

NEW B.P. TARGETS IN PATIENTS WITH HYPERTENSION

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2018

NEW B.P. TARGETS IN PATIENTS WITH HYPERTENSION

- *Aim in reducing B.P, to appropriate levels.*

ADVANTAGES:

1. *Reduce Stroke.*
2. *Reduce M.I.*
3. *Reduce CHF.*
4. *Reduce progression to ESRD.*
5. *Reduce probability of Ao. Dissection.*
6. *Reduce blindness.*
7. *Reduce, prevent TOD.*
8. *Improve QOL.*

CONTROVERSY ARISES:

- * *To which level of systolic B.P. do you aim.*
- * *To which level of systolic B.P. in :*
 - *Different ages.*
 - *With concomitant diseases.*
 - *In different races.*
 - *In pts. with TOD.*

QUESTIONS

In HTN – is the lower the B.P. → The better????

In DM – is the lower the blood sugar – The better? = No

(HbA1C)

In Hypercholesterolaemia

- is the lower TC + LDL – C – The better ? = Yes

NEW B.P. TARGETS IN PATIENTS WITH HYPERTENSION

- I. *What is the direct evidence of lowering B.D. $\leq 130 / 80$ mmHg as regards C.V. outcomes ?*

- II. *Will results prove significant reduction in M.I., stroke, H.F., CV mortality.*

- II. *Is it logic to Rx **all pts.** to one target $< 130/80$ mmHg.
i.e. : *Treating mmHg or global Rx of HTN.**

TARGET B.P. GUIDELINES (mmHg)

	2014	2016	2017 AHA ACC.
<i>General population</i>	<i>140/90</i>	<i>140/90</i>	<i>All $\leq 130/80$ mmHg ? In most adults</i>
<i>D.M.</i>	<i>130/85</i>	<i>140/90</i>	
<i>CKD</i>	<i>125/80</i>	<i>140/90</i>	
<i>Octogenerian</i>	<i>150/90</i>	<i>150/90</i>	

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SPRINT TRIAL:

- *Is highly representative of HTN population.*
- *No. patients : 9361.*
- **HTN : Entry:**
 - * *Systolic B.P. < 132 mmHg* *34%.*
 - * *Systolic B.P. < 133-145 mmHg* *32%*
MnBP 140/78
 - * *Systolic B.P. > 145 mmHg* *34%*
- *PTS : Without D.M., stroke or ↑ CV Risk.*
- *F.U. 3.2 yrs Mn. Stopped prematurely (Aim 5 years).*
- *Enrollment from 2010 – 2013.*
- *102 sites in USA / Porto Rico.*

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- **Aim:**
 - Intensive strategy:**
Target systolic BP 120 – 135 mmHg (4678 pts.)
 - Standard strategy:**
Target systolic B) 135 – 139 mmHg (4683 pts.)
 - **Drugs used :**
 - Thiazide Diuretics.**
 - Loop Diuretics.**
 - Beta blockers.**
 - CSM.**
 - Intensive group: Almost 3 drugs.**
 - Standard group: Almost 2 drugs.**
- *Drugs Free of cost.*

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SPRINT TRIAL

BASELINE CHARACTERISTICS :

- ☐ Age: 80 yrs. MN.
- ☐ BMI: 30 kgm/m².
- ☐ Females: 36% males 64%.
- ☐ White 58%, Black 31%, Non-hispanic Black 11%.
- ☐ SMK: 14%.
- ☐ Creatinine Mn 1.0 mg/dl.
- ☐ Statin 43%.
- ☐ GFR 72 ml/Mn
- ☐ Aspirin 52%.
- ☐ Tcholesterol : 90 mg/dl.
- ☐ Triglycerides : 125 mg/dl.

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* INCLUSION CRITERIA :

- ☐ Age above 50 yrs, No DM, No TIA, Stroke.
- ☐ Evaluated for CV events.

* EXCLUSION CRITERIA :

- ☐ D.M.
- ☐ Stroke.
- ☐ LV EF < 35%
- ☐ 2nd HTN.
- ☐ GFR 20-59 ml/Mn.
- ☐ Poly cystic kidney.
- ☐ Proteinurea.
- ☐ CV Risk. (MI, PCI, CABG Carotid A. Dis. Revascularized PAD, CAD 50% > Stenosis, LVH on Echo, Framingham 10 yrs, Risk > 15%.

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SPRINT TRIAL (Cont.)

1. End-points:

- ☰ **Primary outcome :**
(Death, ACS, HF, Stroke).

- ☰ **Secondary outcome:**
 - ↪ *M.I.*
 - ↪ *A.C.S.*
 - ↪ *Stroke.*
 - ↪ *H. Failure.*
 - ↪ *C.V. Mortality.*

SPRINT TRIAL (Cont.)

Results

- ☰ **Primary outcome :**
Intensive group 5.2% Vs. standard group 6.8%
RRR 25% Sig. $p < 0.001$
B.P. S/D at 1 yr.: Intensive group 121/68 vs
standard group 136/76 mmHg.
- ☰ **Secondary outcome:**
 - ↪ *M.I.: Intensive G. 2.1% vs standard 2.5% N.S.*
 - ↪ *A.C.S.: Intensive G. 0.9% vs standard 0.9% N.S.*
 - ↪ *Stroke: Intensive G. 1.3% vs standard 1.5% N.S.*
 - ↪ *H. Failure: Intensive G. 1.3% vs standard 2.1% Sig.*
38% RRR
 $P < 0.002$
 - ↪ *C.V. Mortality: Intensive G. 3.3% vs standard 4.5%*
RRR 27% sig.

SPRINT TRIAL (Cont.)

☰ Renal outcome :

= No diff. in GFR or New albuminurea (All NS).

☰ Adverse events:

- 1. Hypotension: Int. group 2.4% vs. standard 1.4% sig.
P < 0.001.*
- 2. Syncope: Int. group 2.3% vs standard 1.7% N.S.*
- 3. Bradycardia: Int. group 1.9% vs standard 1.7% N.S.*
- 4. Hypokalemia : Int. group 2.4% vs standard 1.6%
Sig. P < 0.006.*
- 5. Hyponatraemia: Int. group 3.8% vs standard 2.1%
sig. P < 0.001
< 130 mq/L.*

SPRINT TRIAL (Cont.)

☰ Summary :

- 1. Primary outcome: results were significant.
As regards: Collectively (death, M.I., Stroke HF)*
- 2. No. Sig. Reduction in M.I./stroke.*
- 3. Significant reduction in H. Failure/C.V. Mortality.*
- 4. Significant of in Adverse events hypotension,
hypokalemia and hyponatraemia.*
- 5. No chance in renal outcome. (Diuretics)*

ACCORD TRIAL (Cont.)

Results


	<i>Intensive B.P. ↓</i>	<i>Standard B.P. ↓</i>	
1. Total Mortality	150 events	144 events	
2. C.V. Deaths	60 events	58 events	
3. Non Fatal MI	1.1% / yr.	1.2% / yr.	RR 13% NS.
4. Non Fatal Stroke	0.3% / yr.	0.5% / yr.	RR 41% Sig. P < 0.001
5. Non Fatal HF	0.7% / yr.	0.7% / yr.	RR 6% NS.
6. Hypotension	0.7% / yr.	0.04% / yr.	Sig.
7. Hypokalemia	2.1%	1.1%	Sig.
8. GFR_E	↓ 75%	80%	Sig.
9. GFR_E < 30ml/Mn	↓ 4.2%	2.2%	Sig.
10. MacroAlb.	6.6%	8.7%	Sig.
11. Arrhythmia	0.5%	0.1%	Sig.

ACCORD TRIAL (Cont.)

	<i>Intensive BP lowering</i>	<i>Standard BP lowering</i>
☰ Systolic goal in Accord trial	119 mmHg	133 mmHg
☰ The target goal of B.P. to <120 mmHg vs <140 mmHg in D. Mellitus - ↑ CV Risk. (Total mortality + CV deaths).		
☰ No evidence that intensive B.P. lowering ↓ CV events in DM2 pts. With HTN.		

NEW B.P. TARGETS IN PATIENTS WITH HYPERTENSION

Pros:

1. *Many experts were positive about the new target B.P. Guidelines.*
“The higher the B.P. → The higher the CV risk.
2. *Aim of rigid B.P. targets (< 130/ 80 mmHg) is to reduce*
*Stroke*
M.I.
H.F. *and prevent TOD.*
SCD.
3. *A unified target is easy to apply by physicians.*
4. *Big pharma bonus !!!!*

NEW B.P. TARGETS IN PATIENTS WITH HYPERTENSION

5. *“SPRINT TRIAL” analysis – shows that :*
“The overall B.P. target of < 130/80 mmHg is better in certain respects as:
- CV mortality (Sig.)
- H. Failure (Sig.).
But not in, M.I.
, ACS.
, Stroke.
and adverse events.
Hypokalemia, hyponatraemia, hypotension were more (Sig.)

NEW B.P. TARGETS IN PATIENTS WITH HYPERTENSION

CON's:

1. *↑ Prevalence of HTN (USA: from 72 million to 100 million).*
2. *More expenses for HCS and medications.*
3. *The lower B.P. in old age is not always better e.g. 80 yr male → BP 130/80 mmHg???*
4. *The lower BP is not always the better patients with ISH: BP 180/60.*

*If BP is reduced the 130/50 = ↑ Angina.
= ↑ Dizziness.*

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5. *“ONE All Size” is not appropriate for all pts.*
6. *More psychological effects – due to labeling pts. As being hypertensive – will precipitate depression, anxiety, QOL disturbed, absentees, from work, neuroticism.*
7. *Treat hypertensive pts. Globally – not on millimeteress Hg. !!!!*
8. *Who gains from “Applying the new BP Targets”.
= Big pharma !!!!! I wonder Bonus.*
9. *Studies to show definite CV outcomes require thousands to pts. With years of follow-up (10-20 yrs.)*

NEW B.P. TARGETS IN PATIENTS WITH HYPERTENSION

NEW B.P. Guidelines 2017 BP TARGET AHA, ACC. 130/80 mmHg

CRITICISM

- 1. More people will be classified as being hypertensive in USA 72 million pts. will jump to 100 million pts.*
- 2. More subjects will be eligible for drug Rx.*
- 3. Concern of possible over treatment in some low risk patients with occurrence of adverse events.*
- 4. Increased cost of medical care and medications (Healthy insurance.*

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CRITICISM (Cont.)

- 5. This new target of HTNRx – 130/80 mmHg for every one!!! But “one-size for all” – is a big drawback.*
- 6. Despite new guidelines – physicians will continue to treat patients – not millimeters of Hg only.*
- 7. Physicians should be free to use there own judgment.*
- 8. Younger subjects of low risk with fixed BP targets will be labeled as being hypertensive. This will be a massive public health problem and should not be guided by guideline committee isolation: Guidelines are not law.*

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CRITICISM of New B.P. Targets in HTN (Cont.)

9. Many patients – due to the fact they are now hypertensive – will be subjected to:
 - i. Absentecism.
 - ii. Neuroticism
 - iii. Anxiety.
 - iv. Perception of poor health.
 - v. Deterioration of marital and home life.
 - vi. Depression
10. In Europe, the physicians are more cautious in interpretation of the Sprint trial and about its recommendations.
11. LSM – is the best line of Rx in Milder forms of HTN – without TOD – which will improve CV outcomes if persistent on applying the LSM.

NEW B.P. TARGETS IN PATIENTS WITH HYPERTENSION

B.P. TARGETS IN HYPERTENSION MY OPINION

- A) LSM in all hypertensives.
- B) All pts.

Target = 140/90 mmHg

- Isolated HIN
- AGE – until 80 yrs.
- Stage I $\geq 160/100$
- Stage II $\geq 180/110$
- Isolated systolic HTN 170/60
- High risk pts. DM₂ CKD, TIA, CAD

- C) Pts with HTN:

Target $\leq 130/80$ mmHg

- Young. = 40 yrs.
- Isolated HTN
(No concomitant DIS no TOD)

N.B.: No definite proof (CV outcomes to lower B.P. $< 130/80$ mmHg.) (Adverse events are more-with lower B.P.'s)

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***B.P. TARGETS IN HYPERTENSION MY OPINION
(Cont.)***

D) Octogenerations = 150/90 mmHg.

HTN ≥ 80 yrs.

Target BP.

* *Go low – Go slow in B.P. medications in:*

- Older pts. Dizziness

- HTN + TiA → Oliguria

- HTN + CKD Chest pain

* *The lower the B.P. is **not always the better** !!!!*

