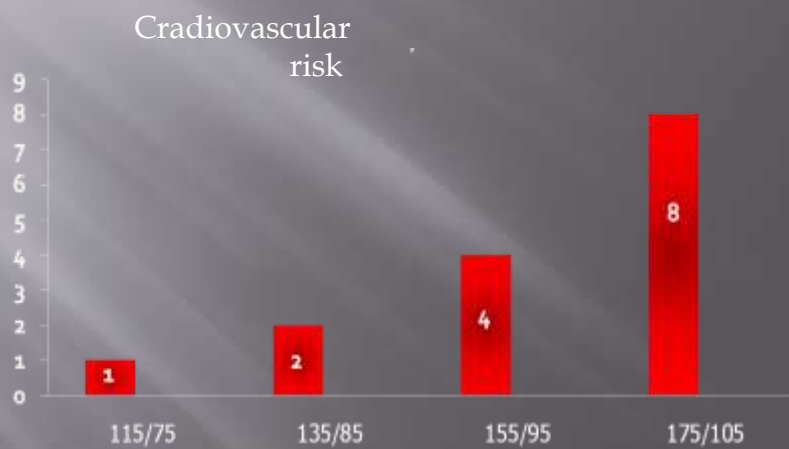


HYPERTENSION MANAGEMENT DURING ACUTE STROKE

MAHMOUD SOLIMAN, MD
Cardio Egypt 2018

3/19/2018

Consequences of poor BP control to goal



Benefits of lowering BP

	Average percent reduction
Stroke incidence	35-40%
Myocardial infarction	20-25%
Heart failure	50%

Blood pressure reduction of 2 mmHg decreases the risk of cardiovascular events by 7-10%

- Meta-analysis of 61 prospective observational studies.
- 1 million adults
- 12.7 million person-years

2 mm Hg ↓ decreases in mean s BP

7% reduction in risk of ischemic heart disease mortality
10% of stroke mortality

During Acute Stroke What is the problem????

1-Hazards during lowering BP □

2-Hazards of leaving high BP □

3-Phenomenon of post stroke hypertension □

Is it harmful to lower BP during acute stroke?

1-Decrease collateral flow to peri infarction ischemic area (penumbra) □

2-Decrease collateral flow to perihematomal ischemic tissue □

Is it harmful to have high BP in acute stroke?

The risk of cerebral edema ·

The risk of Hgic transformation ·

Risk of hematoma expansion in hgix ·
stroke

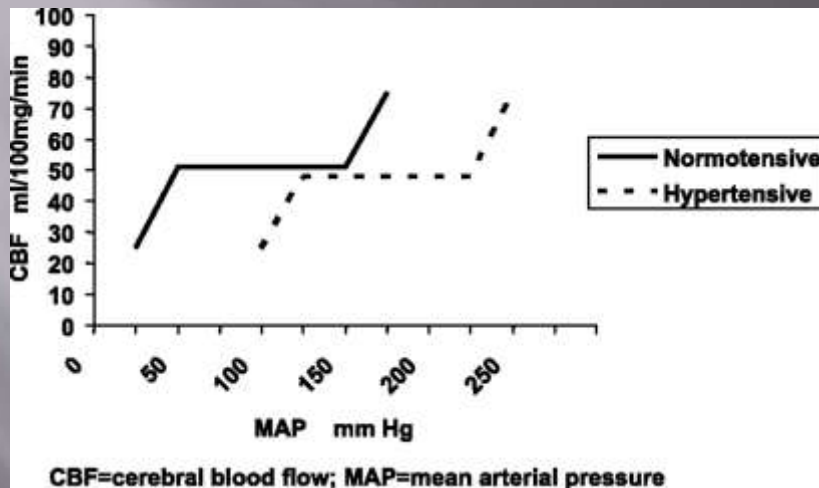
Post stroke hypertension: Why ?

- 70-80% of strokes are accompanied with high BP
- ? Physiological response to autoregulation failure
- ? Damage or compression of autonomic brain centres
- ? Non stroke factors: Stress, headache, urine retention

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Autoregulation maintains cerebral blood flow relatively constant between 50 and 150 mm Hg mean arterial pressure.



Ruland S , and Aiyagari V Hypertension 2007;49:977-978



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SO WHAT TO DO ????????

2018
IS THERE IS NEW ▣
?

AHA/ASA Guideline

2018 Guidelines for the Early Management of Patients With Acute Ischemic Stroke

A Guideline for Healthcare Professionals From the American Heart
Association/American Stroke Association

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VIII. Treatment of Hypertension in Association With Stroke Acute Stroke: Onset to 72 Hours

Acute
ischemic
Stroke

Treat extreme BP elevation (systolic
> 220 mmHg, diastolic > 120 mmHg)
by 15-25% over the first 24 hour
with gradual reduction after.

If eligible for thrombolytic therapy •
treat very high BP (>185/110 mmHg)

Avoid excessive lowering of BP which can exacerbate ischemia

Up to 220/120 just observe except:
Aortic dissection
Acute pulmonary edema
AMI
Hypert.encephalopathy

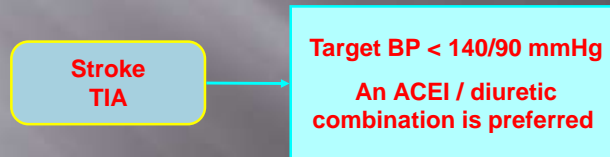
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Treatment of Hypertension in Association With Stroke

Acute Stroke: Onset to 72 Hours

Strongly consider blood pressure reduction in all patients after the acute phase of stroke or TIA .



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BP lowering agents in acute stroke

Labetalol followed by Nicordipine are widely accepted and used whenever drug therapy is needed □

Nitrates could be used occasionally especially with CAD but may increase ICP □

IV Enalapril □

Na nitroprusside is rarely used (BP >240) □

Shift to oral within 24-48 hrs □

ACEI is theoretically the best in normalizing auto-regulation □

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2018 guidelines

3.2. Blood Pressure (Continued)	COR	LOE
2. Patients who have elevated BP and are otherwise eligible for treatment with IV alteplase should have their BP carefully lowered so that their systolic BP is <185 mm Hg and their diastolic BP is <110 mm Hg before IV fibrinolytic therapy is initiated.	I	B-NR

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4.3. Blood Pressure	COR	LOE
1. In patients with AIS, early treatment of hypertension is indicated when required by comorbid conditions (eg, concomitant acute coronary event, acute heart failure, aortic dissection, postthrombolysis sICH, or preeclampsia/eclampsia). Lowering BP initially by 15% is probably safe.	I	C-ED
2. In patients with BP <220/120 mm Hg who did not receive IV alteplase or EVT and do not have a comorbid condition requiring acute antihypertensive treatment, initiating or reinitiating treatment of hypertension within the first 48 to 72 hours after an AIS is not effective to prevent death or dependency.	III: No Benefit	A

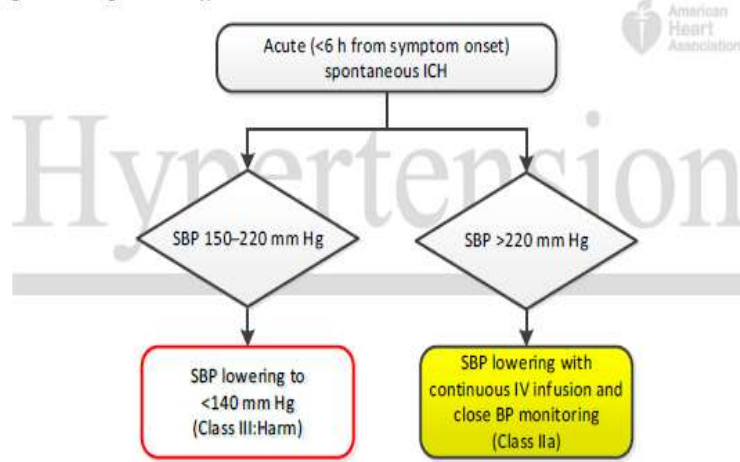
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<p>3. In patients with BP \geq220/120 mm Hg who did not receive IV alteplase or EVT and have no comorbid conditions requiring acute antihypertensive treatment, the benefit of initiating or reinitiating treatment of hypertension within the first 48 to 72 hours is uncertain. It might be reasonable to lower BP by 15% during the first 24 hours after onset of stroke.</p>	IIb	C-E0
<p>4.3. Blood Pressure (Continued)</p>	COR	LOE
<p>5. Starting or restarting antihypertensive therapy during hospitalization in patients with BP $>$140/90 mm Hg who are neurologically stable is safe and is reasonable to improve long-term BP control unless contraindicated.</p>	IIa	B-R
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Acute intracranial hemorrhage

Figure 7. Management of Hypertension in Patients With Acute ICH



Stroke
Is
A catastrophic
Event



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The best
Treatment
is to
Prevent



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BP CATEGORIES

Table 6. Categories of BP in Adults*

BP Category	SBP		DBP
Normal	<120 mm Hg	and	<80 mm Hg
Elevated	120–129 mm Hg	and	<80 mm Hg
Hypertension			
Stage 1	130–139 mm Hg	or	80–89 mm Hg
Stage 2	≥140 mm Hg	or	≥90 mm Hg

Prevalence

	SBP/DBP ≥130/80 mm Hg or Self-Reported Antihypertensive Medication†		SBP/DBP ≥140/90 mm Hg or Self-Reported Antihypertensive Medication‡	
Overall, crude	46%		32%	
	Men (n=4717)	Women (n=4906)	Men (n=4717)	Women (n=4906)
Overall, age-sex adjusted	48%	43%	31%	32%

The prevalence estimates have been rounded to the nearest full percentage.

*130/80 and 140/90 mm Hg in 9623 participants (≥20 years of age) in NHANES 2011–2014.

