

Beta Blocker Should Remain as a First Line of Drug In the Management of Primary Hypertension

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**To know that we know what we know
and to know that we do not know what
we do not know that is true knowledge**

Copernicus (1473-1543)



Can you ignore the structural beauty of TAJMAHAL?

♥ Old is Gold

♥ Beta blocker is serving the human health
for last 4 decades

Reserpine

Guanithidine

Alpha methyl dopa

Gone with the wind of
new arrivals of drugs



Some Heroes Never Die

- Gregory Pake
- Audrey Hepbarn
- Sean Conory
- Amitabh Bachchan
- Razzak
- **Beta Blocker**

Vs

- Tom Cruize
- Jim Kerry
- Angelina Jollie
- Abhishek
- Riaz
- **CCB**
- **ACE I**
- **ARB**



Nobel Prize!

**The only anti hypertensive drug-Beta Blocker,
Inventors were awarded Nobel Prize in 70s**



- ♥ **Most patient with primary HTN have to some extent features of TOD.**
- ♥ **Until 1995 beta blockers were the drug of choice in the management of HTN, MI, Arrythmias.**
- ♥ **Propaganda against the use of beta blockers is absolutely Pharmaceutically biased.**

Carvidelol / Metoprolol / Atenolol



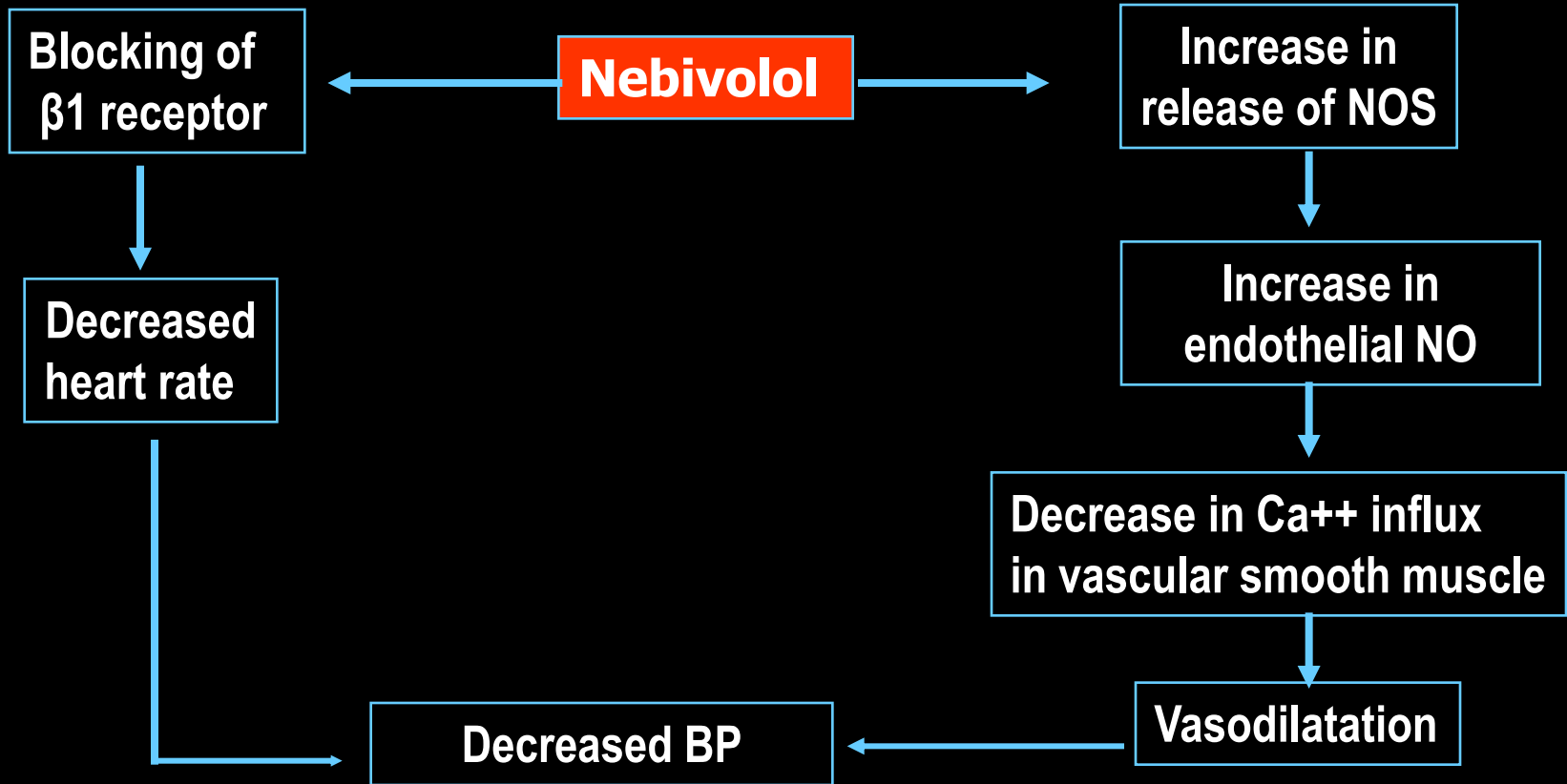
Dual Mode of Action

Nebivolol, Carvedilol & Atenelol has dual mode of action and controls BP more effectively



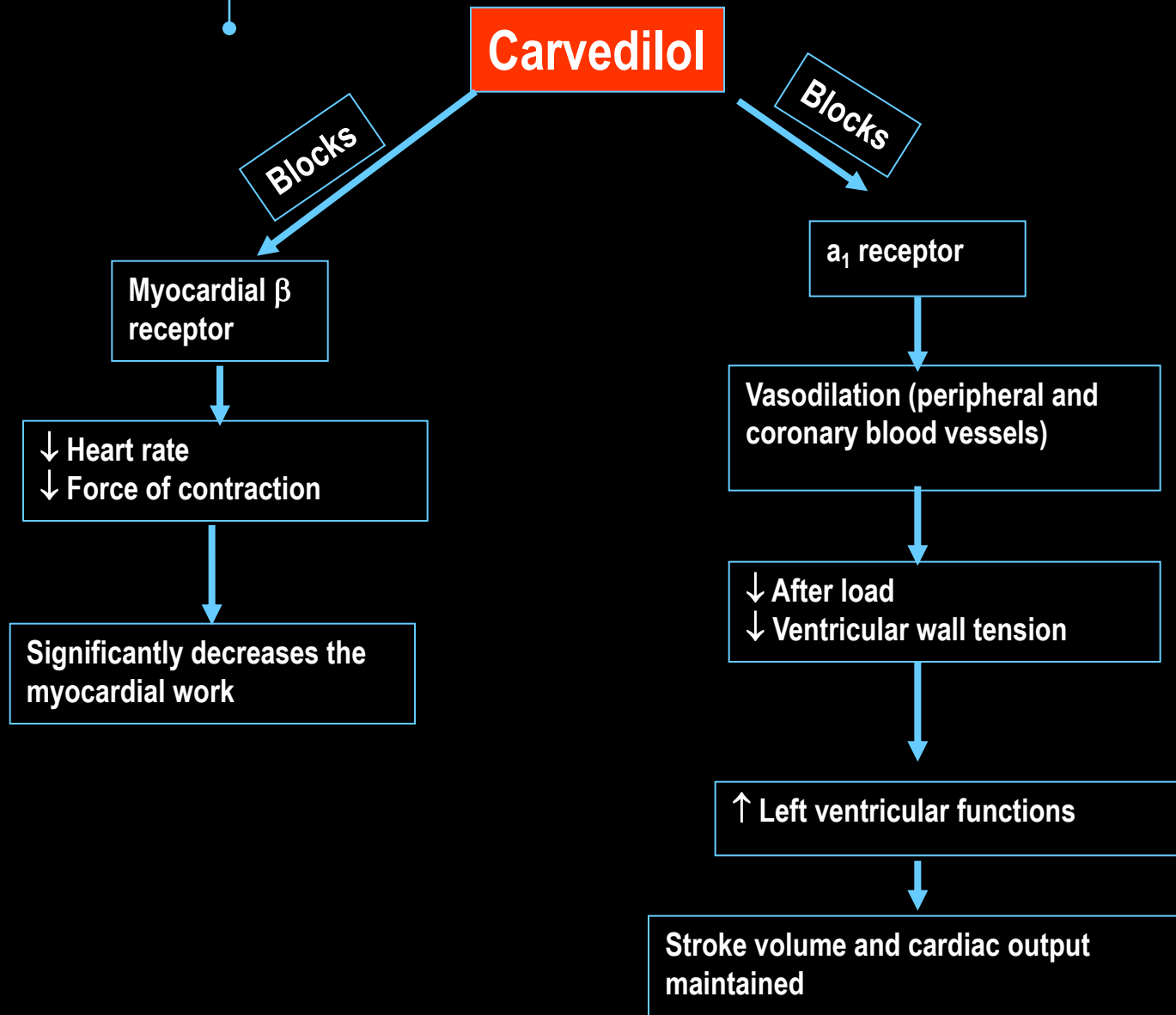
Nebivolol

Mode of action



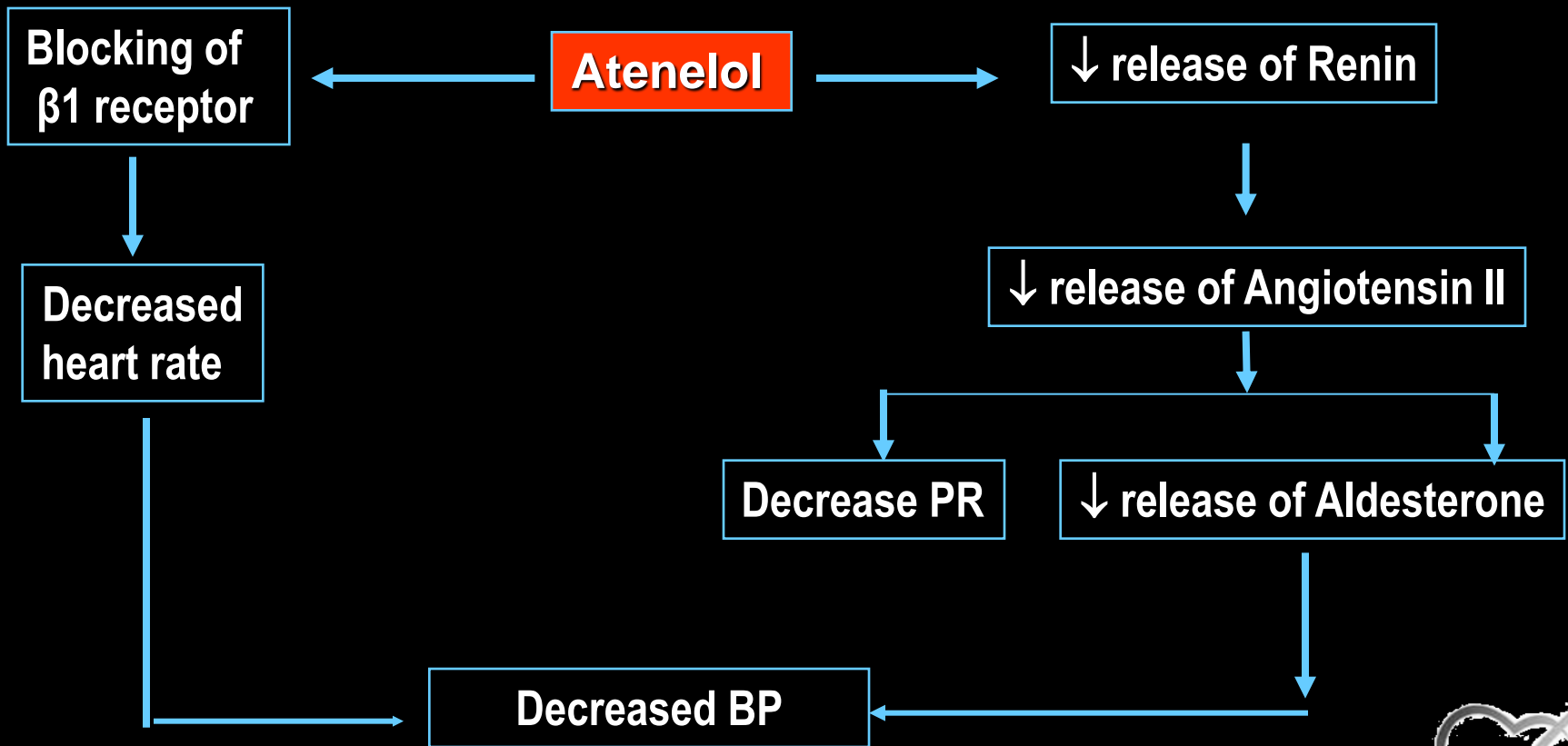
Carvedilol

Mode of action



Atenelol

Mode of action



Anti Oxidant Property

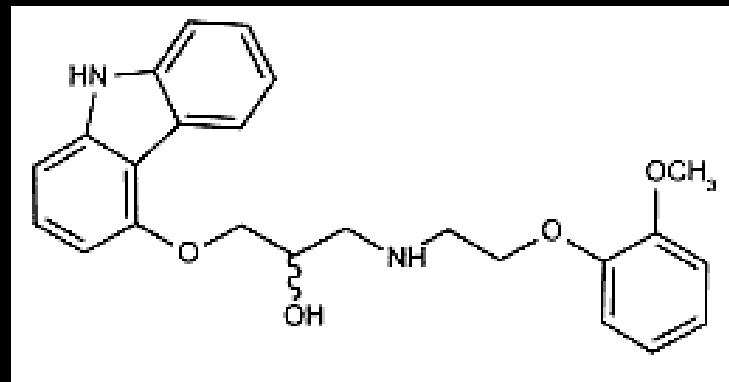
Navivolol and Carvedilol has extra benefit of Antioxidant Property.

- ♥ **Nebivolol is a Beta-Blocker under FDA review for the treatment of hypertension.**
- ♥ **Nebivolol has unique pharmacologic properties, including high specificity for the beta-1 receptor and a nitric oxide-mediated vasodilator and antioxidant properties.**



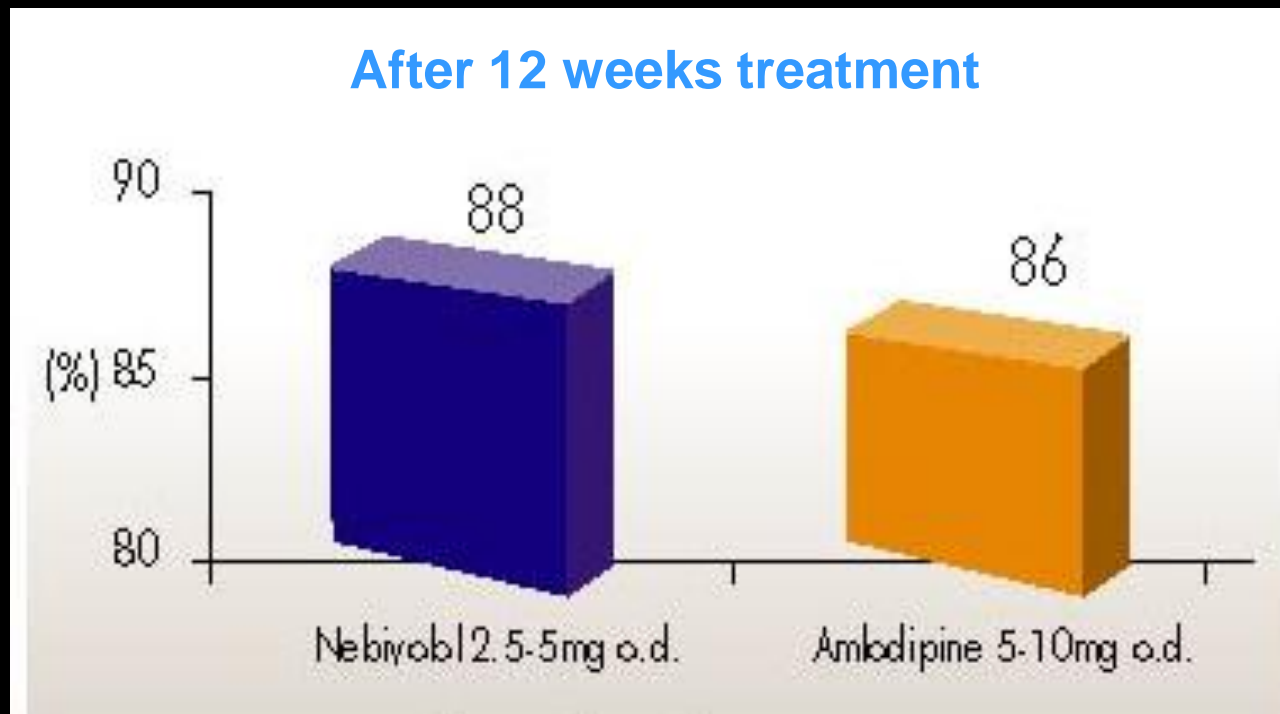
Carvedilol

Carvedilol has significant antioxidant properties. Carvedilol inhibits the generation of oxygen free radicals and prevents low-density lipoprotein (LDL) oxidation, which, in turn, reduces the uptake of LDL into the coronary vasculature. This antioxidant activity contributes to carvedilol's cardioprotective effects.



Nebivolol

**Better patients' response rate than many other agents
(Response rate = DBP <90mm Hg or 10mm Hg
reduction in DBP after 12 week treatment)**

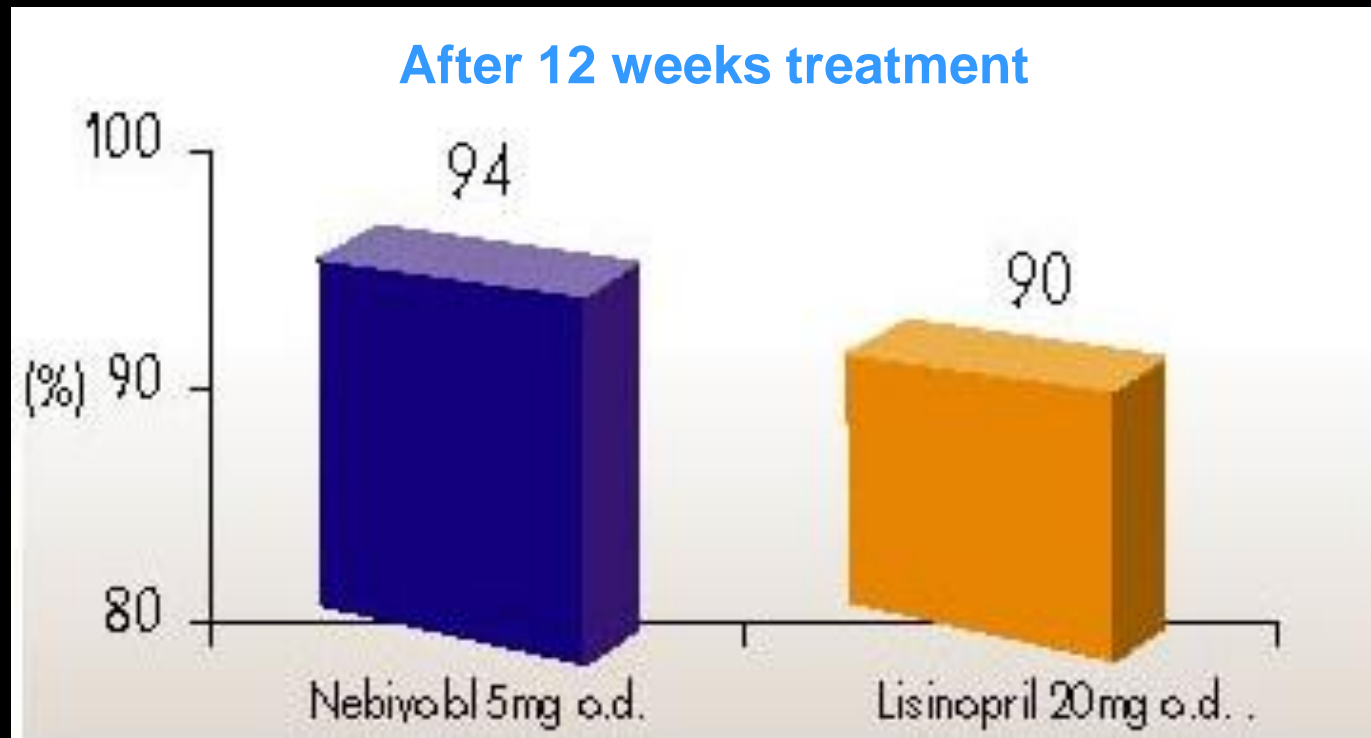


*Ref: Hanke Mollnau et al, 'Nebivolol prevents vascular NOS .in experimental hyperlipidemia',
Thrombosis, Arteriosclerosis, and Vascular Biology. 2003;23:615*



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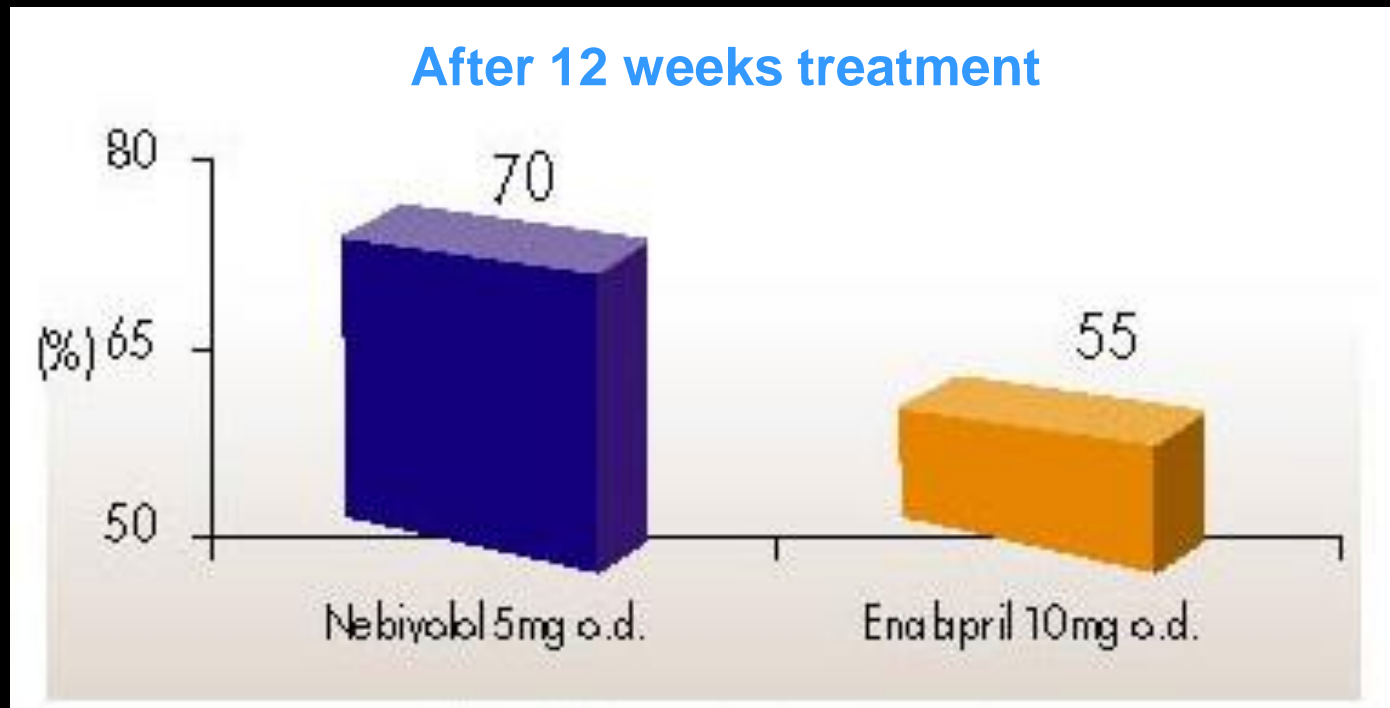


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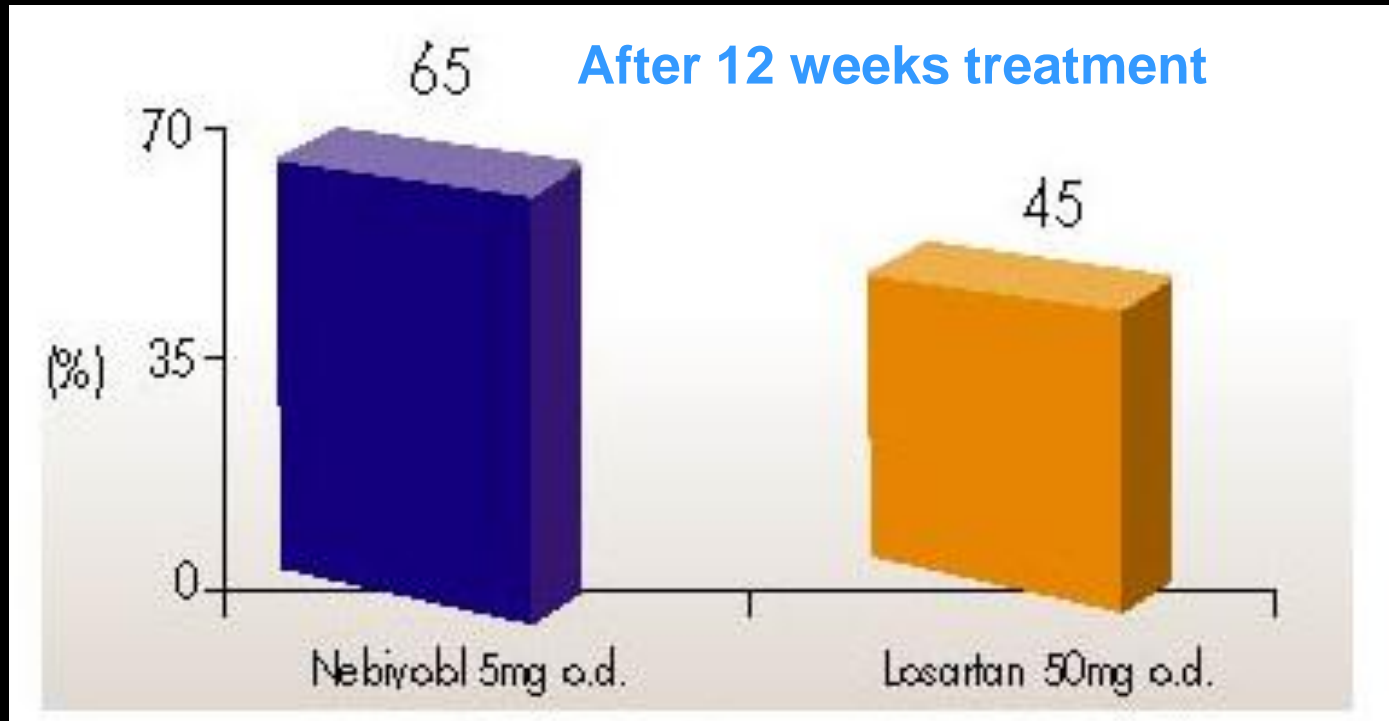


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**In this present stressful, panic and terror world,
beta blockers reduces anxiety & tension.
This is a great advantage which non beta blocker
don't have.**

Recent knowledge says ARB may increase the risk of MI

Circulation 2006; 114: 838-854



MRC

IPPS

MAPHY

Studies (Prospective control)

Primary cardio protective effect of **Beta Blockers
lowers cardiac mortality**

Drugs Exp Clin Res 1990; 16 (3): 113-22



JNC 7

ACE I

Beta Blocker

CCB

Are alternative to Thiazide

ESH / ESC Recommended:

Control of BP by any agents is more important than the type of agent used.



- ♥ **Current EHS guidelines require Diuretics, CCB, ACEI, ARB and Beta Blockers as equivalent first line therapy for uncomplicated HTN.**
- ♥ **JNC 7 also recommend same.**
- ♥ **Both sets of guideline required Beta Blockers as the first choice in patients at high risk for CAD, Post MI & HF.**



Cost ?

- ♥ It is cheaper, very much important issue for poor country like Bangladesh.
- ♥ By beta blockers mild to moderate HTN is being managed with (04-06) USD per year on the contrary ARB/CCB costs (40-50) USD per year.



Compliance

- ♥ 30-40% ACEI patient discontinue drugs because of dry cough.
- ♥ 25-30% CCB patient discontinue drugs because of development of dependent edema.

Patients remain compliant & adhere to the treatment with **Beta Blockers** only.



Forgotten benefits

A.

Migraine

Panic attack

Anxiety

Palpitation

This clinical argument should not be over looked

B.

40 years of serving human health with dual receptor mediated effects (Atenelol, Carvedilol & Nebivolol).



C.

Genetic back ground of patients determine the clinical effects on glucose & lipid metabolism.

D.

Majority patients of EH presents with TOD shown evidence of benefit with **Beta Blocker.**

(Guideline for management of hypertension, ESH/ESC, J Hypertens 2003; 21: 1011-1053)



Hypertension Trials

Trials	Treatment	No of pts	Risk of MI
LIFE	Atenolol	4588	+ 07%
	Losartan	4605	
SCPOE	Placebo	2460	+ 11%
	Candesartan	2477	
VALUE	Amlodipine	7596	+ 19%
	Valsartan	7649	



? The Clinical Trials

ALLHAT

Conclusion

Amlodipine & Lisinopril
are **inferior** to Diuretics

ASCOT BPLA

Conclusion

Amlodipine & Perindopril
are **superior** to Beta Blocker
& Diuretics



Beta Blocker Still Superior

900 patients with uncomplicated HTN

Atenolol - 64%

Enalapril - 50%

HCTZ - 45%

CCB - 45%

Reduction of BP after 8 weeks of treatment

Philip et al. BMJ 2003; 315:7101



Data of Meta Analysis (13 trials) (Atenolol)

<u>Events</u>	<u>Beta Blockers</u>	<u>Other Drugs</u>
Stroke	1650/51963	1594/53882 (56)
MI	1935/51963	2042/53882 (107)
Total Mortality	3525/52016	3766/53935 (231)



Data of Meta Analysis (6 trials)

(Non Atenolol)

<u>Events</u>	<u>Beta Blockers</u>	<u>Other Drugs</u>
Stroke	48/4553	29/4451 (19)
MI	110/4553	125/4451 (15)
Total Mortality	126/4606	139/4504 (13)



Data of Meta Analysis (Mixed)

<u>Events</u>	<u>Beta Blockers</u>	<u>Other Drugs</u>
Stroke	551/15981	714/17990 (163)
MI	477/15981	634/17990 (154)
Total Mortality	916/15981	1310/17990 (394)



Conclusion

Beta blocker has 16% increased risk of stroke compared to other anti HTN. But no difference in the effect on MI or total mortality.



Conclusion

One end point that was not included in the meta analysis is prevention of CHF. Stroke prevention could be balanced by better effects on progression of CHF.

This hypothesis should be explored in more detail before BB are disregarded from being one of several 1st line choices for starting anti HTN therapy.



Conclusion

Meta analysis can never be better or worse than what the quality data from the individual trials tell.

This is also a matter of trials included or not included in the meta analysis.



Beta Blocker has been serving for last four decades,

It was present,

It is present and

It will remain in future

as 1st line drug for the management of primary hypertension.



Take Home Message

Make New Friends,

But Keep The Old,

The New are SILVER

But Old is GOLD





Thank You All

