

# Antihypertensive treatment and QUALITY OF LIFE

L. Van Bortel

Heymans Institute of Pharmacology  
Ghent University, Belgium

# Major goals of therapy

To preserve / improve:

*Quantity of life*

*Quality of life*

### 3 QoL and antihypertensive drugs

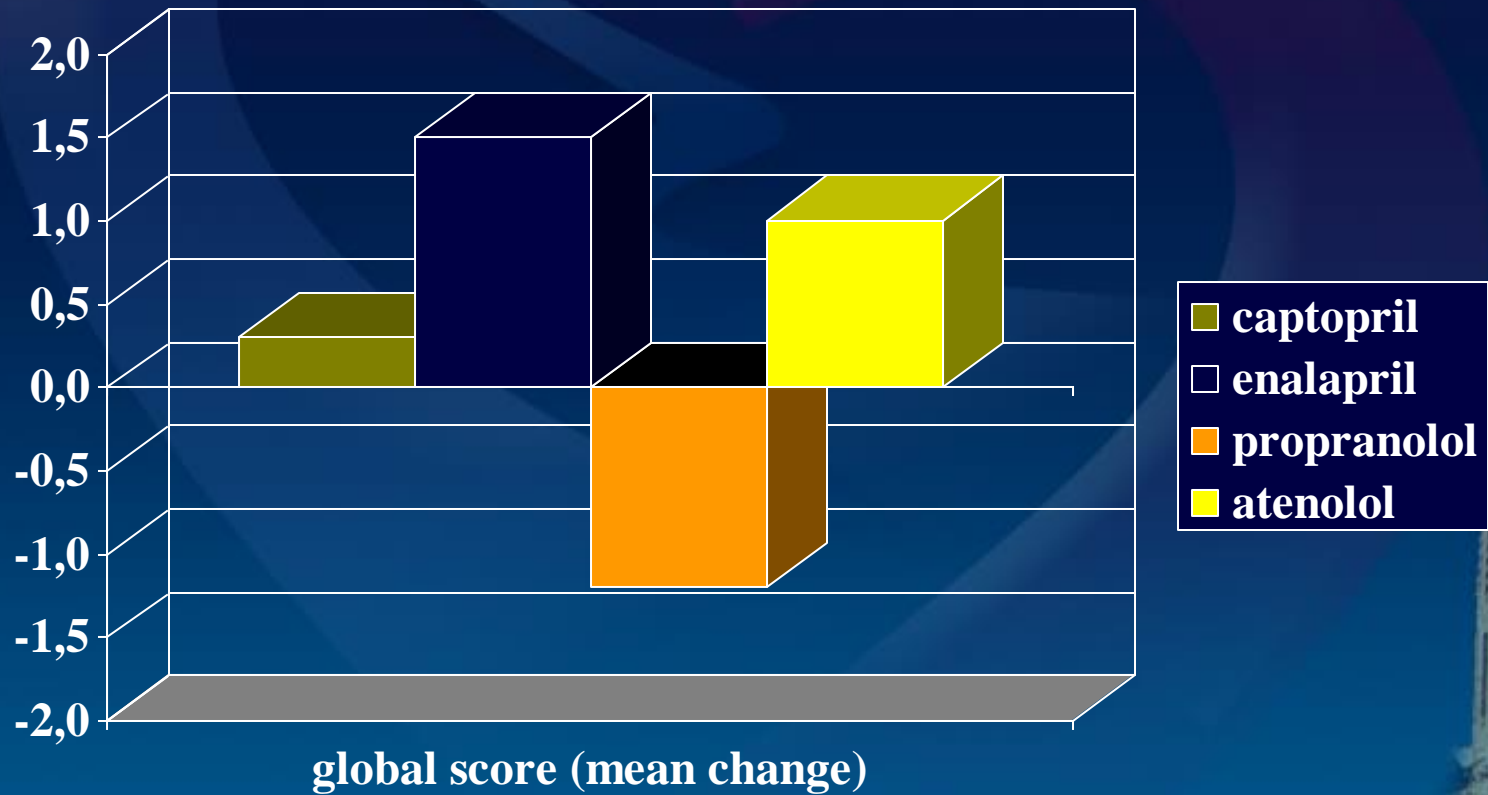
## General well-being

% patients	improvement	worsening
captopril	51.4	30.9
Methyldopa	39.2	51.0
propranolol	39.1	45.4

*SH Croog et al. N Eng J Med 1986; 314:1656-1664.*

**QoL with ACE inhibitor > Beta-blocker**

# Quality of life



# QoL with selective beta<sub>1</sub>-blockers

**Bisoprolol = Enalapril**

Breed JGS et al. J Cardiovasc Pharmacol 1992; 20:750-755

**Atenolol = Cilazapril**

Fletcher AE et al. Hypertension 1992; 19:499-507

**Bisoprolol = Nifedipine retard**

De Hoon JNJM et al. Cardiovasc Drugs Ther 1997; 11:465-471

**Atenolol = Nifedipine retard**

Fletcher AE et al. Hypertension 1992; 19:499-507

**Bisoprolol = bendrofluazide (low dose)**

Vanmolkot FHM et al. J Hum Hypertens 1999; 13:559-563

**Atenolol ≥ Chloorthalidon**

Wasserheil-Smoller S et al. Am J Hypertens 1992; 5:37-44

# Overall QoL

## Similar

Selective beta<sub>1</sub>-blockers

ACE inhibitors

Calcium antagonists (long action)

Thiazide diuretics (low dose)

## Lower

Nonselective beta-blockers

Thiazide diuretics (high dose)

## Beta-blockers with vasodilating properties

Carvedilol

non-selective

VD partly through  $\alpha$ -blockade

Celiprolol

selective  $\beta_1$ -blockade

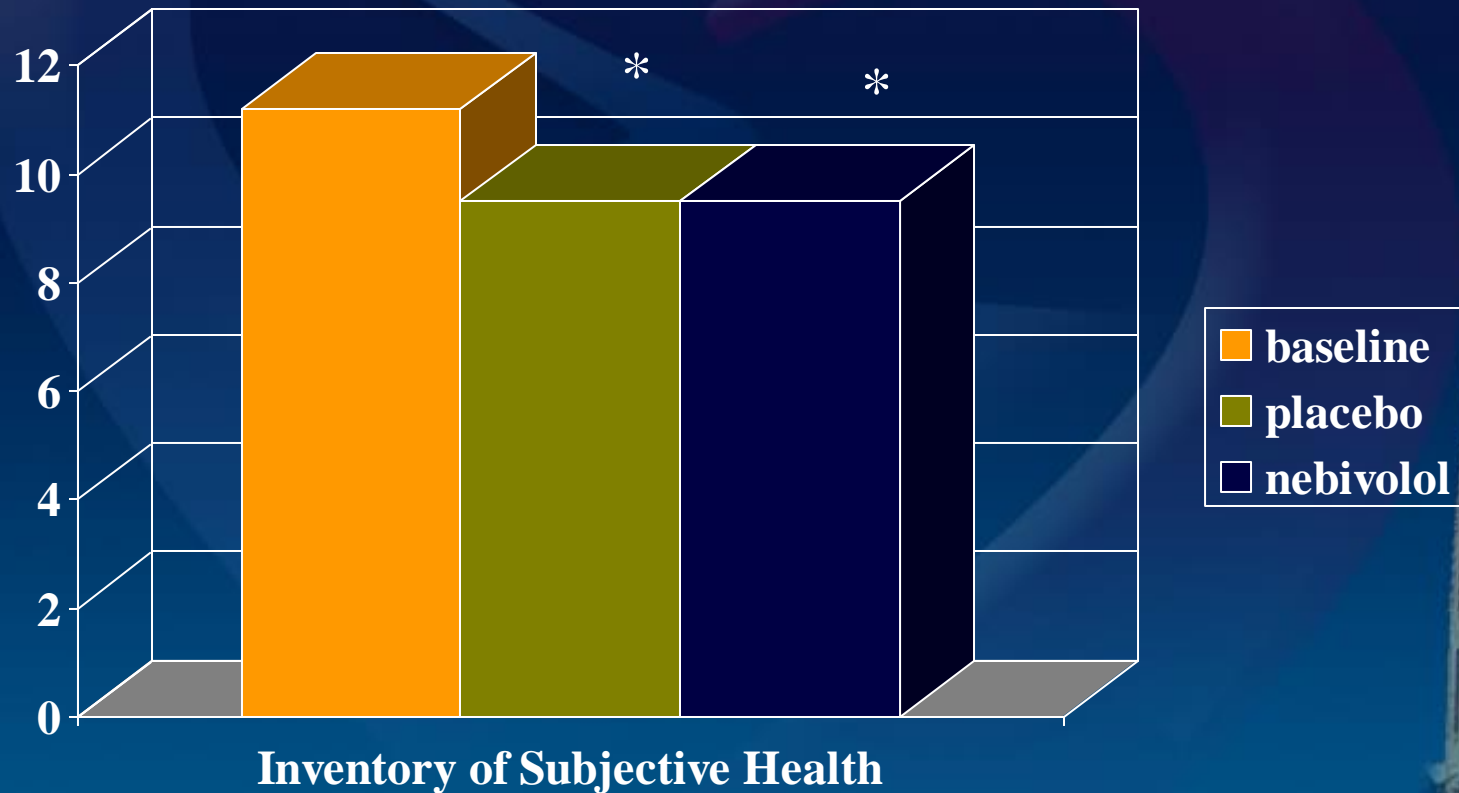
VD through ISA

Nebivolol

highly selective  $\beta_1$ -blockade

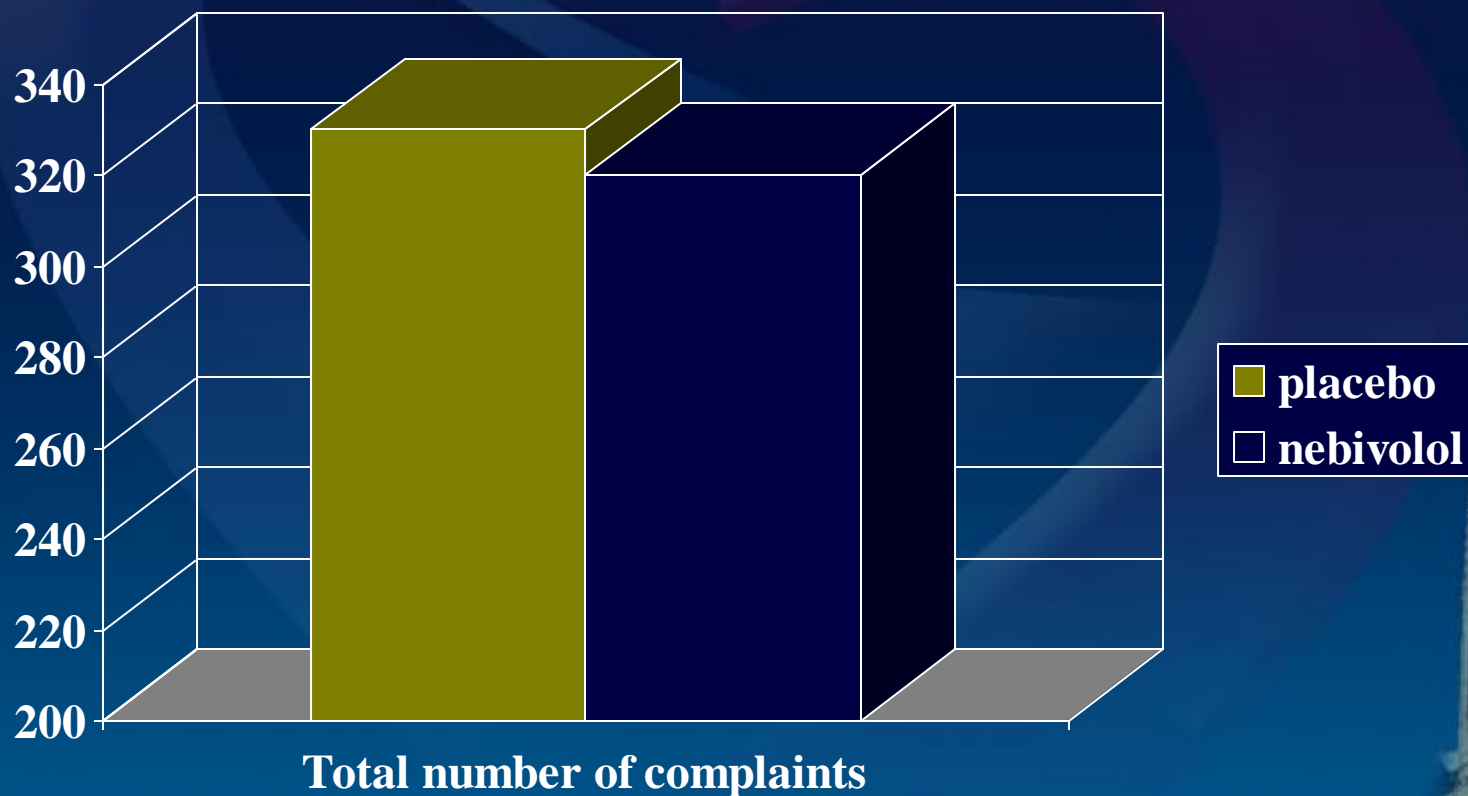
VD through NO release

# Nebivolol and quality of life

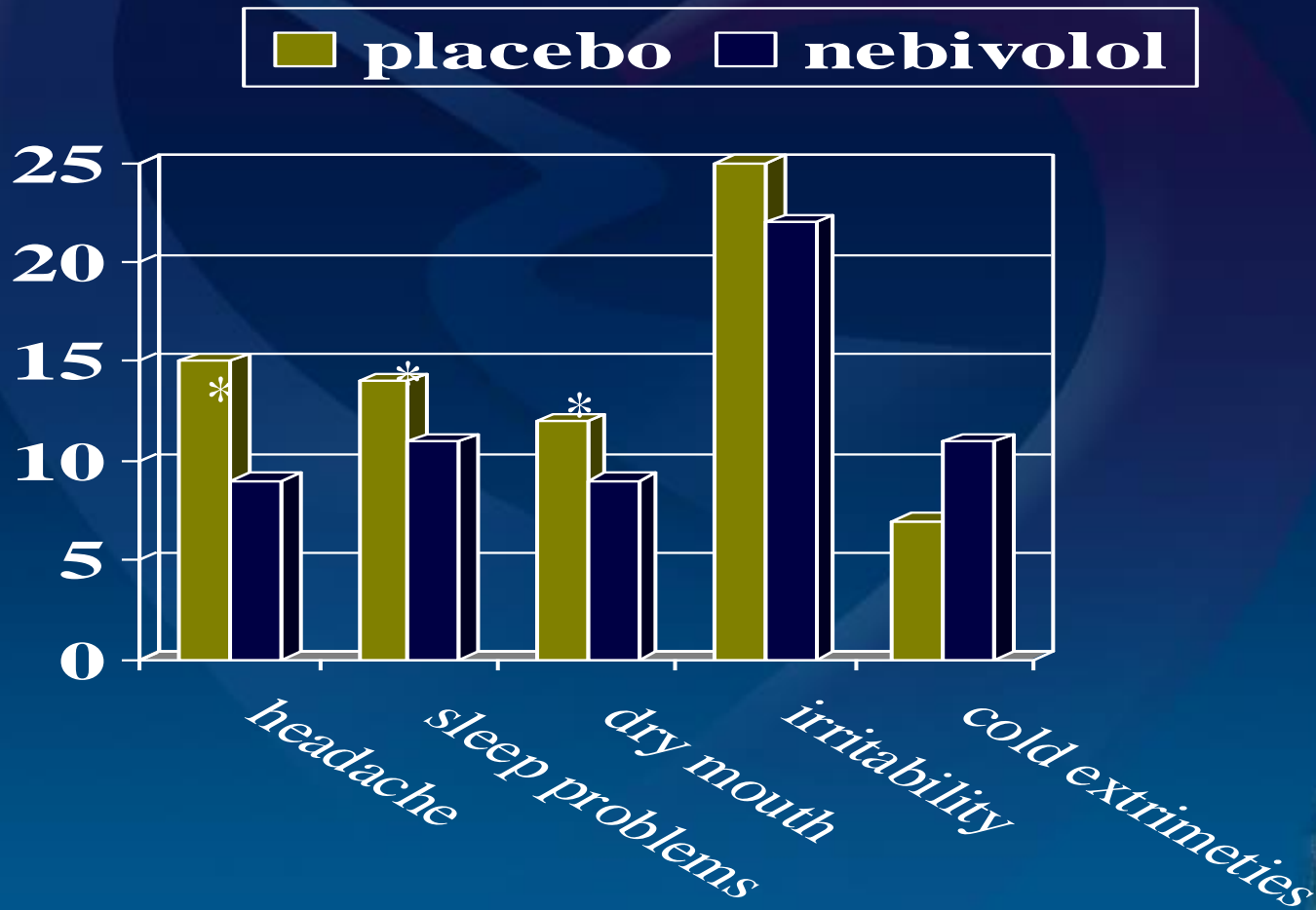




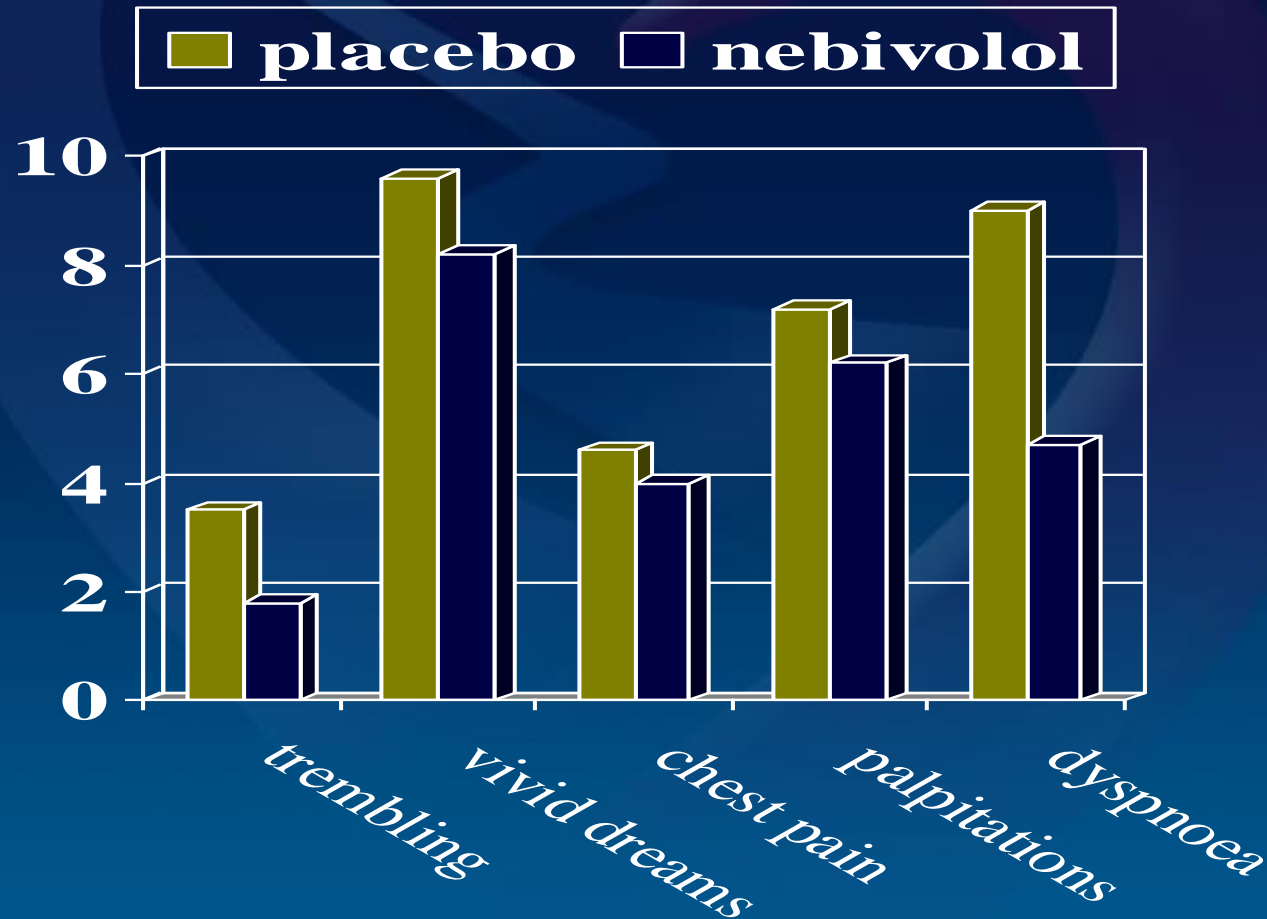
# Nebivolol and quality of life



# Nebivolol and quality of life



# Nebivolol and quality of life



# QoL with third generation beta-blockers

Celiprolol = Atenolol

Cleophas TJ et al. Am J Ther 1997; 4:117-122

Carvedilol = Enalapril

Ostergren J et al. Blood Press 1996; 5:41-49

Nebivolol = Placebo

Van Bortel LM et al. J Cardiovasc Pharmacol 1993; 856-862.

# Nebivolol versus losartan

## Study design

				Nebivolol + HCTZ	
W.O.	R.I.	Nebivolol	Nebivolol	Nebivolol	
W.O.	R.I.	Losartan	Losartan	Losartan	
				Losartan + HCTZ	
-4	-2	0	3	6	12 wks

Nebivolol 1 dd 5mg

HCTZ 1dd 12.5 mg

Losartan 1 dd 50mg

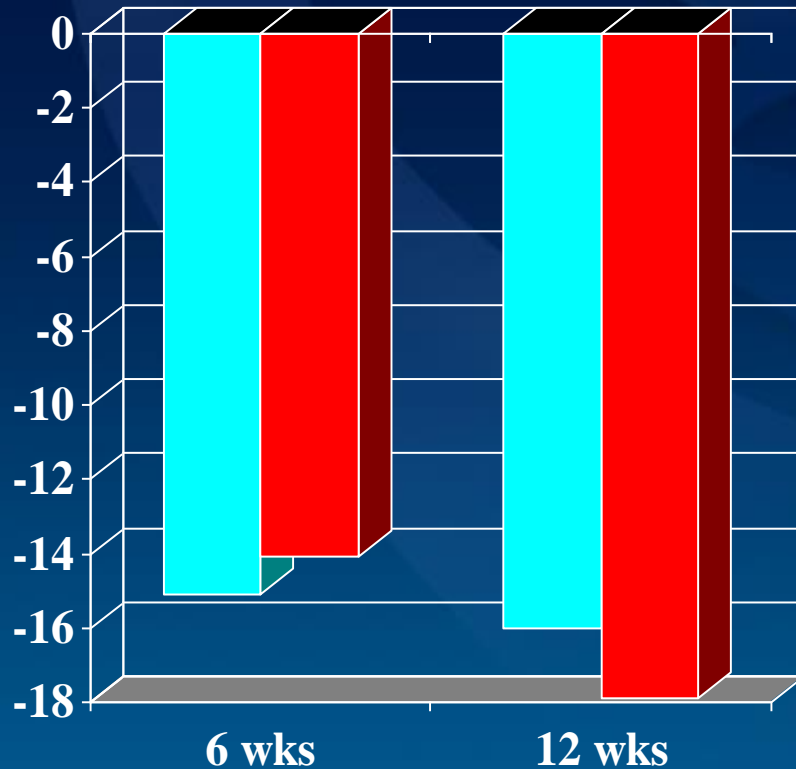
# Nebivolol versus losartan

## demographics

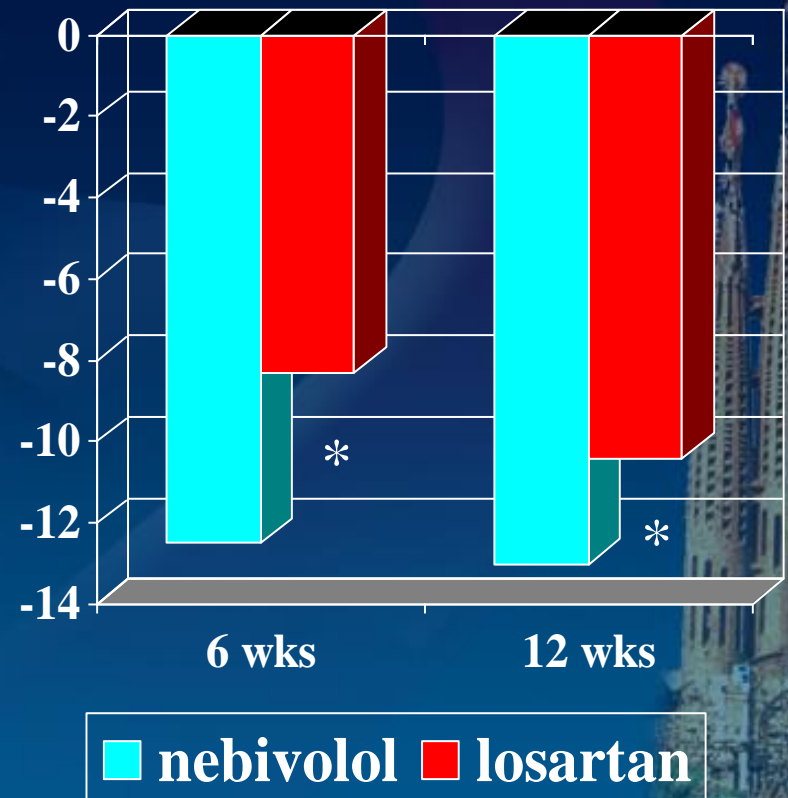
	Nebivolol	Losartan
N	147	151
(male/female)	92/55	94/57
Age (yrs)	56 ± 9	56 ± 8
Height (cm)	172 ± 9	171 ± 9
Weight (kg)	85 ± 16	83 ± 15
BP (mmHg)	166/103	165/102
Treated before	65 (44%)	61 (40%)

# Nebivolol versus losartan

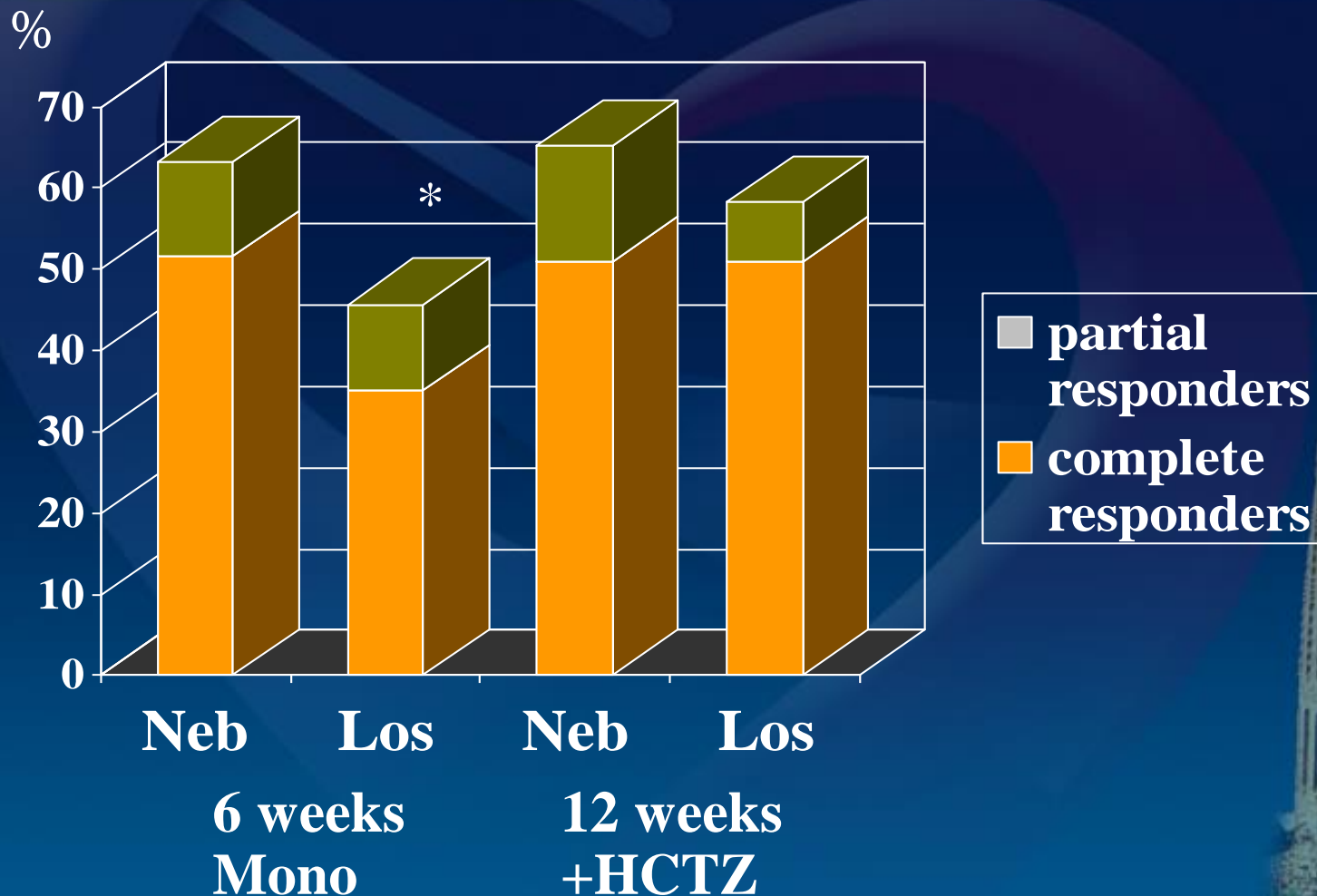
## Decrease in SBP (mmHg)



## Decrease in DBP (mmHg)



# Nebivolol versus losartan



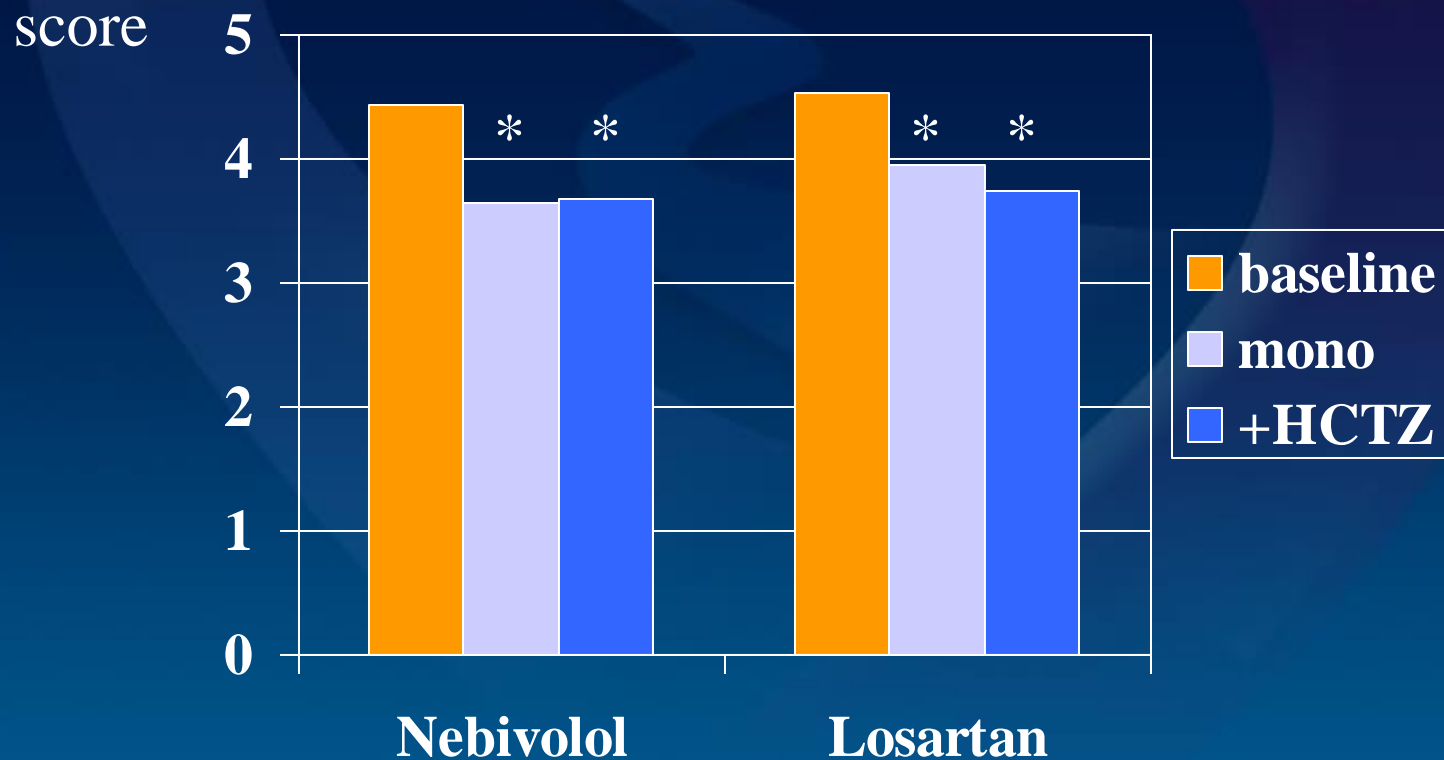
\*  $p < 0.05$  nebivolol vs losartan



# Nebivolol versus losartan

## Overall Quality of Life

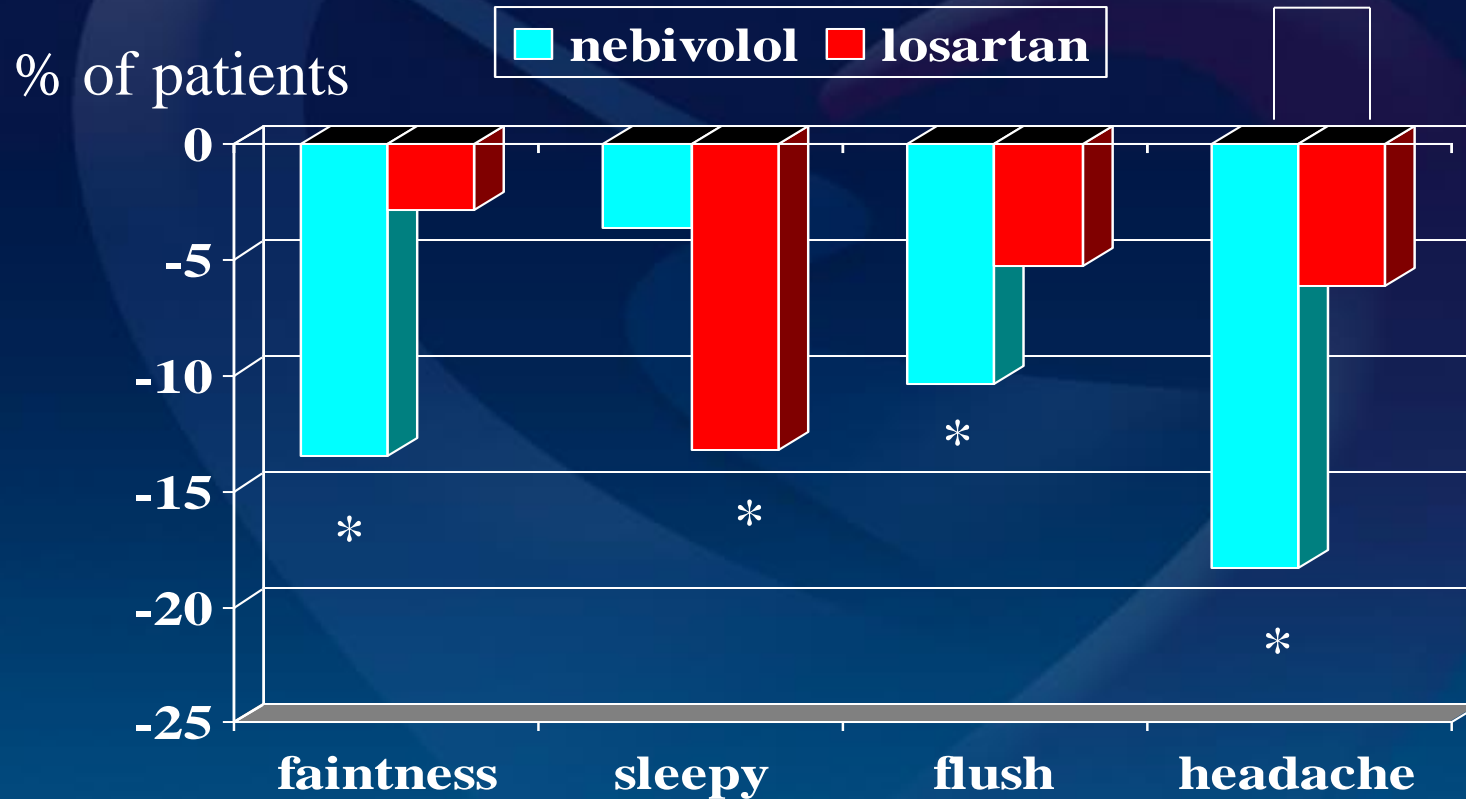
*questionnaire (Bulpitt et al) section 1, sum of scores*



\*  $p < 0.05$  versus baseline

# Nebivolol versus losartan

*change in complaints from baseline*



# p < 0.05 neбиволol versus losartan

\* p < 0.01 versus baseline

# Nebivolol versus losartan

## Summary

### Decrease in DBP

monotherapy  
with HCTZ

nebivolol > losartan  
nebivolol > losartan

### Responders

monotherapy

nebivolol > losartan

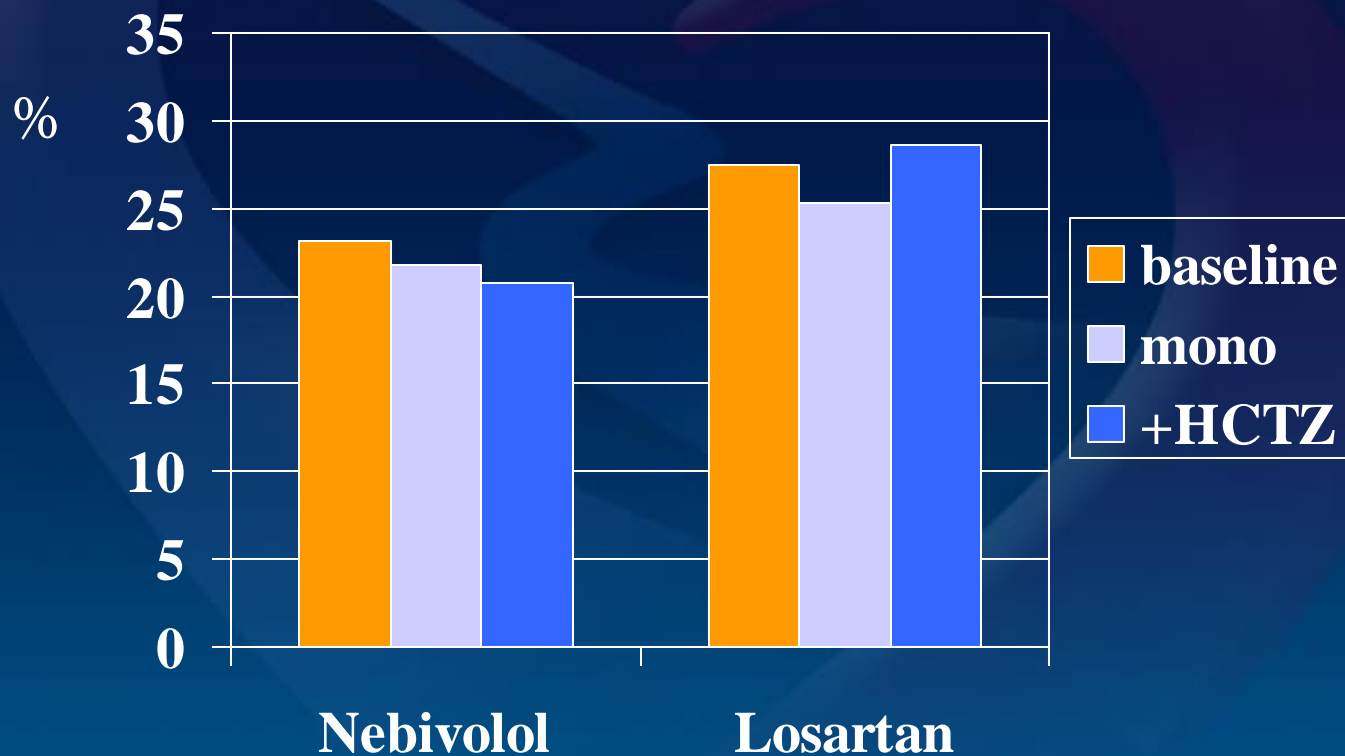
monotherapy nebivolol  $\geq$  losartan+HCTZ

### Quality of life

nebivolol = losartan

# Erection problems

*% of male patients*

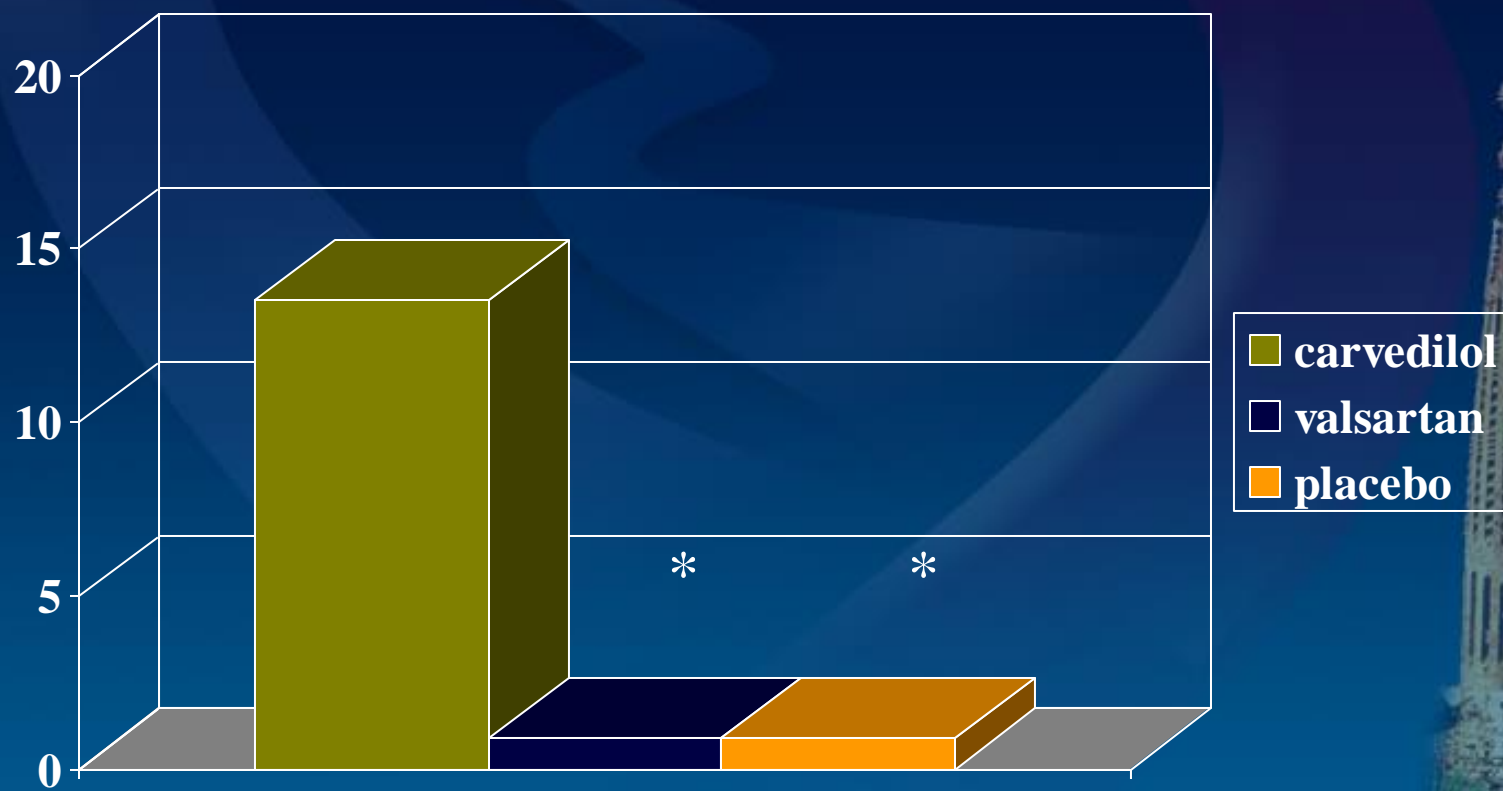


Not significant

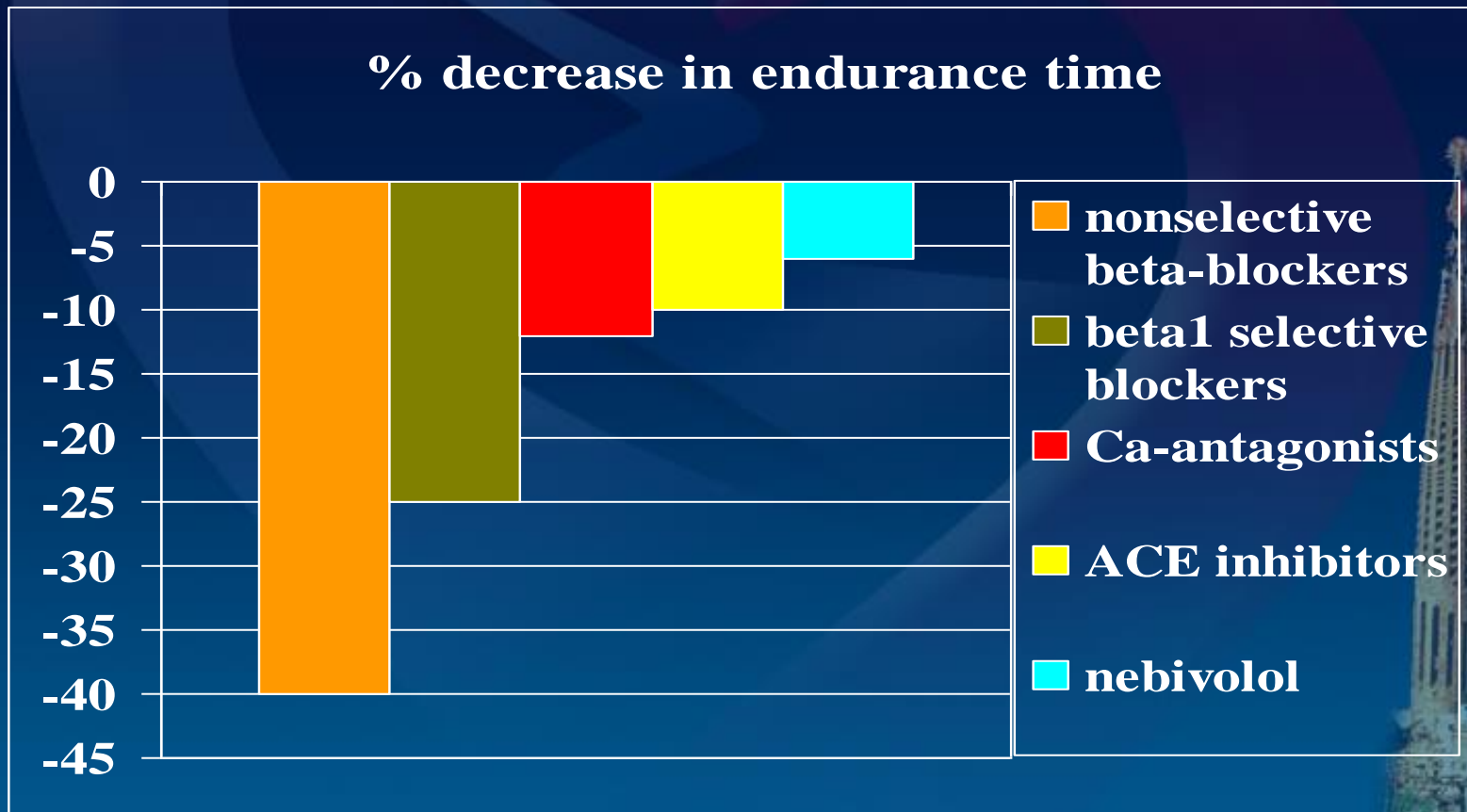
# Erection problems

## carvedilol vs valsartan

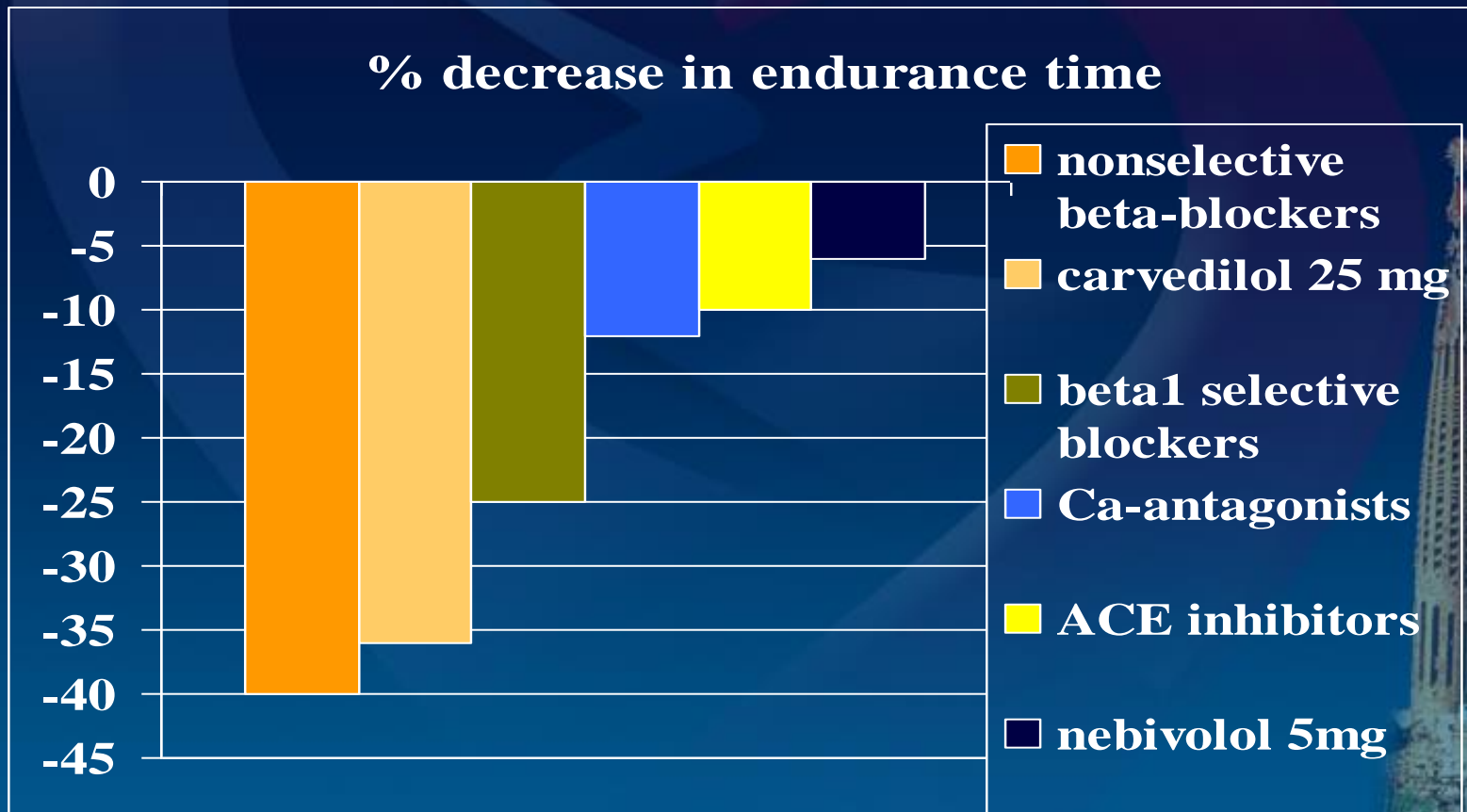
*% change from baseline*



# Antihypertensive drugs and exercise endurance performance



# Antihypertensive drugs and exercise endurance performance



# Conclusions

QoL with selective > QoL with nonselective beta-blockers

QoL appears to differ between 3rd generation beta-blockers

- QoL nebivolol identical to placebo and losartan
- In contrast to carvedilol:
  - nebivolol does not decrease exercise endurance performance in physically active patients
  - no indication that nebivolol deteriorates erectile function