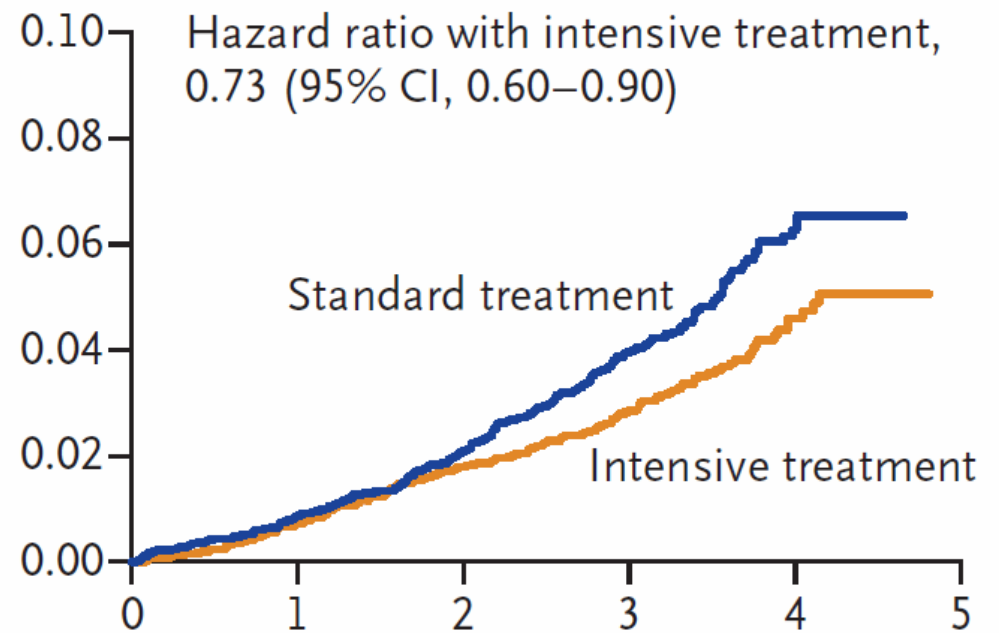
Characteristic	Intensive Treatment (N = 4678)	Standard Treatment (N = 4683)
Criterion for increased cardiovascular risk — no. (%)†		
Age ≥75 yr	1317 (28.2)	1319 (28.2)
Chronic kidney disease‡	1330 (28.4)	1316 (28.1)
Cardiovascular disease	940 (20.1)	937 (20.0)
Clinical	779 (16.7)	783 (16.7)
Subclinical	247 (5.3)	246 (5.3)
Framingham 10-yr cardiovascular disease risk score ≥15%	2870 (61.4)	2867 (61.2)

Primary Outcomes in Standard and Intensive Treatment Groups in the SPRINT Study

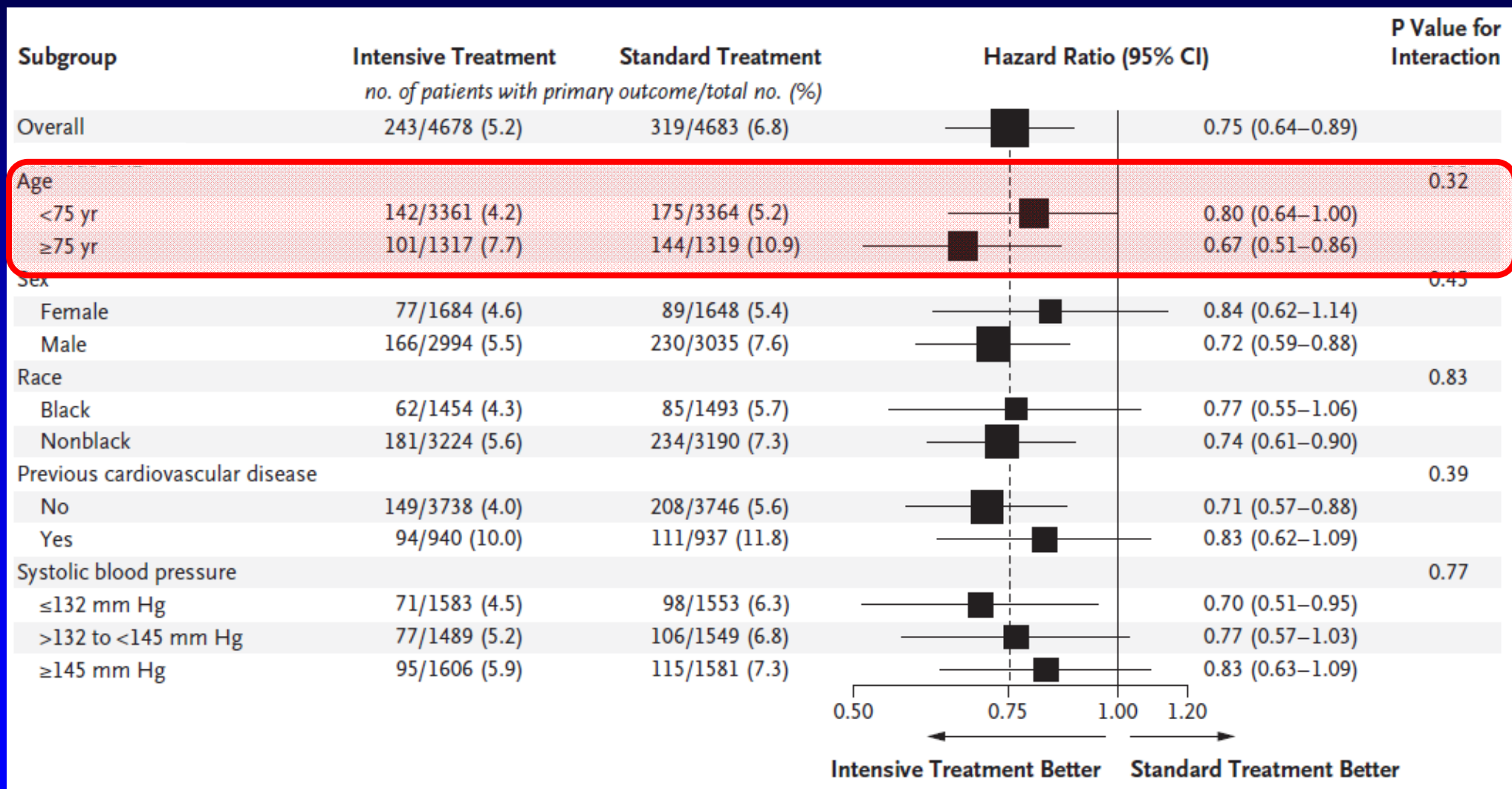
Primary Outcome



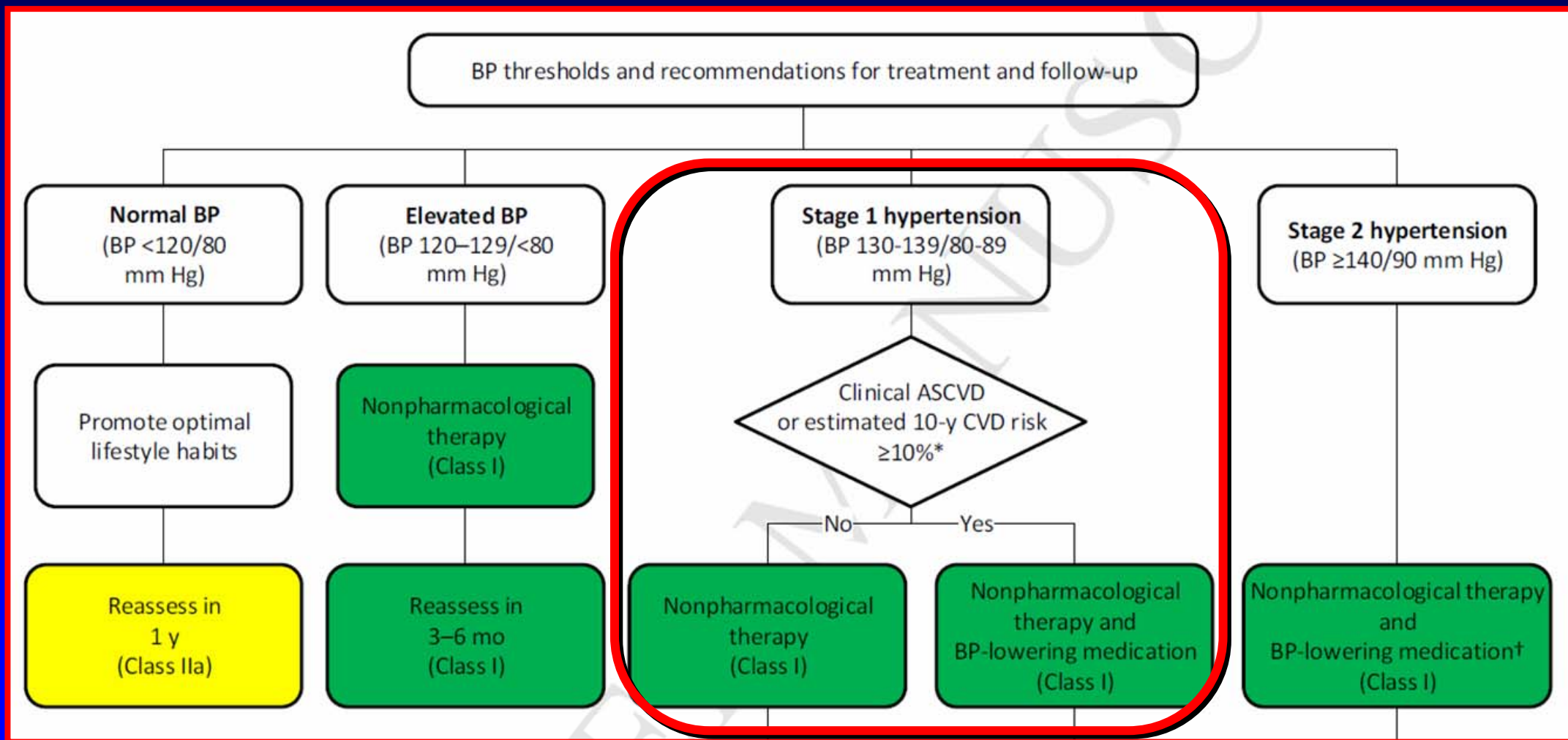
Total Mortality



Primary Outcomes in Patients ≥ 75 years in the SPRINT Study



Initiation of Antihypertensive Treatment in the 2017 ACC/AHA Hypertension Guidelines



Brief Review

Unattended Blood Pressure Measurements in the Systolic Blood Pressure Intervention Trial

Implications for Entry and Achieved Blood Pressure Values Compared With Other Trials

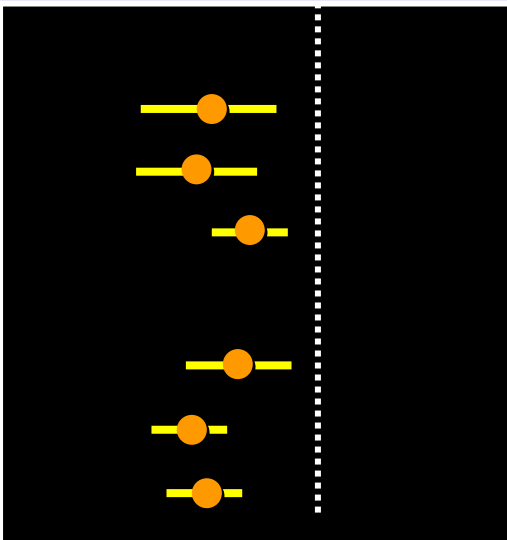
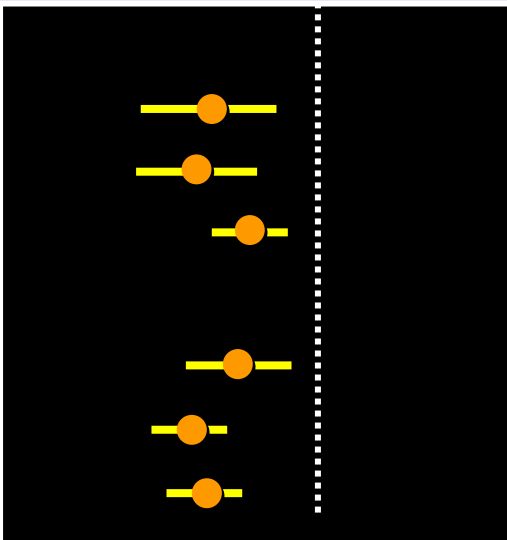
Sverre E. Kjeldsen, Per Lund-Johansen, Peter M. Nilsson, Giuseppe Mancia

Table. Automated/Semiautomated Devices Used for Measurements of Blood Pressure in Large Outcome Trials That Have Used the Automated Office Blood Pressure Measurement Technique

Trial	Device	Status of Observation	References
ACCORD	Model 907, Omron Healthcare, Lake Forest, IL	Attended	The ACCORD Study Group ²
SPS3	Colin BP-8800C, Press Mate, Meena Medical Inc, Bedford, TX	Attended	The SPS3 Study Group ³
SPRINT	Model 907, Omron Healthcare, Lake Forest, IL	Unattended	The SPRINT Research Group ⁷
HOT	Visomat OZ, D2 International, Hestia Pharma GmbH, Germany	Attended	Hansson et al ⁹
TROPHY	HEM-705CP, Omron Healthcare, Lake Forest, IL	Attended	Julius et al ¹⁹
ONTARGET	HEM-757, Omron Corporation, Tokyo, Japan	Attended	Verdecchia et al ²⁰
TRANSCEND	HEM-757, Omron Corporation, Tokyo, Japan	Attended	Verdecchia et al ²⁰

Primary Stroke Prevention in Grade 1 Hypertension

8,974 patients with grade 1 HT included in the meta-analysis

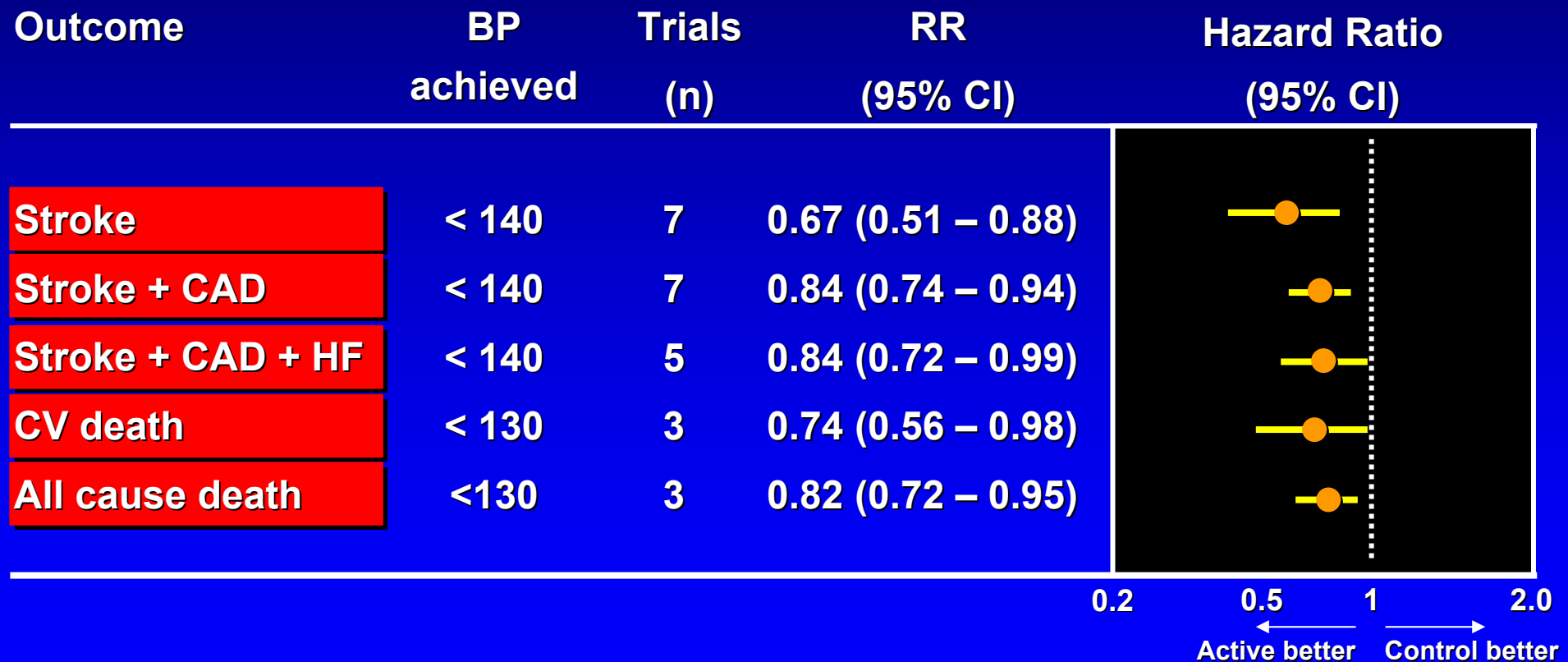
Outcome	HT grade (stage)	Trials (n)	RR (95% CI)	Standardized RR (95% CI)	P value for trend
Stroke	1	4	0.71 (0.60 – 0.83)		0.19
	2	17	0.68 (0.61 – 0.77)		
	3	8	0.64 (0.54 – 0.76)		
Stroke + CAD	1	4	0.79 (0.71 – 0.88)		0.32
	2	16	0.77 (0.72 – 0.83)		
	3	8	0.71 (0.64 – 0.79)		

0.3 0.6 1 1.5

← Active better Control better →

New Evidence in Hypertensive Patients with Low and Moderate CV Risk

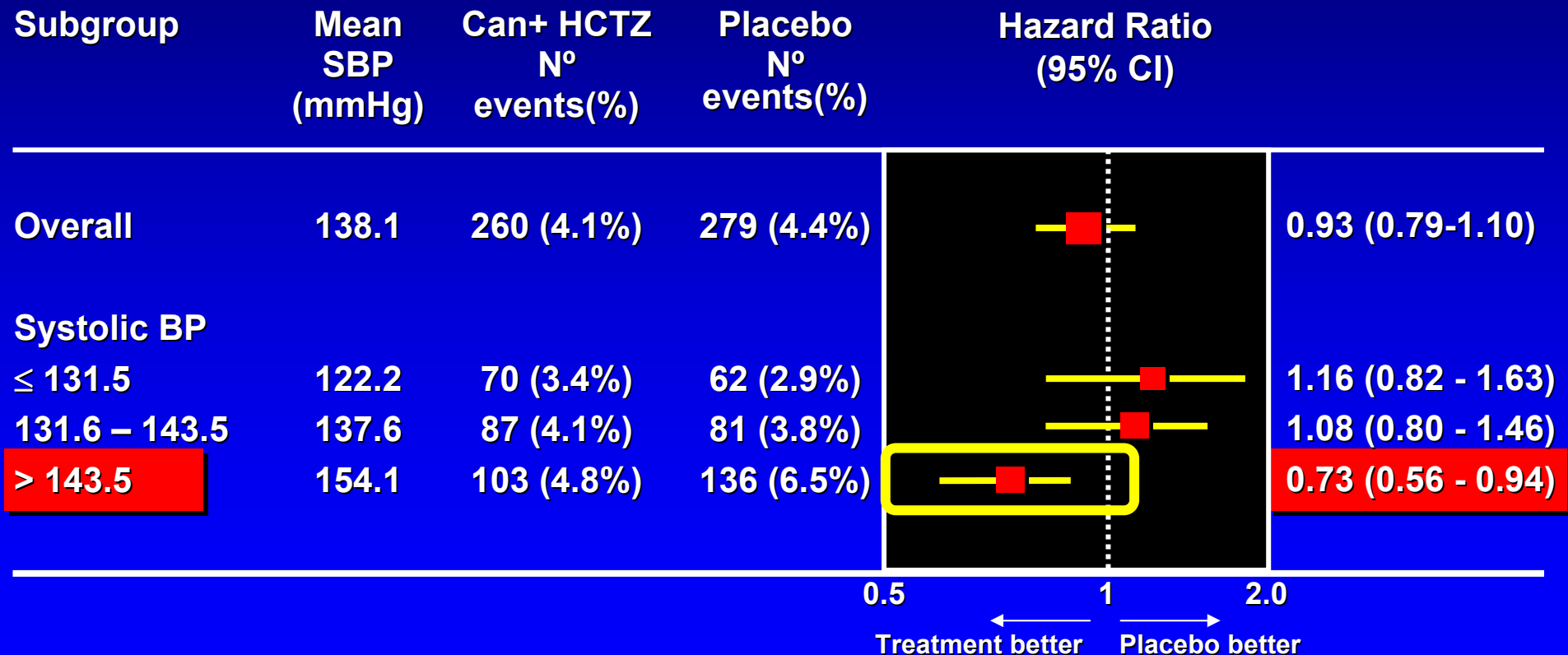
72,807 patients with low/moderate risk included in the meta-analysis



New Evidence in Hypertensive Patients with Low and Moderate CV Risk

HOPE - 3 Trial

First Co-primary Outcome: composite of CV death, nonfatal MI, or nonfatal stroke



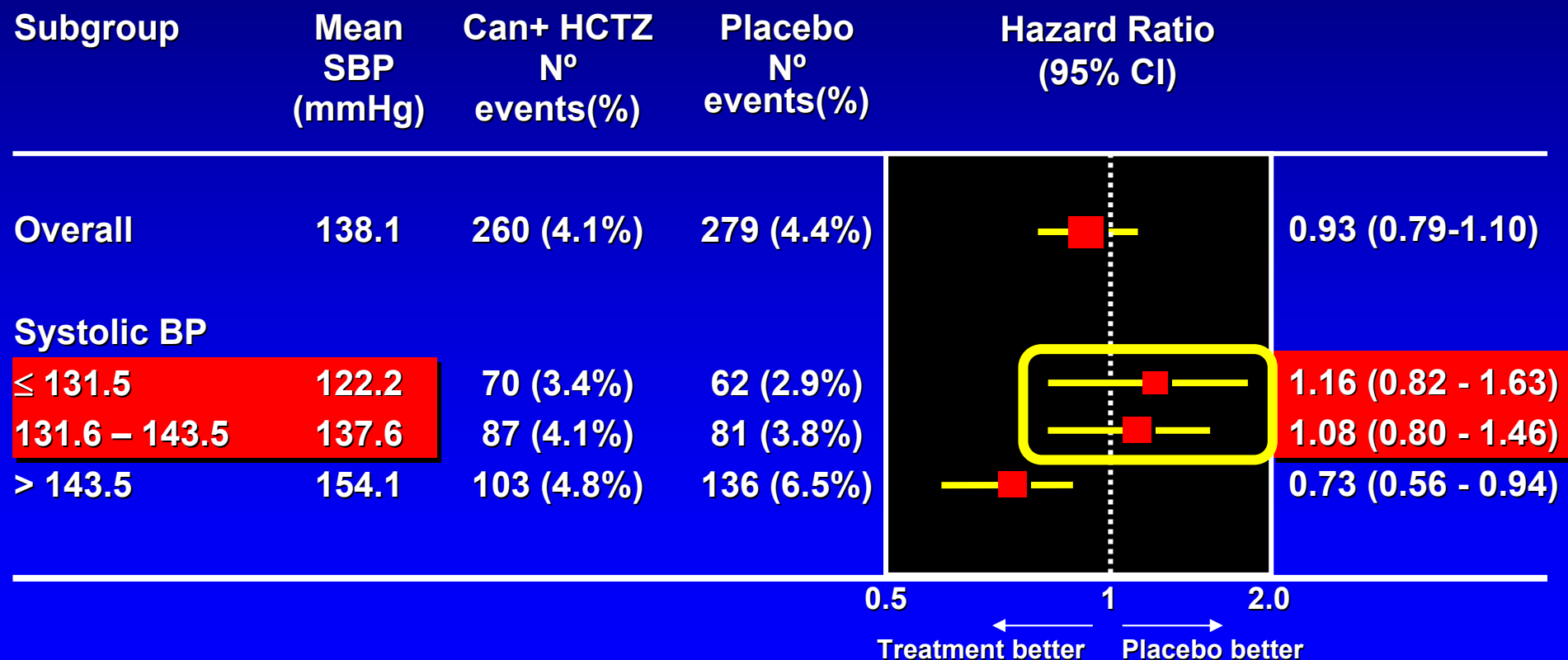
Initiation of Antihypertensive Treatment in High-normal Blood Pressure

Recommendations		Class	Level
Unless the necessary evidence is obtained it is not recommended to initiate antihypertensive drug therapy at high normal BP		III	A
1 or 2 additional CVRF	Life Style	Life Style (weeks) Drug Treatment	Life Style (weeks) Drug Treatment
3 or more CVRF	Life Style	Life Style (weeks) Drug Treatment	
TOD, stage 3 CKD or Diabetes	Life Style		
Clinical CV disease, CKD stage ≥ 4 , or Diabetes with TOD/CVRF	Life Style		

New Evidence in Subjects with High-normal Blood Pressure

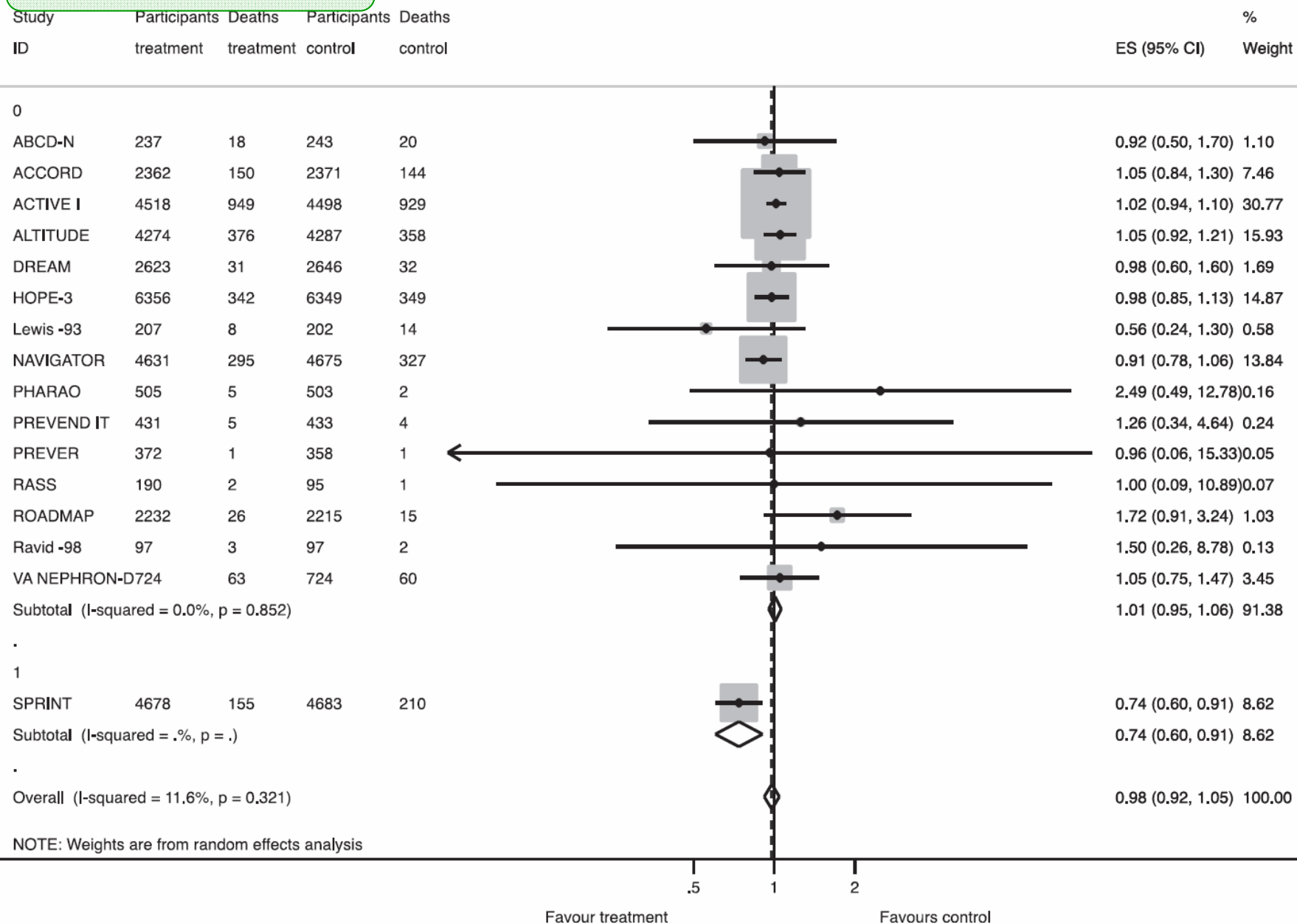
HOPE - 3 Trial

First Co-primary Outcome: composite of CV death, nonfatal MI, or nonfatal stroke



High-normal BP = 66.816 patients
Mean baseline BP = 138 mmHg

All-cause mortality



Initiation of Antihypertensive Treatment in High-normal Blood Pressure

Recommendations	Class	Level
Unless the necessary evidence is obtained it is not recommended to initiate antihypertensive drug therapy at high normal BP	III	A
1 or 2 additional CVRF	Life Style	Life Style
Life Style	Life Style (weeks)	Life Style (weeks)
Future Recommendations	Class	Level
Lifestyle changes are recommended. Drug treatment should be considered when their CV risk is high or very high due to established CVD	I	A
Clinical CV disease, CKD stage ≥ 4 , or Diabetes with TOD/CVRF	Drug Treatment	

Initiation of Antihypertensive Treatment: the European Vision

Future Recommendation	2013 ESH/ESC Guidelines			
In patients with grade 1 hypertension, lifestyle interventions should be recommended, and drug treatment should be initiated if this will normalize BP	IIa	B	I	B
In patients with grade 1 hypertension at low-moderate risk and without evidence of TOD, BP-lowering drug treatment is recommended if the patient remains hypertensive after a period of lifestyle intervention			I	A
In patients with high-normal BP lifestyle changes are recommended.			I	A
-Drug treatment may be considered when their CV risk is very high due to established CV disease, especially CAD			IIb	A

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2013 ESH/ESC Guidelines: BP Targets

BP values to be achieved and maintained

BP < 140/90 mmHg

- In hypertensive at low-moderate CV risk
- In hypertensive patients with Stroke or TIA
- In hypertensive patients with CAD
- In hypertensive patients with CKD

Class I

Level B

Class IIa

Level B

BP < 140/85 mmHg

- In hypertensive patients with diabetes

Class I

Level A

BP < 150/90 mmHg

- In hypertensive patients ≥ 65 years

Class I

Level A

Recommended Blood Pressure Targets in the 2017 ACC/AHA Hypertension Guidelines

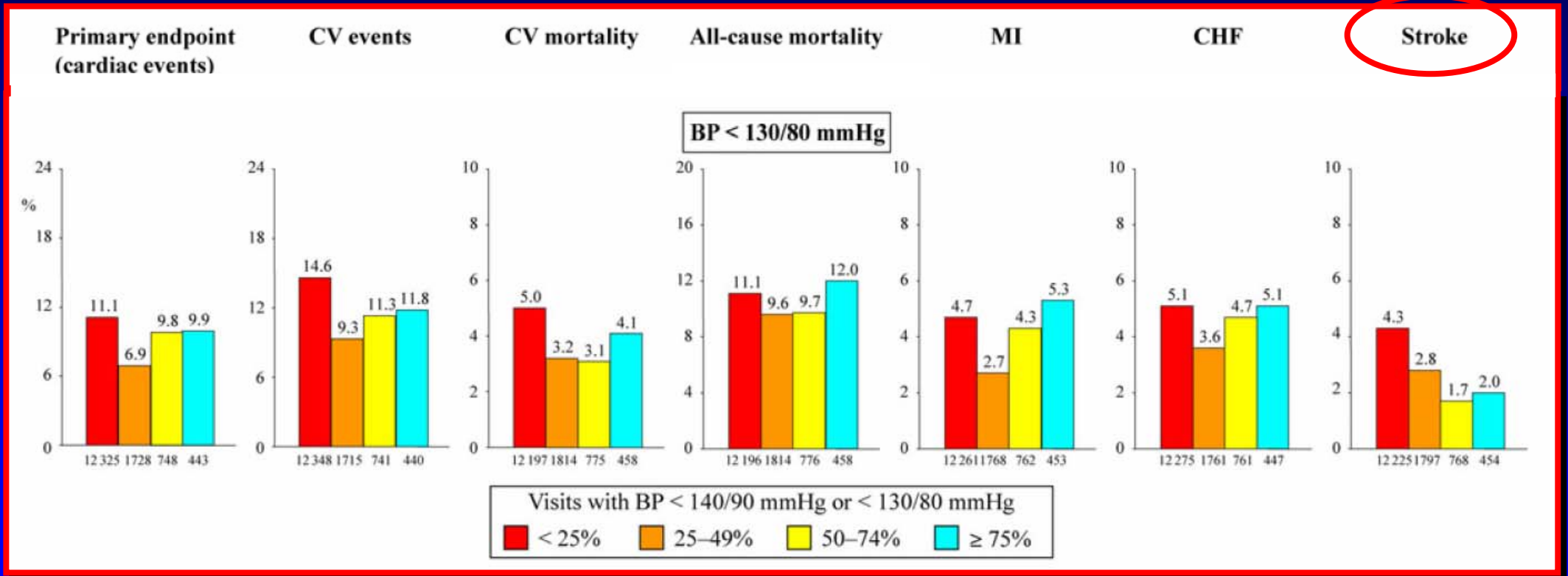
BP Goal for Patients With Hypertension

Recommendations for BP Goal for Patients With Hypertension

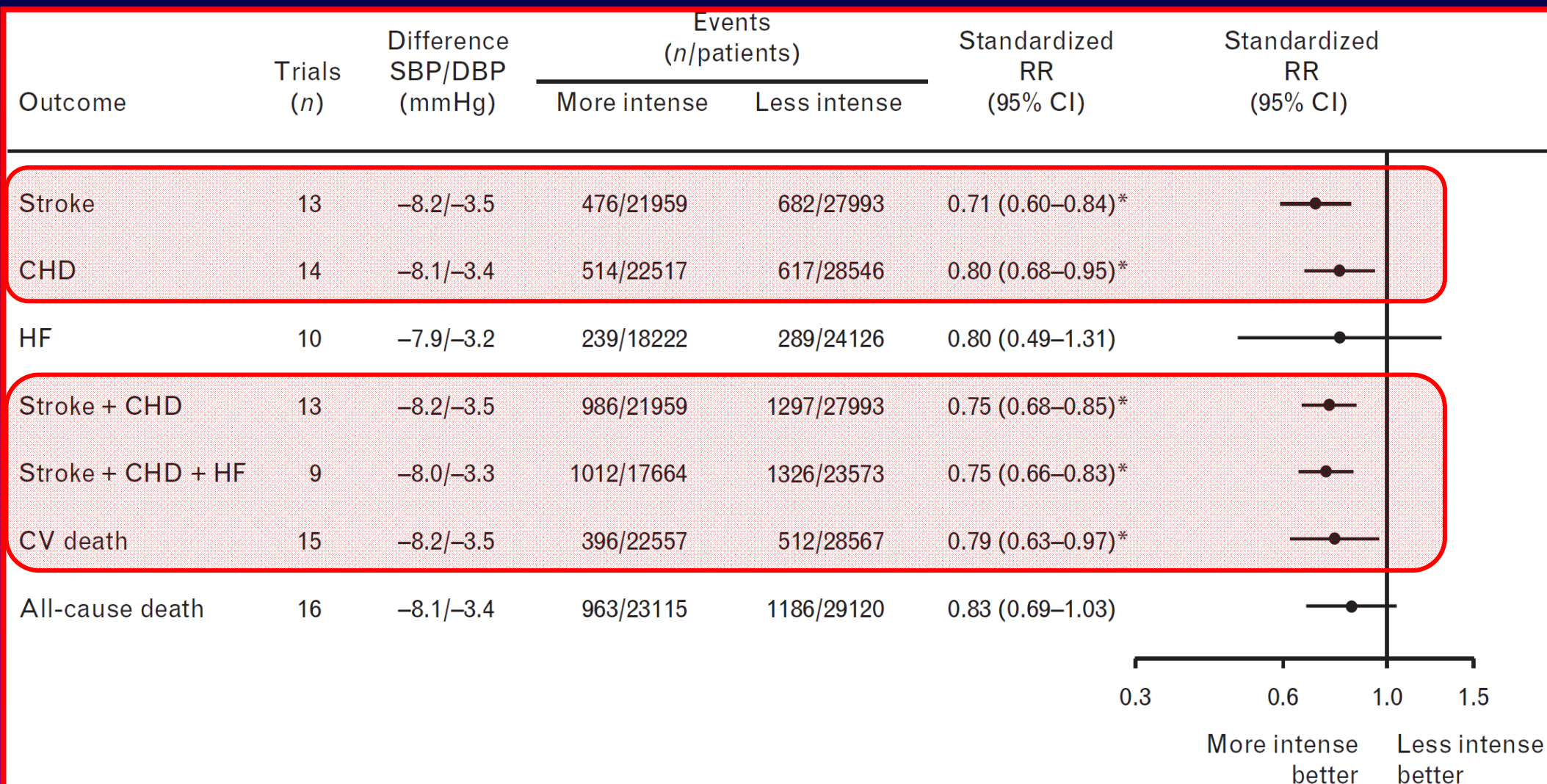
References that support recommendations are summarized in Online Data Supplement 26 and Systematic Review Report.

COR	LOE	Recommendations
I	SBP: B-R ^{SR}	1. For adults with <u>confirmed hypertension and known CVD</u> or 10-year ASCVD event risk of 10% or higher (see Section 8.1.2), a BP target of less than 130/80 mm Hg is recommended (1-5).
	DBP: C-EO	
IIb	SBP: B-NR	2. For adults with <u>confirmed hypertension, without additional markers of increased CVD risk</u> , a BP target of less than 130/80 mm Hg may be reasonable (6-9).
	DBP: C-EO	

Blood Pressure Lowering and CV Prevention in the VALUE Study



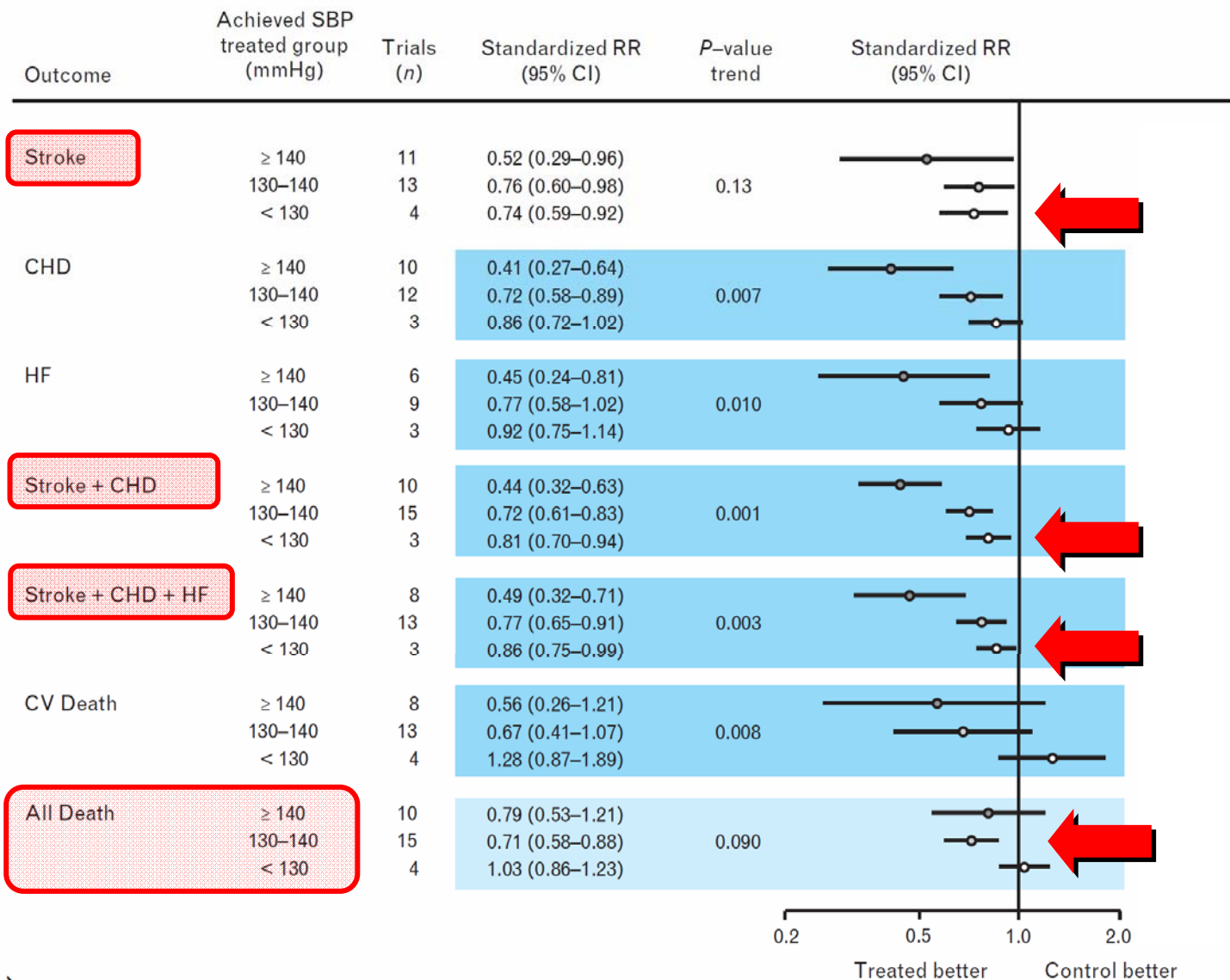
Systolic Blood Pressure Targets for Primary Prevention of CV Disease



Systolic Blood Pressure Targets for Primary Prevention of CV Disease in Diabetic Patients

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