Hypertension guidelines in 2016

clarity vs confusion

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ACC Middle East Conference 2016

What BP goal is most appropriate for a 45 year old patient?

A. <150/90 mmHg

B. <130/80 mmHg

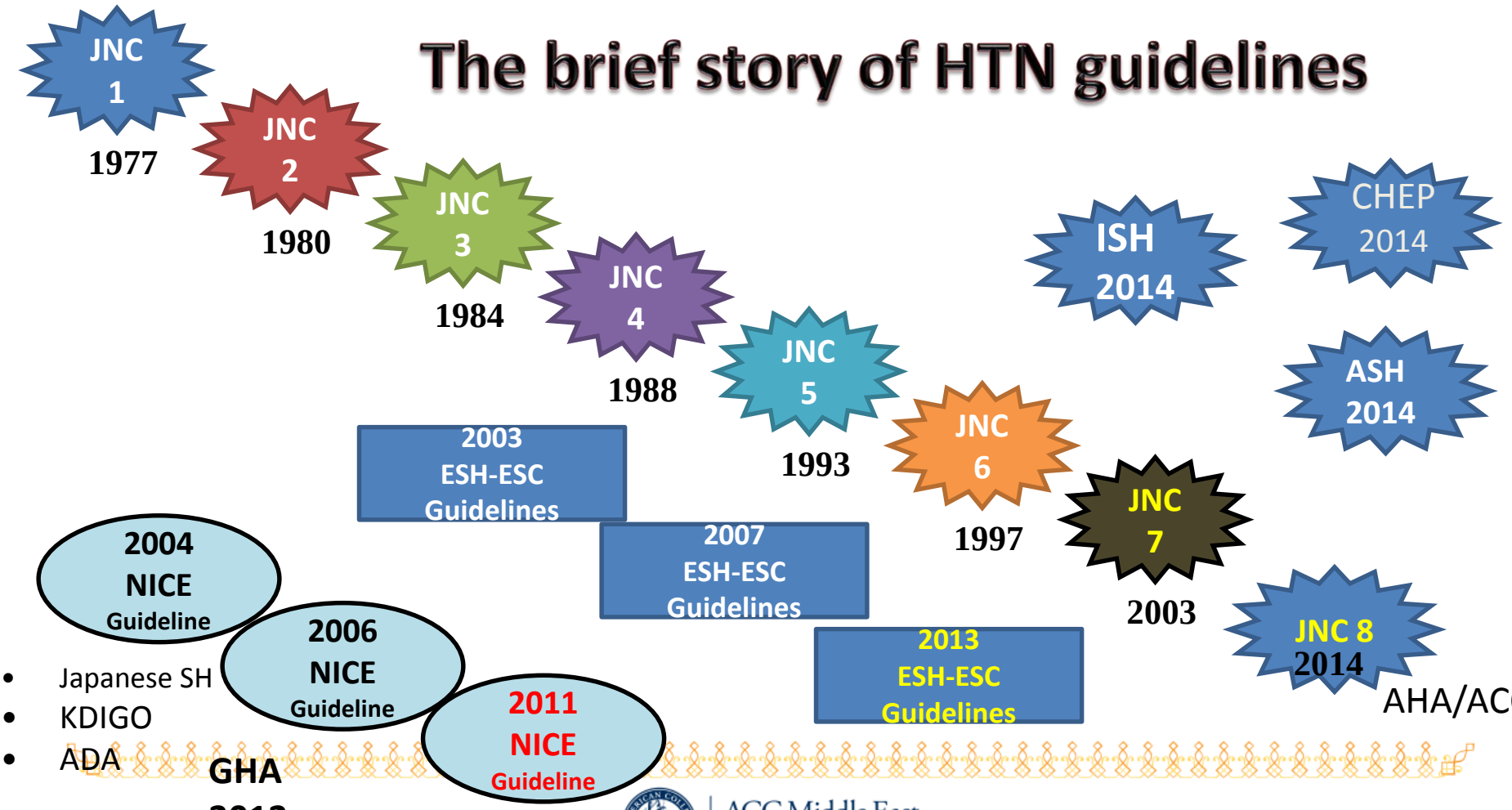
C. <140/90 mmHg

D. <140/80 mmHg

?

Hypertension guidelines

The brief story of HTN guidelines



What do Current guidelines say?

Target Blood Pressure & guidelines

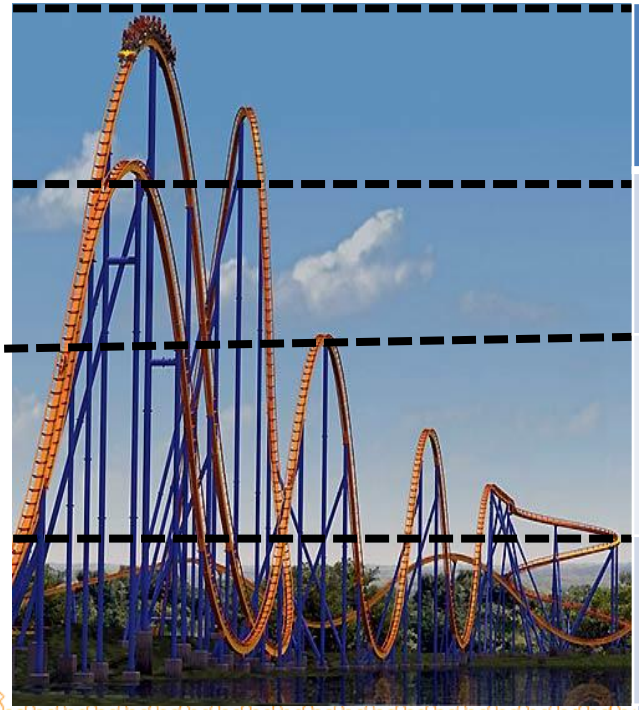
Systolic BP (mmHg)

160

150

140

130



JNC 7 & others Before 2013	JNC 8 2014
	>60 years
Uncomplicated HT	**Uncomplicated & Complicated HT**
DM? CKD? CHD?	

Target Blood Pressure & guidelines

"still no consensus"

BP Goal	JNC-7	JNC-8	ASH/ISH	ESC/ESH	CHEP
Age < 60	<140/90	<140/90	<140/90	<140/90	<140/90
Age 60-79	<140/90	**<150/90**	<140/90	<140/90	<140/90
Age 80+	<140/90	**<150/90**	**<150/90**	**<150/90**	**<150/90**
Diabetes	**<130/80**	**<140/90**	<140/90	**<140/85**	**<130/80**
CKD	**<130/80**	**<140/90**	<140/90	**<130/90†**	<140/90

†Consider with overt proteinuria – otherwise consider goal BP<140/90

Salvo M et al. *Ann Pharmacother* 2014;48:1242-8

Target Blood Pressure & guidelines

Systolic BP (mmHg)

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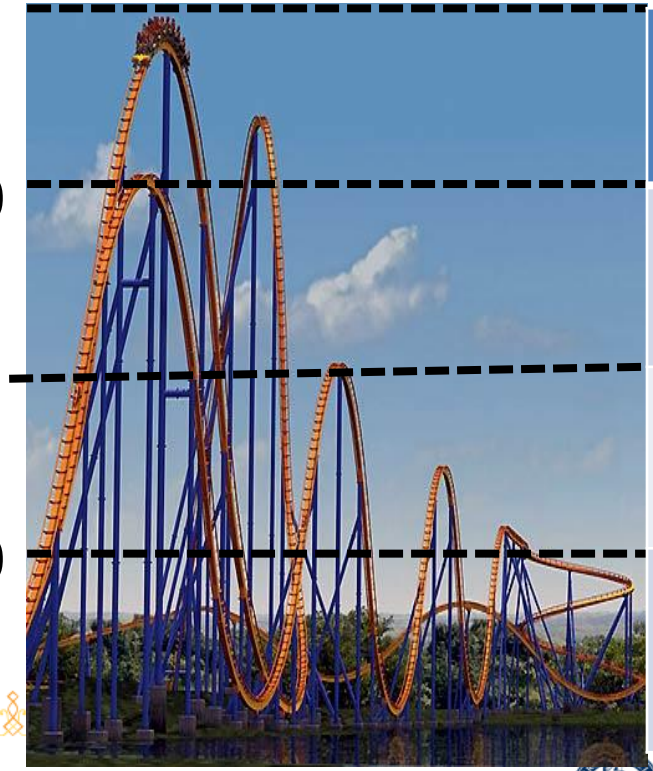
150

140

130



JNC 7 & others Before 2014	JNC 8 2014	2015 SPRINT Trial
	>60 years	
Uncomplicated HT	**Uncomplicated & Complicated HT**	
DM? CKD? CHD?		**??/Uncomplicated & Complicated HT**

SPRINT design

Examine effect of more intensive high blood pressure treatment than is currently recommended

↓

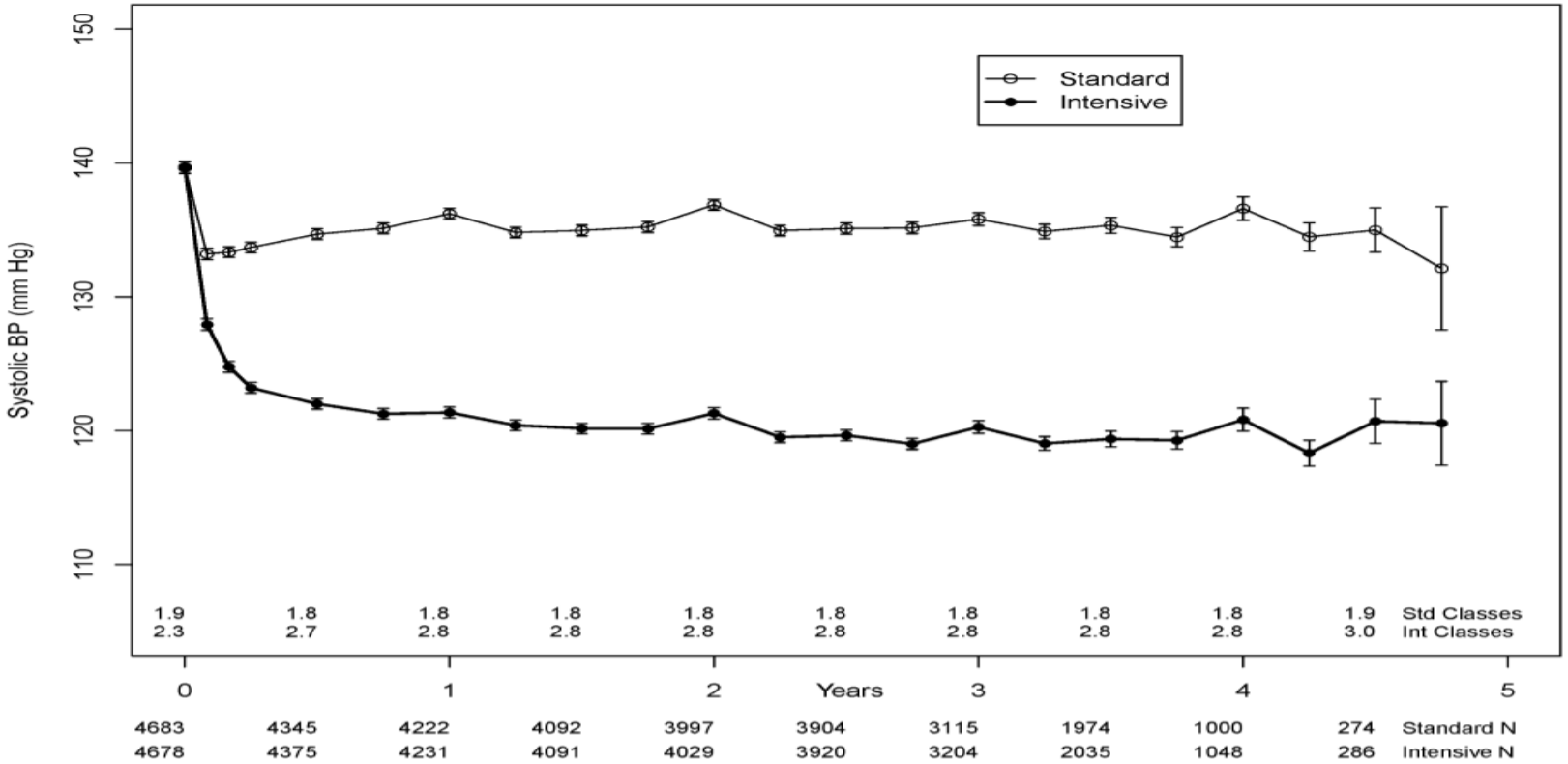
Randomized Controlled Trial
Target Systolic BP

↙ ↘

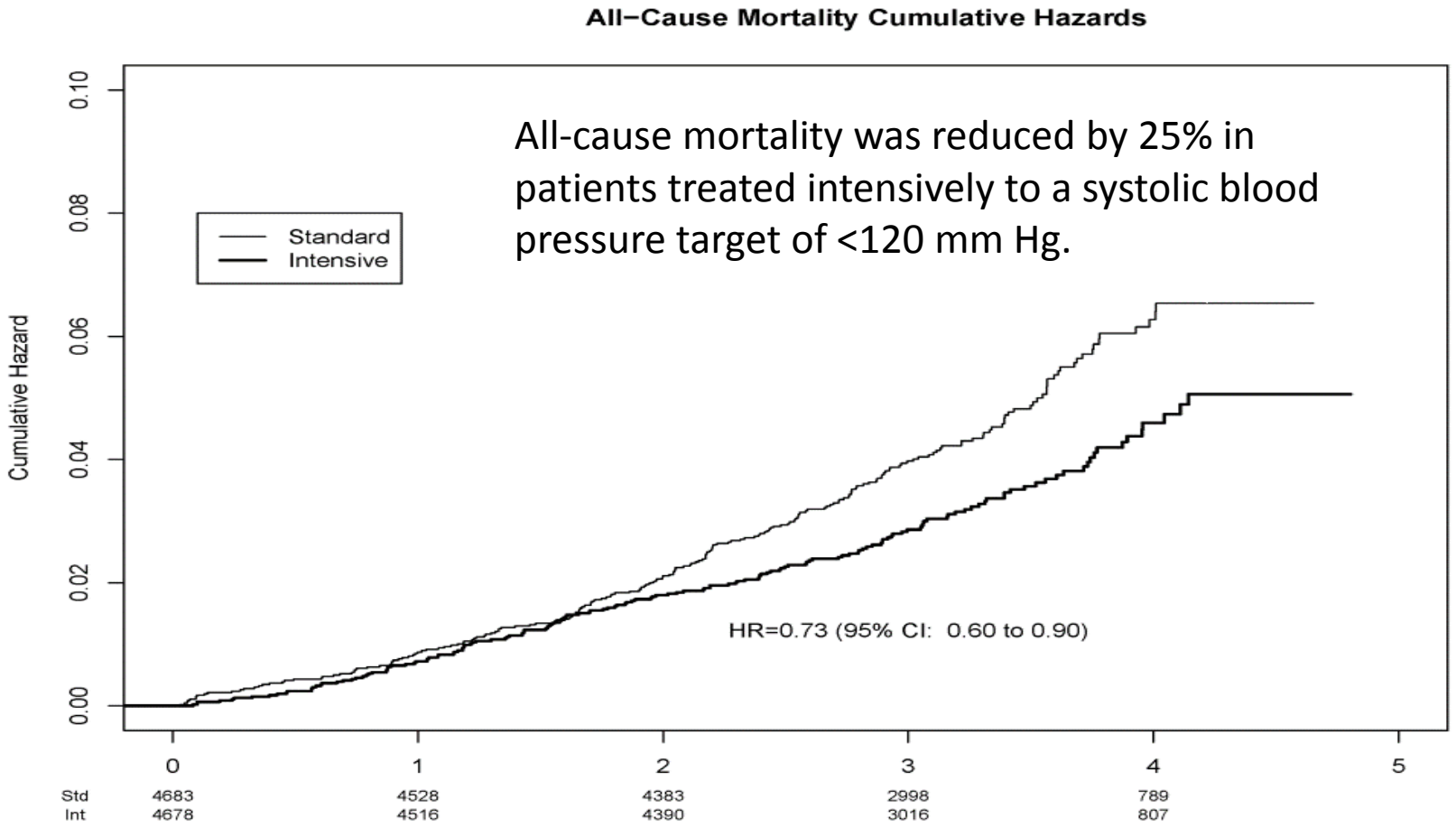
Intensive Treatment
Goal SBP < 120 mm Hg

Standard Treatment
Goal SBP < 140 mm Hg

Mean Systolic BP During Follow-up



SPRINT
Systolic Blood Pressure Intervention Trial



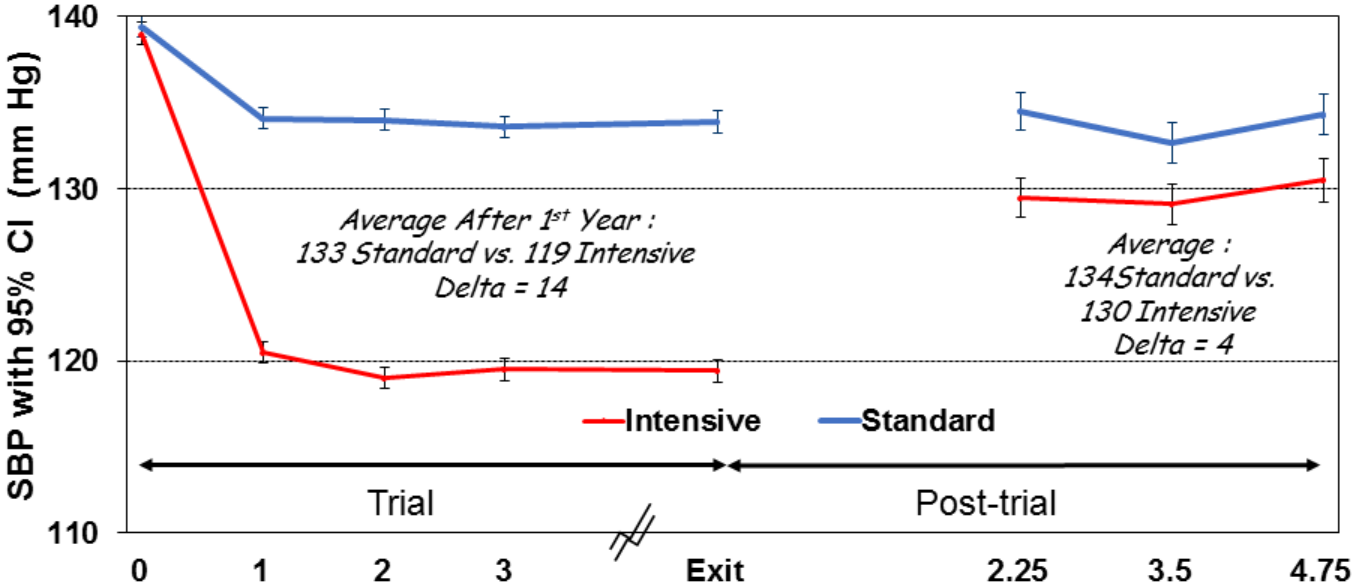
Long-term Cardiovascular Effects of 4.9 Years of Intensive Blood Pressure Control in Type 2 Diabetes Mellitus: The Action to Control Cardiovascular Risk in Diabetes Follow-On Blood Pressure Study (ACCORDION)

William C. Cushman, MD, FACP, FAHA *Veterans Affairs Medical Center, Memphis, TN*
Gregory W. Evans, MA *Wake Forest School of Medicine, Winston-Salem, NC*
Jeffrey A. Cutler, MD, MPH, *National Heart, Lung and Blood Institute, Bethesda, MD*

For The ACCORD/ACCORDION Study Group

ACC Middle East Conference 2016

SBP Over Time (years)

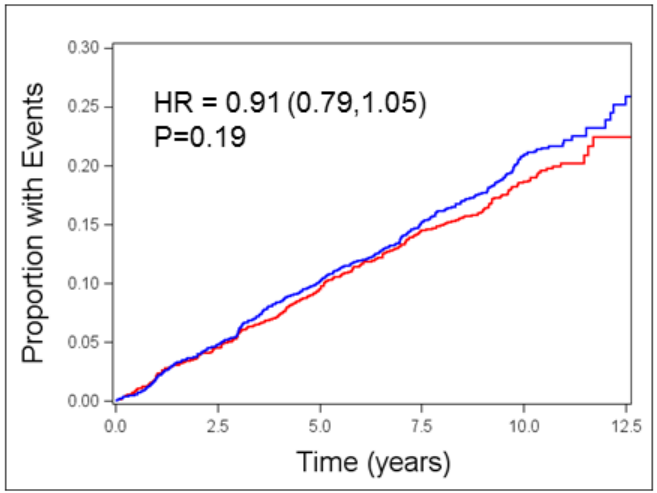


Mean Number of Medications Prescribed:

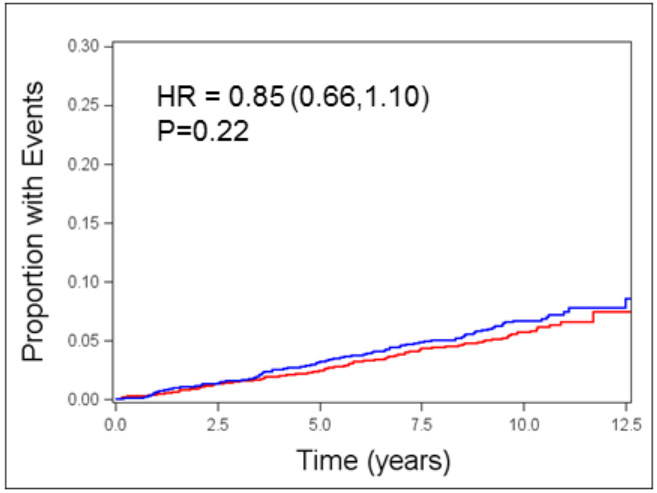
Intensive	3.2	3.4	3.4	3.4	2.3	2.2	2.1
Standard	1.9	2.1	2.1	2.2	2.0	1.9	1.9
Intensive N =	2174	2071	1973	2019	1132	1223	1147
Standard N =	2208	2136	2077	2062	1218	1279	1196

ACCORDION
ACCORD TRIAL FOLLOW-ON STUDY

Primary Outcome: Non-fatal MI, Non-fatal Stroke or CVD Death



Stroke: Fatal or Non-fatal



Intensive Standard

SPRINT v. ACCORD

- Why did that **SPRINT trial succeed** with a SBP target under 120 mm Hg when the **ACCORD trial failed** with intensive treatment to the same target in diabetes?.
  - Both were **large**, **NHLBI-funded** trials comparing treatment with a target of **less than 120 mm Hg** to that aiming for **under 140 mm Hg** in higher risk populations.
- SPRINT showed a **25%** relative reduction in MI, other ACS, stroke, HF, or death from CV causes ($P<0.001$) in a population excluding diabetes, prior stroke, and polycystic kidney disease; whereas
- ACCORD showed a nonsignificant **12%** relative reduction in its primary endpoint of nonfatal MI, nonfatal stroke, and death from CV causes ($P=0.20$).
- Secondary endpoints also diverged. SPRINT showed benefits to the lower target for all-cause and CV mortality and HF **but no stroke reduction**; ACCORD found no significant differences in outcomes **aside from stroke**, both nonfatal and overall.

Blood pressure lowering for prevention of cardiovascular disease and death: a systematic review and meta-analysis.

Ettehad D, Emdin, CA, Kiran M, et al. *Lancet*. 2015.

Interpretation

- Blood pressure lowering significantly reduces vascular risk across various baseline blood pressure levels and comorbidities.

- Our results provide strong support for lowering blood pressure to systolic blood pressures less than 130 mm Hg particularly to individuals with a history of CV disease, CHD, stroke, diabetes, HF, and CKD.

Effects of intensive blood pressure lowering on cardiovascular and renal outcomes: updated systematic review and meta-analysis.

Xie X[1], et al. Lancet. 2016 Jan 30;387(10017

INTERPRETATION:

- Intensive blood pressure lowering (mean BP levels of 133/76 mm Hg, compared with 140/81 mm Hg) provided greater vascular protection than standard regimens)

- The net absolute benefits of intensive BP lowering in high-risk individuals are large

According to your experience, do you think that the SPRINT results should be generalized to patients with hypertension and diabetes?

A. Yes
B. No
C. Still too early to decide
D. I do not know

SPRINT v. ACCORD

"In the meantime, **guideline committees** and the **medical community** will have to decide whether the SPRINT results should be generalized to patients with hypertension and diabetes

- Even the more **conservative 140/90 mm Hg threshold** leaves half to a third of hypertensive uncontrolled and many clinicians and patients are "reluctant to go beyond two different antihypertensive drugs" to the average of three averaged in SPRINT

In a 50 year oldpatient with **uncomplicated HTN,** which of the followings is considered a first-line therapy**?**

A. Diuretics
B. CCB s
C. ACE inhibitors/ARBs
D. Beta Blockers
E. Any of the above

Hypertension guidelines

Dose dependence of BP lowering drug efficacy

354 randomised double blind placebo controlled trials with

40 000 treated patients and 16 000 patients given placebo

	Fall in BP (mm Hg)	
	Standard dose	Twice standard dose
Systolic BP		
Thiazides	8.8	10.3
β blockers	9.2	11.1
ACE inhibitors	8.5	10.0
Angiotensin II receptor antagonists	10.3	12.3
CCB	8.8	11.7
All categories: average	**9.1**	**10.9**
Diastolic BP		
Thiazides	4.4	5.0
β blockers	6.7	7.8
ACE inhibitors	4.7	5.7
Angiotensin II receptor antagonists	5.7	6.5
CCB	5.9	7.9
All categories: average	**5.5**	**6.5**

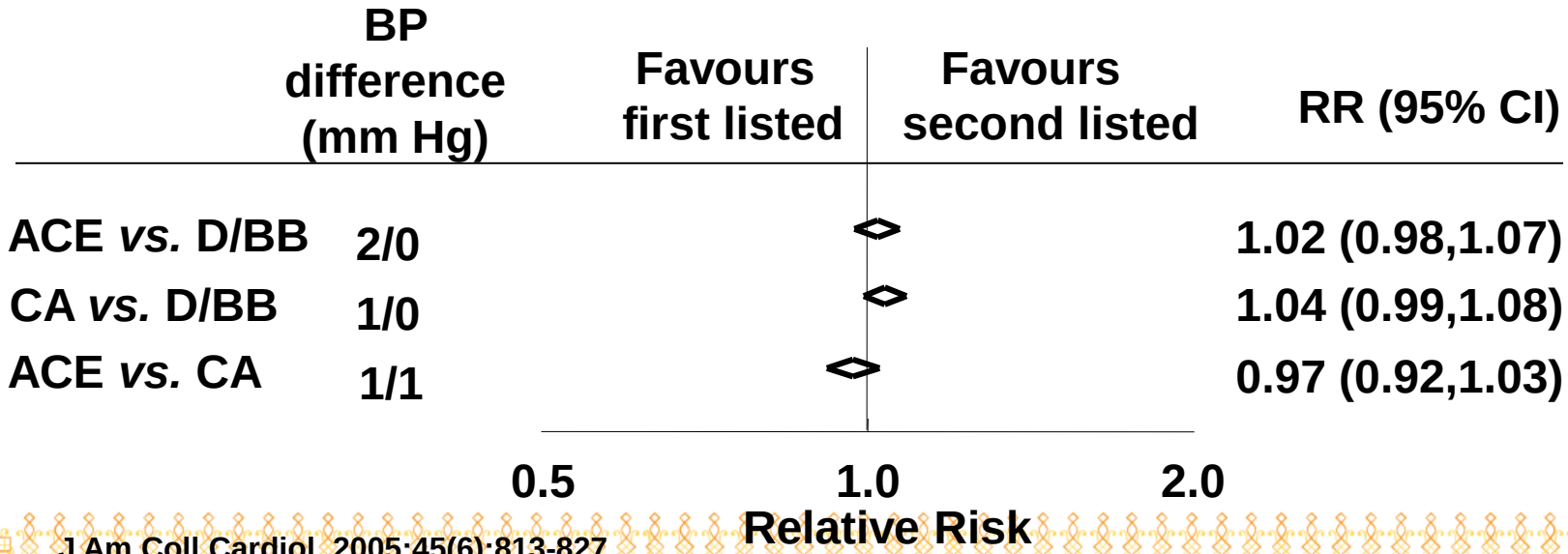
Law et al., BMJ 326: 1427, 2003

Systematic overview by

Blood Pressure Lowering Treatment Trialists' Collaboration

Major CV Events

Comparisons of different active treatments



J Am Coll Cardiol. 2005;45(6):813-827.

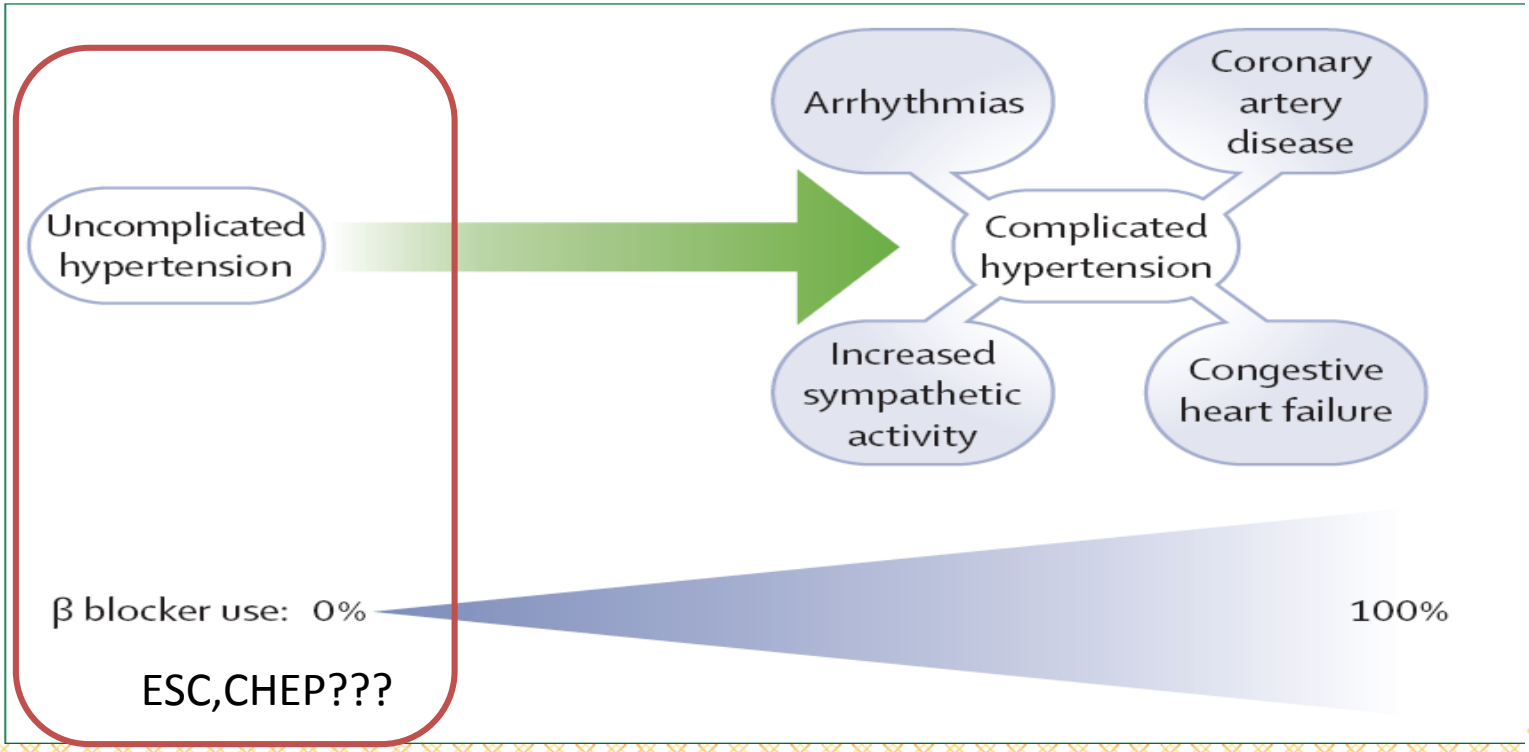
What do Current guidelines say?

First-line therapy according to Guidelines

	JNC-7	JNC-8	ASH/ISH	ESC/ESH	CHEP
Non-black (no DM or CKD)	**Thiazide** **D**	Thiazide, ACEI, ARB, CCB **D, A,C**	**<60**: ACEI,ARB **>60**:CCB, thiazide **A ,C,D**	Thiazide, ACEI, ARB, CCB, BB **D,A,C, B**	Thiazide, ACEI, ARB (BB if <60) **D,A, B**
Black (no DM or CKD)	**Thiazide** **D**	Thiazide, CCB **D, C**	Thiazide, CCB **D, C**	Thiazide, ACEI, ARB, CCB, BB **D,A,C ,B**	Thiazide, ARB (BB if <60) **D,A, B**
Diabetes	**ACEI, ARB, CCB, BB, thiazide** **A,C,B,D**	CCB, thiazide **C,D**	ACEI, ARB, CCB, thiazide **A,C,D**	ACEI, ARB **A**	ACEI, ARB, CCB, thiazide **A,C,D**
CKD	**ACEI, ARB** **A**	ACEI, ARB **A**	ACEI, ARB **A**	ACEI, ARB **A**	ACEI, ARB **A**

Salvo M et al. *Ann Pharmacother* 2014;48:1242-8.

B-Blockers in Hypertension



Lancet 2007;370:591-603

<u>There is no uniform agreement</u> between the guidelines for:

- BP target
- antihypertensive drugs should be given for initial therapy

Current Hypertension guidelines
clarity vs confusion

Medical/ lay press that has been surrounding these hypertension guidelines:

- "Hypertension guidelines – clear as mud."
  The Heart.org 2014

- "The multitude of guidelines from respected professional bodies have caused needless confusion bordering on chaos."
  Editorial, J Clin Hypertens 2014; 16:251

- **Time** magazine has an article 2014, "Why Doctors Are Fighting Over Blood Pressure Guidelines."

The definition of a guideline

- It is a rule, instruction or a set of standards that tells how something should be done

As a clinician, the ideal guidelines for me, would be the one:

- Written by experts
- Unbiased
- Science “evidence based”
- Easy to understand
- **Easy to use**
- A guide not a law
- By definition, following a guideline is never mandatory.

The final thing -what do we need from guidelines?

- There should be regular updates to guidelines.
  - Preferably annually or even within 3 to 6 months of significant randomized controlled trial release.
- There should be agreement between societies.
- There should be incremental changes when possible. ..not a dramatic shift
- There should be a vetting of these changes before and after guidelines

The final thing -what do we need from guidelines?

We don't need guidelines for guidelines

Thank You