The Patient with Asymptomatic Elevated Blood Pressure

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Disclosure

I have no financial interests or relationships to disclose.

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Learning Objectives

1) Appreciate the difference between Hypertensive Emergency and asymptomatic elevated BP
2) Understand why the AHA has abandoned the diagnosis: "hypertensive urgency"
3) Discontinue the practice of utilizing IV antihypertensives for asymptomatic elevated BP
4) Instill confidence in "watchful waiting" approach to the patient presenting with acutely asymptomatic blood pressure elevation
5) Redirect efforts on efforts improving out-patient blood pressure control (instead of referral to the hospital)

3

How Common? Very

A. 2012: 1.04 million ED visits with HTN as 1° dx[1]

- with 23% hospitalization rate
- Pts with hx of HTN ➔ 6/1000 ED visits

B. Inpatient: Systematic review 9 studies ➔

asymptomatic elevated BP occurs in 50-72% pts[2]

[1]Singh JA, et al. BMC Health Serv Res 2016; 16:1-11
[2]Axon RN, et al. J Hosp Med 2011; 6: 417-422.

4

Elevated Blood Pressure in the ED/UC/Office

Hypertensive "Emergency"
or
Asymptomatic BP elevation

What happened to "hypertensive urgency"?

Hypertensive Emergency

- Aortic Dissection
- SCAPE
- Hypertensive Encephalopathy
- Acute Coronary Syndrome
- Eclampsia
- Acute Renal Failure
- Stroke

IV meds needed

References: AHA Guideline, published ahead of print, May 28, 2024

5

When Did This Happen?

AHA SCIENTIFIC STATEMENT

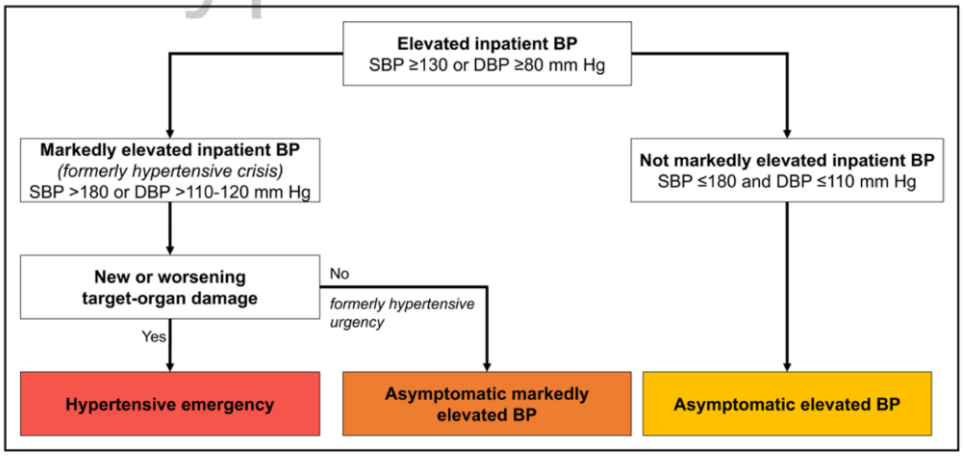
The Management of Elevated Blood Pressure in the Acute Care Setting: A Scientific Statement From the American Heart Association

Adam P. Bress, PharmD, MS, Chair; Timothy S. Anderson, MD, MAS; John M. Flack, MD, MPH, FAHA; Lama Ghazi, MD, PhD; Michael E. Hall, MD, MS, FAHA; Cheryl L. Laffer, MD, PhD; Carolyn H. Still, PhD; Sandra J. Taler, MD, FAHA; Kori S. Zachrison, MD, MSc, FAHA; Tara I. Chang, MD, MS, Vice Chair; on behalf of the American Heart Association Council on Hypertension; Council on Cardiovascular and Stroke Nursing; and Council on Clinical Cardiology

Hypertension; published ahead of print, May 28, 2024

6

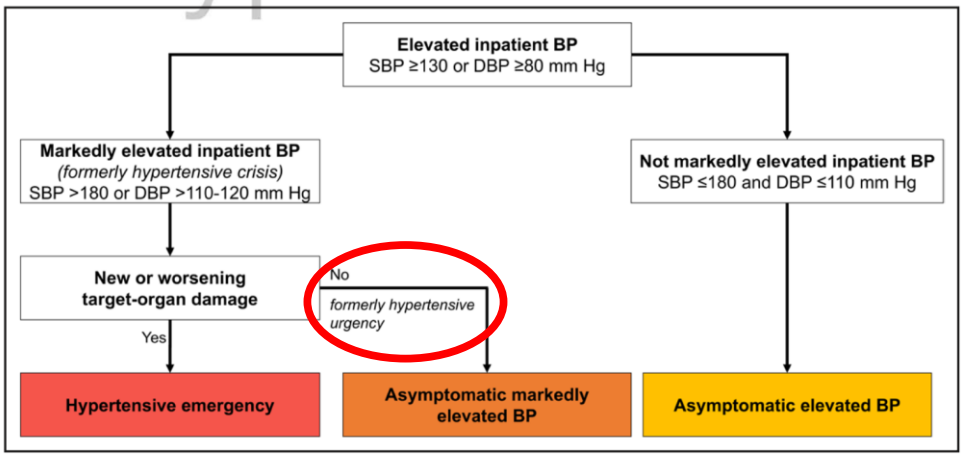
Elevated Blood Pressure in the ED/UC/Office



AHA Scientific Statement
Hypertension; published ahead of print, May 28, 2024

7

Elevated Blood Pressure in the ED/UC/Office



"…. the use of subjective emotive language such as crisis and urgency, may encourage unnecessary antihypertensive treatment."

8

When Did This Happen?

"…..an historical term of no clinical value" *Rosen's textbook, 2010*

"…the term "urgency" has led to overly aggressive management of many patients with severe, uncomplicated HTN. Aggressive dosing with IV or even oral agents … is not without risk" *JNC 7*

2019 ESC recommends abandoning term "Hypertensive Urgency"

9

Q1: The AHA Would Define Her Condition as:

A. Hypertensive emergency
B. Hypertensive urgency
C. Asymptomatic markedly elevated BP > 180/110
D. Asymptomatic elevated BP - BP < 180/110

Vitals: BP: 175/105, P=80, RR=16, afebrile, BMI= 90
- DJD of knees, trace ankle edema bilaterally

10

Q1: The AHA Would Define Her Condition as:

A. Hypertensive emergency → ???

~~B. Hypertensive urgency~~

C. Asymptomatic markedly elevated BP > 180/110

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Vitals: BP: 175/105, P=80, RR=16, afebrile, BMI= 90
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11

The Evaluation…. A Good H&P, Then

Table 1. Hypertensive Emergencies by Organ and Initial Treatment Approach "BARKH"

	Organ				
	Brain	**Arteries**	**Retina**	**Kidney**	**Heart**
Acute conditions indicating hypertensive emergency	Stroke Hypertensive encephalopathy (PRES) Cerebral hemorrhage	Acute aortic dissection Preeclampsia, HELLP, eclampsia	Grade III–IV Keith-Wagener-Barker hypertensive retinopathy	Acute kidney injury Thrombotic microangiopathy	Acute heart failure Pulmonary edema Acute coronary syndrome

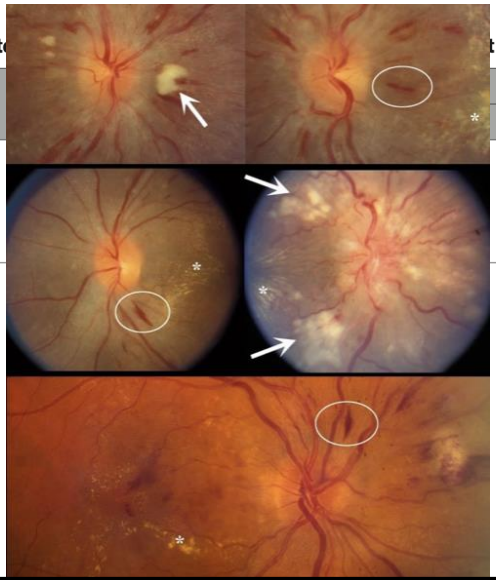
AHA Scientific Statement
Hypertension; published ahead of print, May 28, 2024

12

The Evaluation…. A Good H&P, Then

Table 1. Hyperte … **t Approach** **"BARKH"**

		Retina	Kidney	Heart
Acute conditions indicating hypertensive emergency		Grade III–IV Keith-Wagener-Barker hypertensive retinopathy	Acute kidney injury Thrombotic microangiopathy	Acute heart failure Pulmonary edema Acute coronary syndrome



Grade III retinopathy: cotton wool spots (arrows), and hemorrhages (ellipses).
Grade IV: grade III retinopathy +papilledema (eg, the middle right panel).

Henderson A, et al. West J Emerg Med 2012; 13:529-34

13

The Evaluation…. A Good H&P, Then

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????Orders: Head CT, CBC, CMP, troponin, BNP, EKG

"Be a sniper, don't use a shotgun"

14

The Evaluation…. A Good H&P, Then

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CRITICAL QUESTIONS

1. In ED patients with asymptomatic elevated blood pressure, does screening for target organ injury reduce rates of adverse outcomes?

Patient Management Recommendations

Level A recommendations. None specified.
Level B recommendations. None specified.
Level C recommendations. (1) In ED patients with asymptomatic markedly elevated blood pressure, routine screening for acute target organ injury (eg, serum creatinine, urinalysis, ECG) is not required.

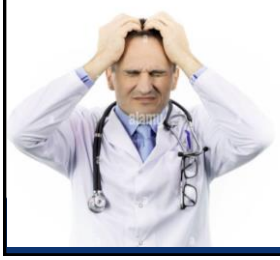
ACEP Clinical Policy, Ann Emerg Med 2013

15

Elevated Blood Pressure in the ED

Hypertensive Emergency
or
Asymptomatic BP elevation

But the patient has a headache ???



Hypertensive Emergency

- Aortic Dissection
- ~~SCAPE~~
- Hypertensive Encephalopathy
- ~~Acute Coronary~~ Syndrome
- Eclampsia
- Acute Renal Failure
- Stroke

IV meds needed

16

Hypertensive Encephalopathy

Defined as: decreased alertness, impaired cognitive function, delirium, and in some cases, generalized seizures or cortical blindness, unexplained by other disease and reversible with blood pressure lowering

Critical Care Nephrology (Second Edition), 2009

Note: symptoms typically develop over a period of several days.

Pathophysiology: due to a sudden, sustained rise in blood pressure, sufficient to exceed the upper limit of cerebral blood flow autoregulation➔ **brain edema**

Epistaxis, proteinuria, and headache (in isolation) do **not** qualify as target organ damage

EMCrit, 2023

17

Does Elevated BP Result in a Headache?

Headache in patients with mild to moderate hypertension is generally not associated with simultaneous blood pressure elevation

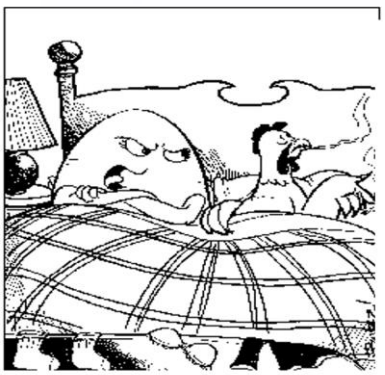
Piotr Kruszewski, Leszek Bieniaszewski, Jolanta Neubauer and Barbara Krupa-Wojciechowska

Methods: 150pts with HTN, Placed on ABPM

Results **Headaches were generally not directly associated with blood pressure elevations in the studied group of stage 1–2 hypertensive patients because (i) blood pressure values from headache periods were not significantly higher than those from headache-free periods; (ii) blood pressure values directly preceding the pain were not significantly different from values at the beginning of headache; and (iii) in the vast majority of hypertensives, their maximal blood pressure values were recorded during headache-free periods. Moreover, in some**

References: Journal of Hypertension 2000, Vol 18 No 4

Is headache the cause of the elevated BP or symptom (of elevated BP)?



Well, I guess THIS answers "the age-old question"

18

Elevated Blood Pressure in the ED

~~Hypertensive Emergency~~

or

Asymptomatic BP elevation

Aggressive dosing with IV or even oral agents … is not without risk" JNC7

Hypertensive Emergency

- Aortic Dissection
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- Stroke

IV meds needed

19

What Can Happen If You Aggressively Treat the BP?

Teachable Moment | LESS IS MORE

Overtreatment of Asymptomatic Hypertension—Urgency Is Not an Emergency
A Teachable Moment

Jeong Yun Yang, BA; Sophia Chiu, MS; Mona Krouss, MD

Case: 77 yo with HTN and acute exacerbation chronic pancreatitis - epigastric pain, BP = 247/118. Hydralazine 20mg IV =➔

Result: ==> BP 90/54.. Dizzy, nausea and vomiting … Acute AKI and 2 additional days of hospitalization

JAMA Internal Medicine May 2018 Volume 178 (5): 704-5

20

What Can Happen If You Aggressively Treat the BP?

JAMA Internal Medicine | Original Investigation | LESS IS MORE

Treatment and Outcomes of Inpatient Hypertension Among Adults With Noncardiac Admissions

Radhika Rastogi, MD, MPH; Megan M. Sheehan, BS; Bo Hu, PhD; Victoria Shaker, BA; Lisa Kojima, BSE; Michael B. Rothberg, MD, MPH

Methods: retrospective cohort study, 22,834 in-pt medicine service Cleveland Clinic, 2017

Results: 17,821 (78%) had ≥ 1 reading > 140sys; ***33% received a new treatment!!!*** ***(3/4 oral med, ¼ IV med)***

Propensity matching:	no treatment (n=4520)	vs.	(+) treatment (n=4520)	
AKI:	**357 (7.9%)**		**466 (10.3%)**	*p< 0.001*
AMI:	**26 (0.6%)**		**53 (1.2%)**	*p= 0.003*

JAMA Intern Med. 2021;181(3):345-352

21

What Can Happen If You Aggressively Treat the BP?

Methods: multi-hospital retrospective cohort study, 224,265 hospital floor pts

Results: 20,383 (9%) had > **BPsys 180/110**

1,059 (+) IV meds vs. **3,120 (+) oral med.** vs. **16,204 no meds**

TABLE 2. Inpatient outcomes for treated versus untreated patients by treatment route hazard ratio (HR) calculated while accounting for overlap propensity weights

	Events in treated	Events in untreated	Unweighted crude HR [95% CI]	Overlap propensity weighted HR [95% CI]
Myocardial Injury				
i.v. versus no treatment	62 (5.9%)	591 (3.6%)	1.63 [1.25, 2.11]	1.52 [1.08, 2.14]
Stroke				
i.v. versus no treatment	7 (0.7%)	107 (0.7%)	1.00 [0.47, 2.15]	0.70 [0.30, 1.62]
Acute kidney injury				
i.v. versus no treatment	245 (23.1%)	2876 (17.7%)	1.06 [0.93, 1.21]	0.97 [0.81, 1.17]
Death				
i.v. versus no treatment	28 (2.6%)	208 (1.3%)	1.08 [0.72, 1.60]	0.86 [0.49, 1.51]

Ghazi L, et al. J Hypertension 2023; 41: 288-94

22

What Can Happen If You Aggressively Treat the BP?

JAMA Internal Medicine | Original Investigation | LESS IS MORE

Clinical Outcomes of Intensive Inpatient Blood Pressure Management in Hospitalized Older Adults

Methods: retrospective cohort study

- From VA database, admissions 2013-18
- Age > 65 admitted + **BP >180 in first 48 hrs** (excluded Hypertensive emergency, CV dz)

Results:

	Intensive Rx (n= 14,084). ***(IV BP med* or new oral med)***	vs. No intensive Rx (n= 52,076)
Composite Outcome: *Death, ICU admit, Acute kidney injury Elevated troponin or BNP*	**8.7%**	**6.9%** (Odds Ratio: 1.28) *(95% CI:1.18-1.39)*

*Note: Use of IV antihypertensive was associated with even greater risk (OR 1.9; 95%CI 1.65-2.19)

Anderson TS, et al. JAMA Intern Med, published online May 30, 2023

23

Why Am I Emphasizing This?

Methods: survey of FM an IM residents' attitudes about Blood pressure management in hospitalized patients

Result: At BPsys > 160 mm Hg, med changes would be made by: 63% of FM residents and 57% of IM residents

Axon RN, et al. J Clin Hypertension 2010; 12: 698-705

24

Should I Send This Patient to the ER?

Methods: 59,836 office pts with BP > 180/110
- retrospective cohort study, 58,109 sent home, 426 sent to ER (0.7%)

Table 2. Unadjusted Outcomes of Patients With Hypertensive Urgency

Outcome	No. (%) of Patients		P Value[b]
	Referred to Hospital (n = 426)[a]	Sent Home (n = 58 109)	
MACE[c]			
7 d	2 (0.5)	61 (0.1)	.02
8-30 d	2 (0.5)	119 (0.2)	.23
1-6 mo	4 (0.9)	492 (0.8)	.83

Table 3. Outcomes of Asymptomatic Patients in Propensity-Matched Comparison

Outcome	No. (%) of Patients		P Value[c]
	Referred to Hospital (n = 426)[a]	Sent Home (n = 852)[b]	
MACE[d]			
7 d	2 (0.5)	0	.11[e]
8-30 d	2 (0.5)	0	.11[e]
1-6 mo	4 (0.9)	8 (0.9)	>.99

Patel KK, et al. JAMA Intern Med. 2016;176(7):981-988.

25

Guidelines That Back You Up!!!!

Table. Guideline-Directed Treatments of Hypertensive Urgency and Hypertensive Emergency[1,5]

Treatment Guideline	Hypertensive Urgency	Hypertensive Emergency
2013 ACEP	Reduce blood pressure and/or initiate therapy for long-term control; refer for outpatient follow-up.	None
2013 ESH/ESC Arterial Hypertension	Reinstitute or intensify existing antihypertensive regimen.	Reduce blood pressure by <25% within 1 hour; use IV and oral drugs recommended for malignant hypertension.
2017 ACC/AHA	No indication for immediate reduction of blood pressure in emergency department or hospitalization.	In hour 1, reduce systolic blood pressure by ≤25%; for the next 2 to 6 hours, target 160/100 mm Hg; and for the next 24 to 48 hours, cautiously reduce blood pressure to normal.

JAMA Internal Medicine May 2018 Volume 178 (5): 704-5

26

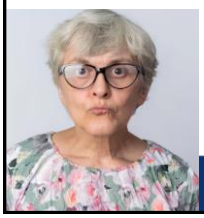
Elevated Blood Pressure in the ED/UC/Office

~~Hypertensive Emergency~~

or

Asymptomatic BP elevation

po meds?



Before the Meds.....

#1

Repeat BP with proper technique
- ***Correct cuff size***
- ***Sitting up***
- ***Both feet on ground***
- ***Back supported***
- ***Support the arm***
- ***No talking***
- ***No crossed legs***

AHA Scientific Statement, 2019

27

Table 2. Key Points in Selecting Cuff Sizes for BP Measurement

Arm circumference should be measured at the midpoint of the acromion and olecranon.
BP cuff bladder length should be 75%–100% of the patient's measured arm circumference.
BP cuff bladder width should be at 37%–50% of the patient's arm circumference (a length-to-width ratio of 2:1)
BP cuff should be placed on bare skin.
Shirtsleeves should not be rolled up because this may create a tourniquet effect.
The most frequent error in measuring office BP is "miscuffing," with undercuffing large arms accounting for 84% of the miscuffings.[18,19]
There is variation in the BP cuff bladder length for adult and large adult cuffs (ie, the bladder size for large cuff may differ between manufacturers).
Individual cuffs should be labeled with the ranges of arm circumferences; lines should be added that show whether the cuff size is appropriate when it is wrapped around the arm.
Information on cuff selection for patients with morbid obesity is provided in the Obese Patients section.

Blood Pressure Measurement

Before the Meds.....

#1

Repeat BP with proper technique
- ***Correct cuff size***
- ***Sitting up***
- ***Both feet on ground***
- ***Back supported***
- ***Support the arm***
- ***No talking***

AHA Scientific Statement, 2019.

28

How Much Error Does "Miscuffing" Result in?

- **Methods:** RCT, volunteers
  n= 35 small cuff (20-25cm)
  n= 54 reg cuff (25-32cm)
  n= 65 large cuff (32-40cm)
  n = 40 extra large cuff (40-55cm)

JAMA Internal Medicine | Original Investigation
Effects of Cuff Size on the Accuracy of Blood Pressure Readings
The Cuff(SZ) Randomized Crossover Trial
Junichi Ishigami, MD, MPH; Jeanne Charleston, RN; Edgar R. Miller III, MD, PhD; Kunihiro Matsushita, MD, PhD; Lawrence J. Appel, MD, MPH; Tammy M. Brady, MD, PhD
Published online August 7, 2023

- **Results:**
  - When cuff one size **too large** used➔ lower SBP (mean 3.6mmHg)
    - Example: regular cuff on small patient
  - When cuff **one size too small** used➔ higher SBP (mean 4.8mmHg)
  - When cuff **2 sizes too small** used =➔ higher SBP (mean 19.5mmHg)
    - Example: regular cuff on extra large patient

29

Key Steps for Proper BP Measurements	Specific Instructions
Step 1: Properly prepare the patient	1. Have the patient relax, sitting in a chair with feet flat on floor and back supported. The patient should be seated for 3–5 min without talking or moving around before recording the first BP reading. A shorter wait period is used for some AOBP devices.
	2. The patient should avoid caffeine, exercise, and smoking for at least 30 min before measurement.
	3. Ensure that the patient has emptied his/her bladder.
	4. Neither the patient nor the observer should talk during the rest period or during the measurement.
	5. Remove clothing covering the location of cuff placement.
	6. Measurements made while the patient is sitting on an examining table do not fulfill these criteria.
Step 2: Use proper technique for BP measurements	1. Use an upper-arm cuff BP measurement device that has been validated, and ensure that the device is calibrated periodically.
	2. Support the patient's arm (eg, resting on a desk). The patient should not be holding his/her arm because isometric exercise will affect the BP levels.
	3. Position the middle of the cuff on the patient's upper arm at the level of the right atrium (midpoint of the sternum).
	4. Use the correct cuff size such that the bladder encircles 75%–100% of the arm.
	5. Use either the stethoscope diaphragm or bell for auscultatory readings.

AHA Scientific Statement, 2019.

30

Table 4. Body Position and BP Measurement

SBP has been reported to be 3–10 mm Hg higher in the supine than the seated position.[20]
DBP is ≈1–5 mm Hg higher when measured supine vs seated.[20]
In the supine position, if the arm is resting on the bed, it will be below heart level.
When BP measurements are taken in the supine position, the cuffed arm should be supported with a pillow.
In the seated position, the right atrium level is the midpoint of the sternum or the fourth intercostal space.
If a patient's back is not supported (eg, the patient is seated on an examination table), SBP and DBP may be increased by 5–15 and 6 mm Hg, respectively.[21]
Having legs that are crossed during BP measurement may raise SBP by 5–8 mm Hg and DBP by 3–5 mm Hg.[22]
If the upper arm is below the level of the right atrium (eg, when the arm is hanging down while in the seated position), the readings will be too high.
The cuffed arm should be held up by the observer or resting on a table at heart level. If the arm is held up by the patient, BP will be raised.

Blood Pressure Measurement

Before the Meds……..

#1

Repeat BP with proper technique
- ***Correct cuff size***
- ***Sitting up***
- ***Both feet on ground***
- ***Back supported***
- ***Support the arm***
- ***No talking***
- ***No crossed legs***

AHA Scientific Statement, 2019.

31

Elevated Blood Pressure in the ED/UC/Office

Hypertensive emergency

or

Asymptomatic BP elevation

⇩

po meds?

Before the Meds……..

#1

Repeat BP with proper technique

B. Check the patient's history…
- ***Medication compliance?***
- ***painful condition?***
- ***alcohol use (or discontinue)***
- ***cocaine, stimulants***
- ***Other Meds: Antidepressants,***
  - ***NSAID's, ADHD***

32

Elevated Blood Pressure in the ED/UC/Office

Table 1. Prevalence of Use of Medications That May Raise Blood Pressure (BP) Among US Adults, 2009-2018

	Survey participants, % (95% CI)		
		Adults with	
	US adult population	Hypertension[a]	Uncontrolled hypertension[b]
Unweighted No.	27 599	14 629	10 696
Weighted No.	225 284 279	111 056 498	79 921 633
Use of medications that may raise BP			
Any	14.8 (13.9-15.8)	18.5 (17.5-19.5)	17.4 (16.3-18.5)
1	12.3 (11.7-12.9)	14.9 (14.1-15.8)	14.1 (13.1-15.1)
≥2	2.5 (2.2-2.9)	3.6 (3.1-4.1)	3.3 (2.7-3.8)
Use of classes of medications that may raise BP			
Antidepressants	6.7 (6.2-7.3)	8.7 (8.0-9.5)	7.9 (7.0-8.8)
NSAIDs	4.9 (4.4-5.3)	6.5 (5.8-7.2)	6.2 (5.4-6.9)
Steroids	1.4 (1.2-1.6)	1.9 (1.6-2.1)	1.7 (1.4-2.0)
Estrogens	1.4 (1.2-1.6)	1.7 (1.4-2.0)	1.6 (1.3-1.9)
Stimulants	1.1 (0.9-1.4)	0.9 (0.6-1.1)	1.0 (0.7-1.4)
Testosterones	0.4 (0.2-0.5)	0.4 (0.2-0.6)	0.4 (0.2-0.6)
Antiobesity agents	0.2 (0.1-0.3)	0.2 (0.1-0.3)	0.1 (0.1-0.3)
Decongestants	0.2 (0.1-0.4)	0.4 (0.2-0.6)	0.4 (0.1-0.7)
Antipsychotics	0.1 (0.1-0.2)	0.2 (0.1-0.3)	0.2 (0.1-0.4)
Immunosuppressants	0.1 (0.0-0.1)	0.2 (0.1-0.3)	0.2 (0.1-0.3)
α Agonists	<0.01	0.0 (0.0-0.0)	0.0 (0.0-0.0)
Antirheumatics	<0.01	0.1 (0.0-0.1)	0.1 (0.0-0.1)
Use of antihypertensives			
1	13.2 (12.5-13.9)	23.3 (22.2-24.4)	19.8 (18.8-20.9)
2	8.9 (8.3-9.4)	17.0 (16.0-18.0)	13.0 (12.1-14.0)
>3	4.9 (4.5-5.3)	9.8 (9.1-10.6)	7.9 (7.2-8.6)

Before the Meds.....
#1, 2

Repeat BP with proper technique

B. Check the patient's history...
- Medication compliance?
- painful condition?
- alcohol use (or discontinue)
- cocaine, stimulants
- Other Meds: Antidepressants,
- NSAID's, ADHD

Viarello JA, et al JAMA Intern Med 2022; 182: 90-93

33

Elevated Blood Pressure in the ED/UC/Office

Hypertensive Emergency
or
Asymptomatic BP elevation

po meds?

Before the Meds.....
#1,2,3

A. Repeat BP with proper technique

B. Check the patient's history...

C. "Don't just do something, stand there"

34

Elevated Blood Pressure in the ED/UC/Office

Hypertensive Urgencies in the Emergency Department: Evaluating Blood Pressure Response to Rest and to Antihypertensive Drugs With Different Profiles

Daniel Grassi, MD;[1] Martin O'Flaherty, MD;[1] Marcelo Pellizzari, MD;[1] Mario Bendersky, MD;[2] Pablo Rodriguez, MD;[2] Domingo Turri, MD;[3] Pedro Forcada, MD;[4] Keith C. Ferdinand, MD;[5] Carol Kollar, MD;[4] on behalf of the Group of Investigators of the REHASE Program[6]

Before the Meds.....
#1,2,3

@ 30min rest ➔ 32% BP sys ↓ > 20mmHg
and/or
BP dia ↓ > 10mmHg

C. "Don't just do something, stand there"

[1]J Clin Hypertension 2008, 10: 662-66.

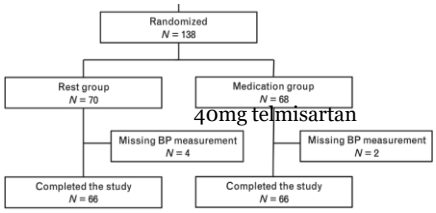
35

Elevated Blood Pressure in the ED/UC/Office

Comparing the clinical efficacy of resting and antihypertensive medication in patients of hypertensive urgency: a randomized, control trial

Sung Keun Park[a], Dong-Young Lee[b], Won Joong Kim[b], Sang Yoon Lee[c], Hyun Sun Park[b], Hae Won Kim[b], Beom Kim[b], and Kyoung Hyoub Moon[b]

Before the Meds.....
#1,2,3



2-hr

40mg telmisartan

C. "Don't just do something, stand there"

10- 35% MBP ➔ reduction **68%** **69%**

References: Journal of Hypertension 2017, 35:1474–1480

36

Elevated Blood Pressure in the ED/UC/Office

~~Hypertensive Emergency~~

or

Asymptomatic BP elevation

If you have to give meds…

Option #1:
additional dose of current med

po meds please

37

Elevated Blood Pressure in the ED/UC/Office

~~Hypertensive Emergency~~

or

Asymptomatic BP elevation

If you have to give meds…

Option #1:
additional dose of current med

po meds please

Option #2:

Short acting meds???
Clonidine, labetalol, captopril, nifedipine

38

Elevated Blood Pressure in the ED/UC/Office

~~Hypertensive Emergency~~

or

Asymptomatic BP elevation

po meds please

If you have to give meds…

Option #1:
additional dose of current med

Option #2:

Short acting meds???
Clonidine, labetalol, captopril, nifedipine
hydralazine

All have been been implicated in treatment adverse events

39

Elevated Blood Pressure in the ED/UC/Office

~~Hypertensive Emergency~~

or

Asymptomatic BP elevation

po meds please

If you have to give meds…

Option #1:
additional dose of current med

A better Option #2:

Long-acting med
Amlodipine, chlorthalidone

40

Elevated Blood Pressure in the ED

Hypertensive Emergency
or
Asymptomatic BP elevation

po meds please

IV meds needed

Exceptions?

- Previous Hypertensive intracranial bleed/aneurysm
- Known aortic dissection (Type 2)
- markedly enlarged aortic aneurysm (> 5cm)

41

Discharge Time.....
Patient A: on Antihypertensive

Options:

1. No change in meds, follow up PCP
   (*particularly in case of trigger: pain, stress, NSAID's...)*
2. Discuss with PCP (if available)
3. Discuss with patient ? Increase amlodipine or close F/U

42

Discharge Time.....
Patient B: on NO Meds

Option: if no particular trigger (*pain, stress, NSAID's...)*

1. Discuss with PCP (if available)
2. No PCP.....

43

Discharge Time.....
Patient B: on NO Meds

Option: if no particular trigger (*pain, stress, NSAID's...)*

1. Discuss with PCP (if available)
2. No PCP.....

(2) In select patient populations (eg, poor follow-up), emergency physicians may treat markedly elevated blood pressure in the ED and/or initiate therapy for long-term control. [Consensus recommendation]

ACEP Clinical Policy, Ann Emerg Med 2013

44

Discharge time…..
Patient B: on NO Meds

Option: if no particular trigger (*pain, stress, NSAID's…)*

1. Discuss with PCP (if available)

2. No PCP…..

"…initiating antihypertensive treatment in the ED can help address health care disparities, particularly in disenfranchised groups who tend to experience poorer BP control and disproportionate rates of severe CV consequences, often lack primary care, and are more likely to present to the ED for care."

AHA Scientific Statement 2024

45

Discharge Time…..
Patient B: on NO Meds
…Starting Meds Is a Good Thing

Methods: ED pts at d/c with dx: HTN
8 hospital system in Michigan
-Compared those with Rx vs no Rx

ORIGINAL RESEARCH
Cardiology

Antihypertensive prescription is associated with improved 30-day outcomes for discharged hypertensive emergency department patients

Todd BR, et al. JACEP Open 2024; 5: e13138

Results: @ 30 days	+ Rx (n=4435)	No Rx (n =89,077)
*severe adverse events (AMI, CVA, encephalopathy, aorta)	9 **(0.2%)**	651 **(0.7%)**
	OR: 0.22 (0.11-0.42); p< .001	
** ED revisit	443 (10.0%)	13,765 (15.5%)

46

Take Home....

- **Decide if Emergency vs. Asymptomatic elevated BP**
- **Abandon the diagnosis: "hypertensive Urgency"**
- **Do NOT start IV meds for asymptomatic elevated BP**
- **Work with....*"Just don't do something, stand there"***
- **In asymptomatic hypertensive urgency, efforts should focus on improving out-patient blood pressure control (instead of referral to the hospital)**

47

"Doctor, My Blood Pressure Is Up"

- 74 yo female in office/UC/ED with CC: elevated BP
  - Home BP cuff 185/105
  - Mild frontal headache *("I have had this before")*
  - No stroke symptoms, CP, SOB, visual change
- PMHx: HTN, Type 2 DM, hypercholesterolemia, OA
  - amlodipine 5mg qd, metformin, atorvastatin
- Vitals: BP: 175/105, P=80, RR=16, afebrile, BMI= 90
  - DJD of knees, trace ankle edema bilaterally

ARS #1: The AHA Would Define Her Condition as:

A. Hypertensive emergency
B. Hypertensive urgency
C. Asymptomatic markedly elevated BP
D. Asymptomatic elevated BP