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# CHE SUCCEDA QUANDO IL GERIATRA LEGGE LE NUOVE LINEE GUIDA PER IL TRATTAMENTO DELL'IPERTENSIONE ARTERIOSA?

## Andrea Ungar



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## Guidelines

# 2007 ESH-ESC Practice Guidelines for the Management of Arterial Hypertension

## ESH-ESC Task Force on the Management of Arterial Hypertension

Authors/Task Force Members: Giuseppe Mancia, Co-Chairperson<sup>a</sup> (Italy), Guy De Backer, Co-Chairperson<sup>b</sup> (Belgium), Anna Dominiczak<sup>c</sup> (UK), Renata Cifkova<sup>d</sup> (Czech Republic), Robert Fagard<sup>e</sup> (Belgium), Giuseppe Germano<sup>f</sup> (Italy), Guido Grassi<sup>g</sup> (Italy), Anthony M. Heagerty<sup>h</sup> (UK), Sverre E. Kjeldsen<sup>i</sup> (Norway), Stephane Laurent<sup>j</sup> (France), Krzysztof Narkiewicz<sup>k</sup> (Poland), Luis Ruilope<sup>l</sup> (Spain), Andrzej Rynkiewicz<sup>m</sup> (Poland), Roland E. Schmieder<sup>n</sup> (Germany), Harry A.J. Struijker Boudier<sup>o</sup> (Netherlands), Alberto Zanchetti<sup>p</sup> (Italy)

Journal of Hypertension 2007, **25**:1751–1762

**“Elderly” citato 12 volte**

## Definitions and Classification of blood pressure (BP) levels (mmHg)

Category	Systolic		Diastolic
Optimal	< 120	and	< 80
Normal	120 – 129	and/or	80 – 84
High normal	130 – 139	and/or	85 – 89
Grade 1 hypertension	140 – 159	and/or	90 – 99
Grade 2 hypertension	160 – 179	and/or	100 – 109
Grade 3 hypertension	≥ 180	and/or	≥ 110
Isolated systolic hypertension	≥ 140	and	< 90

Isolated systolic hypertension should be graded (1,2,3) according to systolic blood pressure values in the ranges indicated, provided that diastolic values are < 90 mmHg.

**Indipendentemente dall'età**

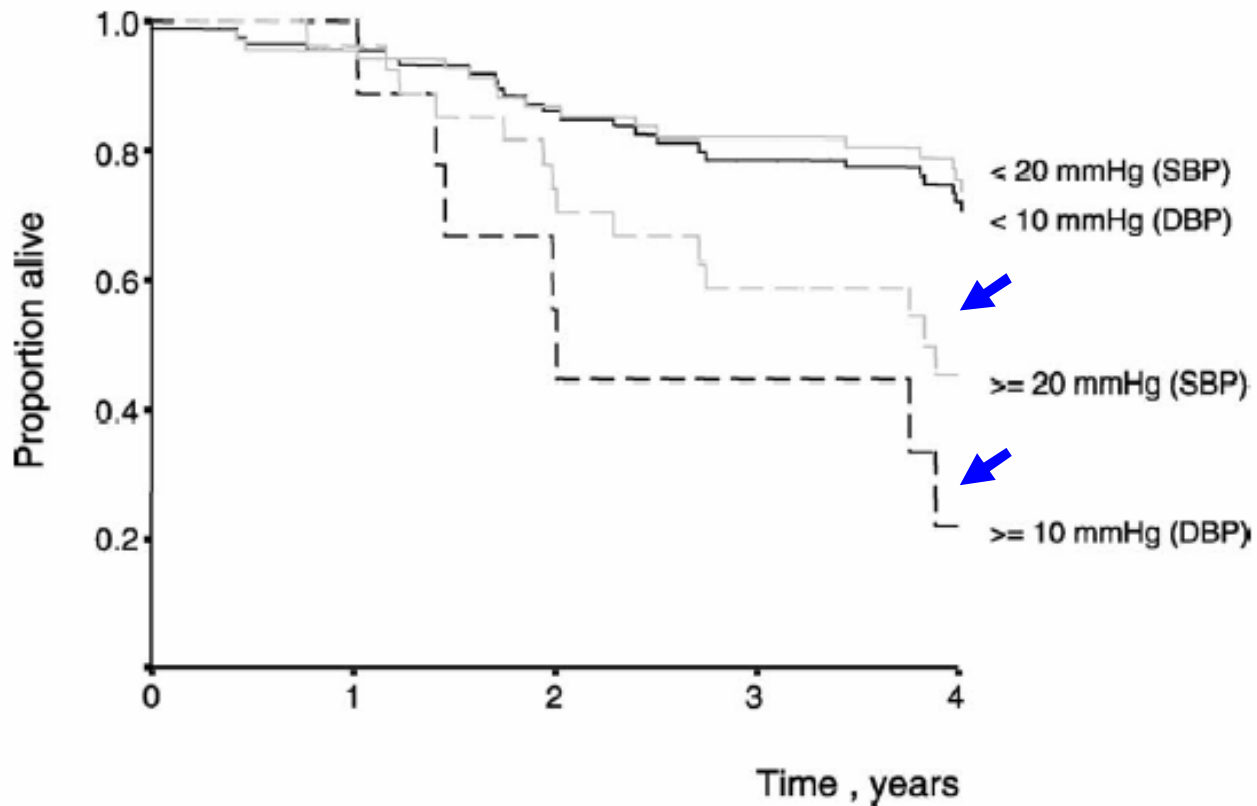
## 6. Blood pressure (BP) measurement

When measuring BP, care should be taken to:

- Allow the patients to sit quietly for several minutes;
- Take at least two measurements spaced by 1–2 minutes;
- Use a standard bladder (12–13 cm long and 35 cm wide) but have a larger bladder available for fat arms and a smaller one for thin arms and children;
- Have the cuff at the level of the heart, whatever the position of the patient;
- Deflate the cuff at a speed of 2 mmHg/s;
- Use phase I and V (disappearance) Korotkoff sounds to identify SBP and DBP, respectively;
- Measure BP in both arms at first visit to detect possible differences due to peripheral vascular disease. In this instance, take the higher value as the reference one;
- Measure BP 1 and 5 min after assumption of the standing position in **elderly** subjects, diabetic patients, and when postural hypotension may be frequent or suspected;
- Measure heart rate by pulse palpation (at least 30 sec).

# Orthostatic hypotension predicts vascular death in older diabetic patients

Vascular survival probability by diastolic orthostatic hypotension and by systolic orthostatic hypotension in older diabetic patients



## 7. Ambulatory and home BP measurements

### 7.1 Ambulatory BP

- Although office BP should be used as the reference, ambulatory BP may improve prediction of CV risk in untreated and treated patients.
- 24-h ambulatory BP monitoring should be considered, in particular, when
  - considerable variability of office BP is found
  - high office BP is measured in subjects otherwise at low total CV risk
  - there is a marked discrepancy between BP values measured in the office and at home
  - resistance to drug treatment is suspected
  - hypotensive episodes are suspected, particularly in elderly and diabetic patients
  - sleep apnoea is suspected
  - office BP is elevated in pregnant women and pre-eclampsia is suspected

# Postprandial Hypotension Predicts All-Cause Mortality in Older, Low-Level Care Residents

Alexander A. Fisher, MD, FRACP, PhD, Michael W. Davis, MBBS, FRACP,  
Wichat Srikusalanukul, MD, PhD, and Marc M. Budge, BMedSc, MBBS, FRACP

J Am Geriatr Soc 53:1313–1320, 2005.

N=179; mean age: 83 years; 80% women

**Table 4. Multivariate Cox Proportional Hazards Analysis for All-Cause Mortality**

Parameter	Relative Risk	95% Confidence Interval	P-value
PPH	1.79	1.19–2.68	.005
Age	1.04	1.01–1.08	.02
Male	1.65	0.99–2.76	.06
Atrial fibrillation	1.82	1.15–2.86	.01
Parkinson's disease	2.74	1.21–6.2	.02
Use of diuretics	1.46	0.96–2.22	.07

Note: Further adjustment for the presence at baseline examination of coronary artery disease, cerebrovascular disease, congestive heart failure, history of syncope, cognitive impairment, cancer, diabetes mellitus, smoking history, chronic obstructive pulmonary disease, orthostatic hypotension, hypertension, and low supine diastolic blood pressure did not change the association between postprandial hypotension (PPH) and all-cause mortality and did not reveal any new statistically significant associations.

A global test based on Schoenfeld residuals provided a chi-square value of 4.92 for the model (six degrees of freedom) with a probability of 0.55, indicating that the assumption was valid for this model.

### 3. Stratification of total CV risk

For practical reasons the term “hypertension” is used in daily practice and patients are categorized as shown in Table 1. However, when stratifying total CV risk, defining “hypertension” must be considered as flexible, being high or low based on the total CV risk of each individual.

**Total CV risk of each individual**

### 3. Stratification of total CV risk

Blood pressure (mmHg)					
Other risk factors, OD or Disease	Normal SBP 120–129 or DBP 80–84	High normal SBP 130–139 or DBP 85–89	Grade 1 HT SBP 140–159 or DBP 90–99	Grade 2 HT SBP 160–179 or DBP 100–109	Grade 3 HT SBP $\geq$ 180 or DBP $\geq$ 110
No other risk factors	Average risk	Average risk	Low added risk	Moderate added risk	High added risk
1–2 risk factors	Low added risk	Low added risk	Moderate added risk	Moderate added risk	Very high added risk
3 or more risk factors, MS, OD or Diabetes	Moderate added risk	High added risk	High added risk	High added risk	Very high added risk
Established CV or renal disease	Very high added risk	Very high added risk	Very high added risk	Very high added risk	Very high added risk

AGE > 55 years in Men and 65 years in female is a risk factor



# Prevalence of Chronic Kidney Disease in the United States

Josef Coresh, MD, PhD

Elizabeth Selvin, PhD, MPH

Lesley A. Stevens, MD, MS

Jane Manzi, PhD

John W. Kusek, PhD

Paul Eggers, PhD

Frederick Van Lente, PhD

Andrew S. Levey, MD

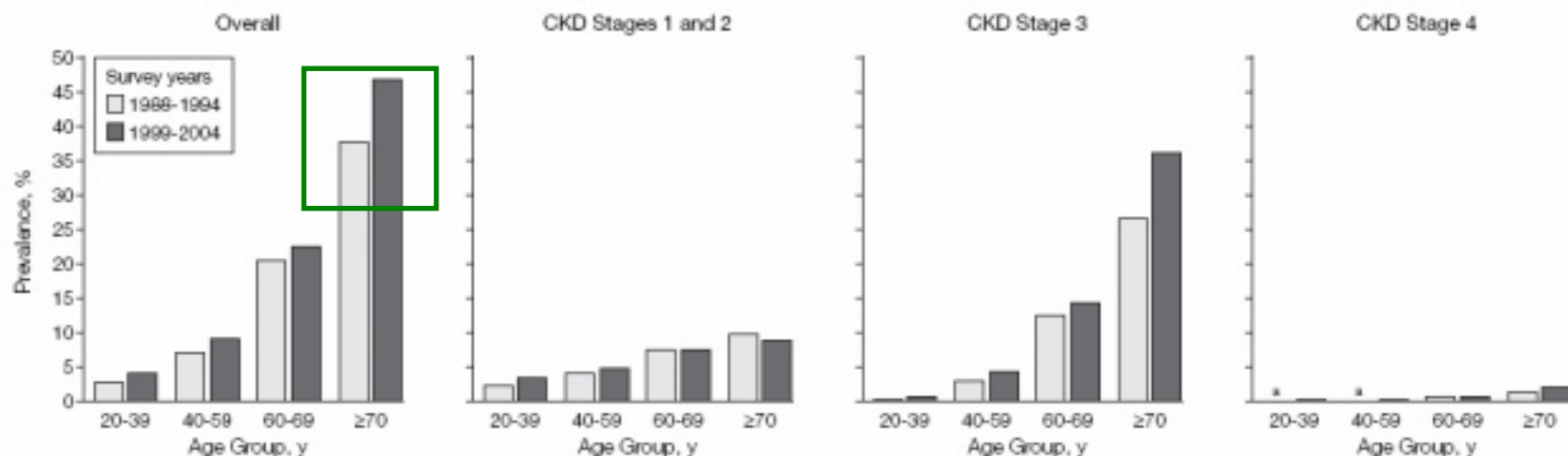
**Context** The prevalence and incidence of kidney failure treated by dialysis and transplantation in the United States have increased from 1988 to 2004. Whether there have been changes in the prevalence of earlier stages of chronic kidney disease (CKD) during this period is uncertain.

**Objective** To update the estimated prevalence of CKD in the United States.

**Design, Setting, and Participants** Cross-sectional analysis of the most recent National Health and Nutrition Examination Surveys (NHANES 1988-1994 and NHANES 1999-2004), a nationally representative sample of noninstitutionalized adults aged 20 years or older in 1988-1994 (n = 15 488) and 1999-2004 (n = 13 233).

**Main Outcome Measures** Chronic kidney disease prevalence was determined based

**Figure 2.** Prevalence of Chronic Kidney Disease (CKD) Stages by Age Group in NHANES 1988-1994 and 1999-2004



NHANES indicates National Health and Nutrition Examination Surveys.

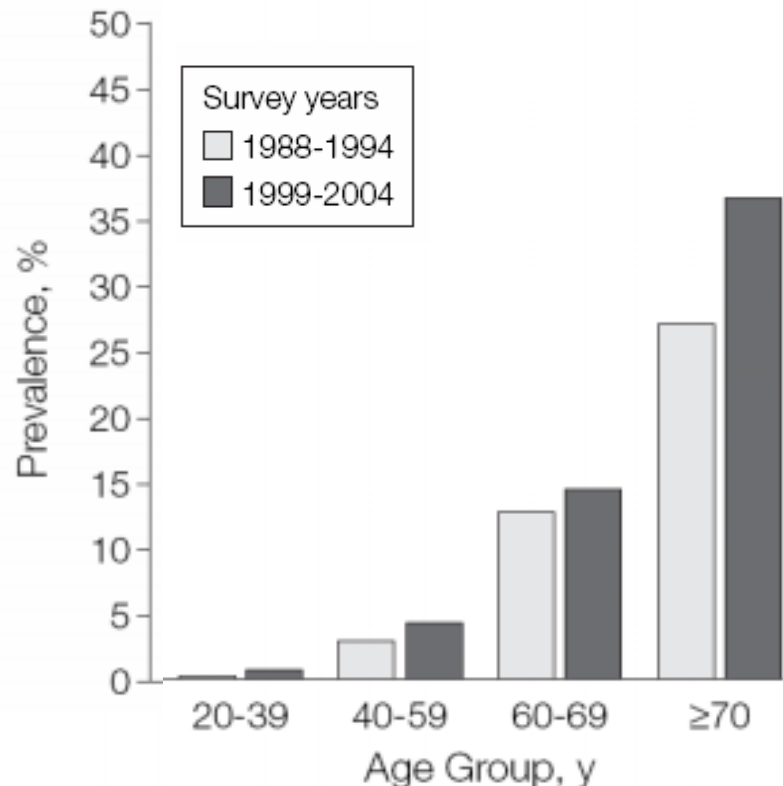
\*There were no cases in 1988-1994.

# Prevalence of Chronic Kidney Disease in the United States

Josef Coresh, MD, PhD

## CKD Stage 3

JAMA, November 7, 2007—Vol 298, No. 17



**stage 3:**

**GFR of 30 to 59  
mL/min/1.73m<sup>2</sup>**

## Guidelines

# 2007 Guidelines for the Management of Arterial Hypertension

The Task Force for the Management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC)

**Praticamente non  
esistono anziani a basso  
rischio.**

**Tutti gli anziani sono  
“almeno” soggetti a  
rischio medio-elevato**

## Guidelines

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Journal of Hypertension 2007, **25**:1751–1762

**Treatment**

# ***Trials of Antihypertensive Treatment in the Elderly***

Trial	N	Age	Risk Reduction (%)			
			CVA	CAD	CHF	All CVD
Australian	582	60-69	33%	18%	NR	31%

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**HYPVET**






HYPERTENSION IN THE VERY ELDERLY TRIAL

Syst China 2007 = 55 55% 55% 55% 51%

## Trial Stops After Stroke And Mortality Significantly Reduced By Blood Pressure-lowering Treatment For Over 80s, UK

Main Category: [Blood / Hematology News](#)

Article Date: 08 Aug 2007 - 1:00 PDT

 [email to a friend](#)  [printer friendly](#)  [view / write opinions](#)  [rate article](#)  [newsletters](#)

An international trial looking at the benefits of giving blood-pressure lowering medication to elderly patients has stopped early, after researchers observed significant reductions in overall mortality in those receiving treatment.

The 3,845 patient Hypertension in the Very Elderly Trial (HYVET) is the largest ever clinical trial to look at the

### [Statistics Canada: CANSIM](#)

Online database profiling Canada's people, land, and economy.

[www.statcan.ca](http://www.statcan.ca)

### [Online Audience Data](#)

Emeritus Professor Chris Bulpitt, HYVET Principal Investigator from the Care of the Elderly Department at Imperial College London, said: "It was not clear prior to our study whether the over-80s would benefit from blood pressure lowering medication in the same way as younger people. Our results are great news for people in this age group because they suggest that where they have high blood pressure, such treatment can cut their chances of dying as well as stroke." The Steering Committee of HYVET accepted on 12th July 2007 the recommendation of its Data Safety Monitoring Board that the trial should be stopped.

blood pressure lowering medication in the same way as younger people. Our results are great news for people in this age group because they suggest that where they have high blood pressure, such treatment can cut their chances of dying as well as stroke." The Steering Committee of HYVET accepted on 12th July 2007 the recommendation of its Data Safety Monitoring Board that the trial should be stopped.

General Public:

Not yet rated

[>> rate this article](#)

Definitive figures will not be available until all the data has been collected. Results will then be published in the peer reviewed scientific press.

Over the next few months all HYVET patients will be seen for a final visit, where all patients on trial medication will be offered the option of switching to active indapamide 1.5 mg SR based antihypertensive treatment. Prior to their final visit, all patients are advised to stay on their existing drugs until they see their trial physician.

HYVET was co-ordinated by scientists from Imperial College London, working with colleagues around the world. The main trial was funded by both the British Heart Foundation and by the Institut de Recherches Internationales Servier.





2<sup>nd</sup> interim analysis (July 2007)  
**Significant reduction in overall mortality and strokes in the treatment group**

## 20. Antihypertensive treatment in special groups

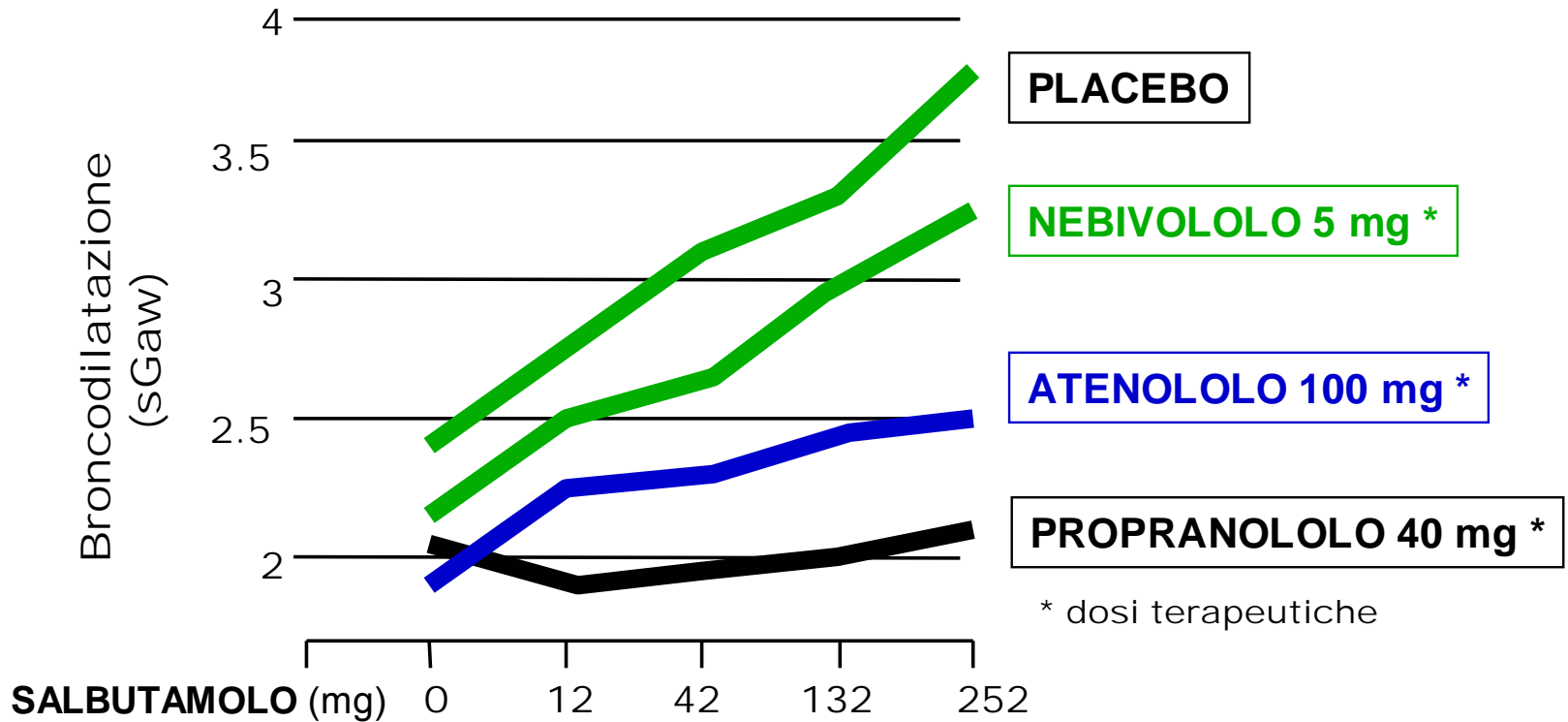
Antihypertensive treatment may differ from the one recommended in the general hypertensive population, in special groups of patients or in specific clinical conditions. The specific requirements under these circumstances are detailed below.

### 20.1 Elderly patients

- Drug treatment can be initiated with thiazide diuretics, calcium antagonists, angiotensin receptor antagonists, ACE-inhibitors, and  $\beta$ -blockers, in line with general guidelines. Trials specifically addressing treatment of isolated systolic hypertension have shown the benefit of thiazides and calcium antagonists but subanalysis of other trials also show efficacy of angiotensin receptor blockers.

# Cardioselettività di diverse molecole $\beta$ bloccanti

Prove di funzionalità respiratoria: curva dose-risposta al  $\beta 2$  agonista salbutamolo somministrato a gruppi di soggetti sani dopo trattamento per 1 settimana con diversi  $\beta$  bloccanti a dosi terapeutiche



# Effects of Losartan on Cardiovascular Morbidity and Mortality in Patients With Isolated Systolic Hypertension and Left Ventricular Hypertrophy

A Losartan Intervention For Endpoint Reduction (LIFE) Substudy

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Sverre E. Kjeldsen, MD

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Björn Dahlöf, MD

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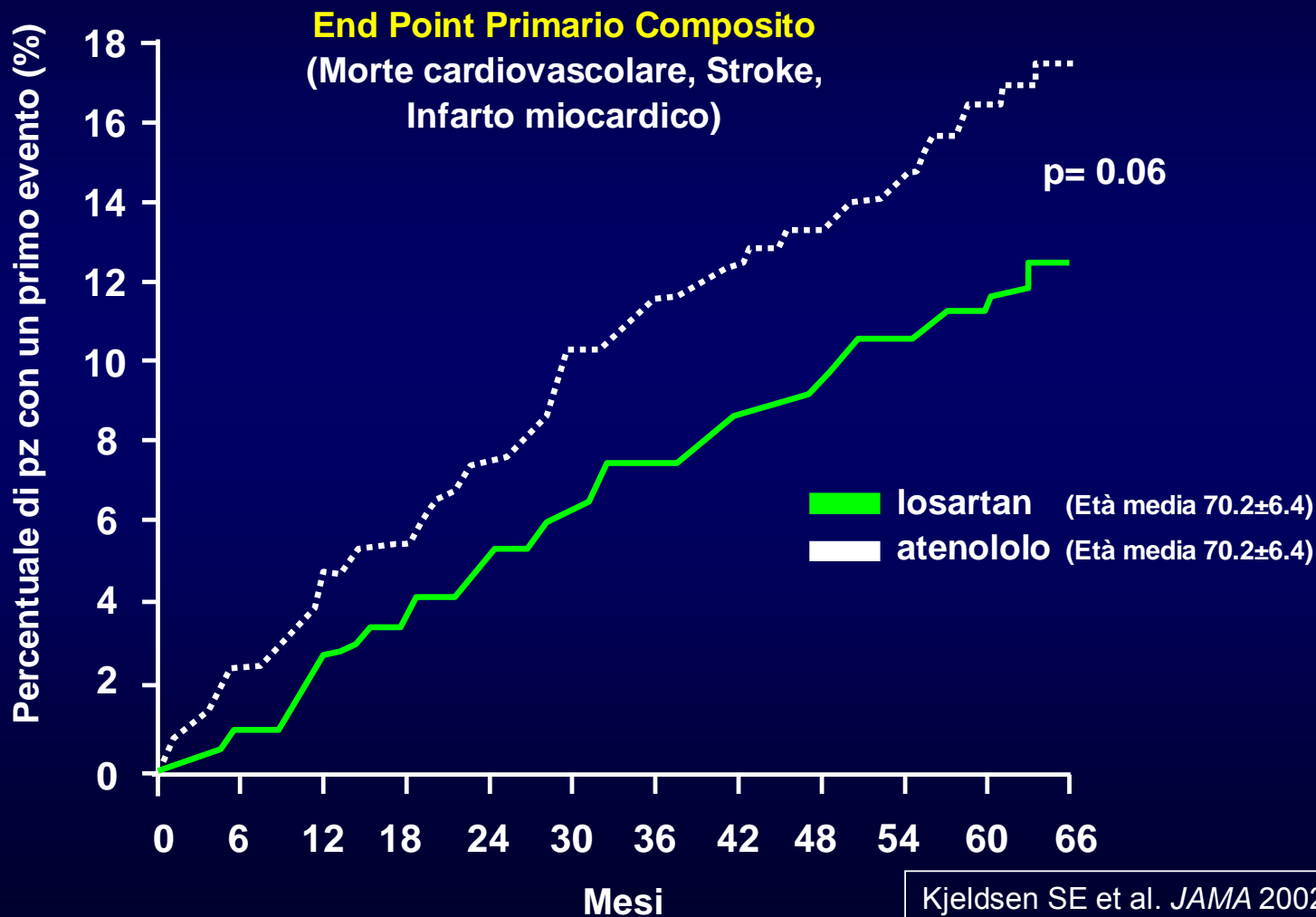
Richard B. Devereux, MD

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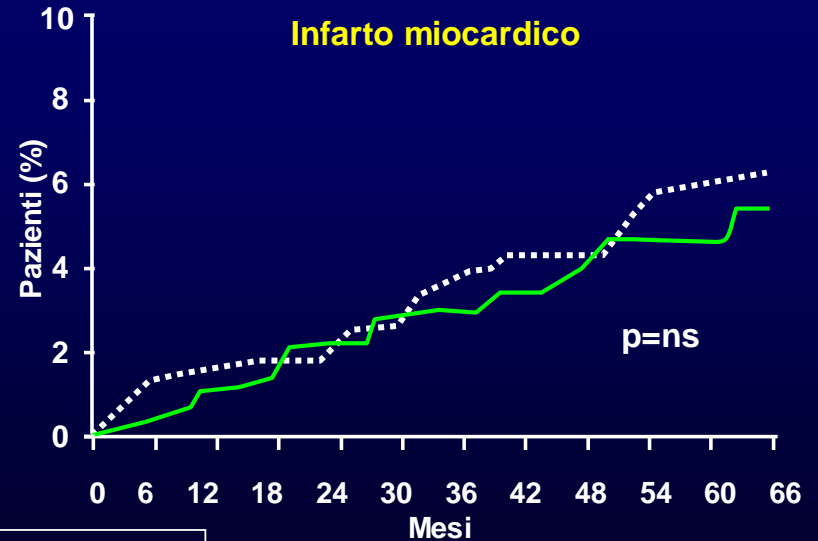
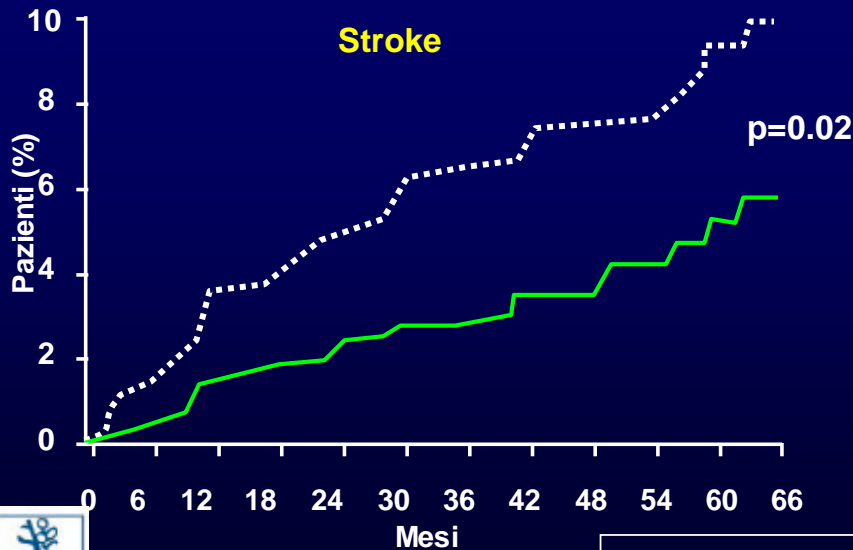
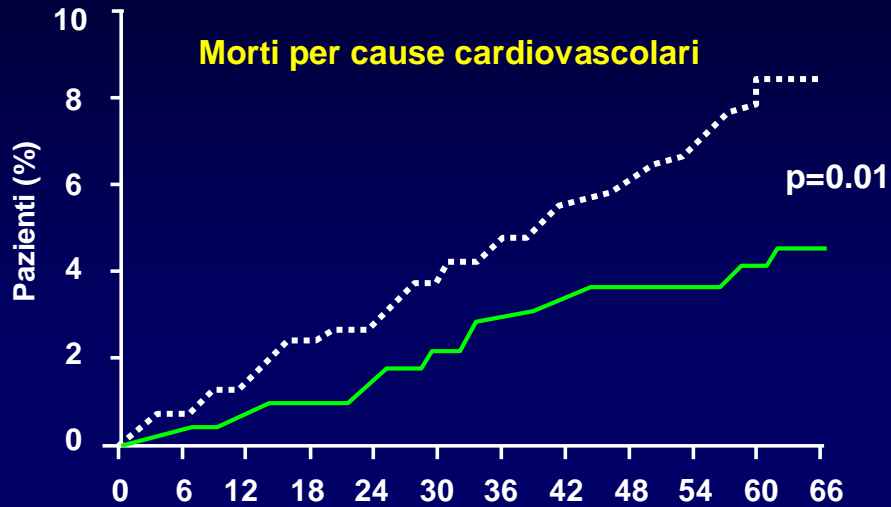
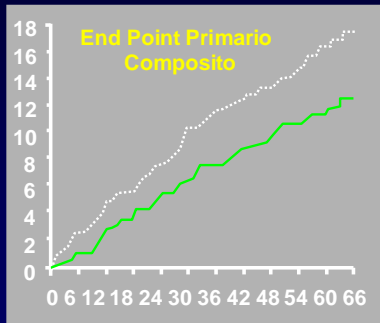
Stevo Julius, MD

*JAMA. 2002;288:1491-1498*

# LIFE: Effetti del losartan sull'end point primario. Sottoanalisi in 1326 pazienti con ipertensione sistolica isolata



# LIFE: Effetti del losartan sui singoli end point. Sottoanalisi in 1326 pazienti con ipertensione sistolica isolata



## 18. Monotherapy versus combination therapy

- Regardless of the drug employed, monotherapy allows to achieve BP target in only a limited number of hypertensive patients.
- Use of more than one agent is necessary to achieve target BP in the majority of patients. A vast array of effective and well tolerated combinations is available.
- Initial treatment can make use of monotherapy or

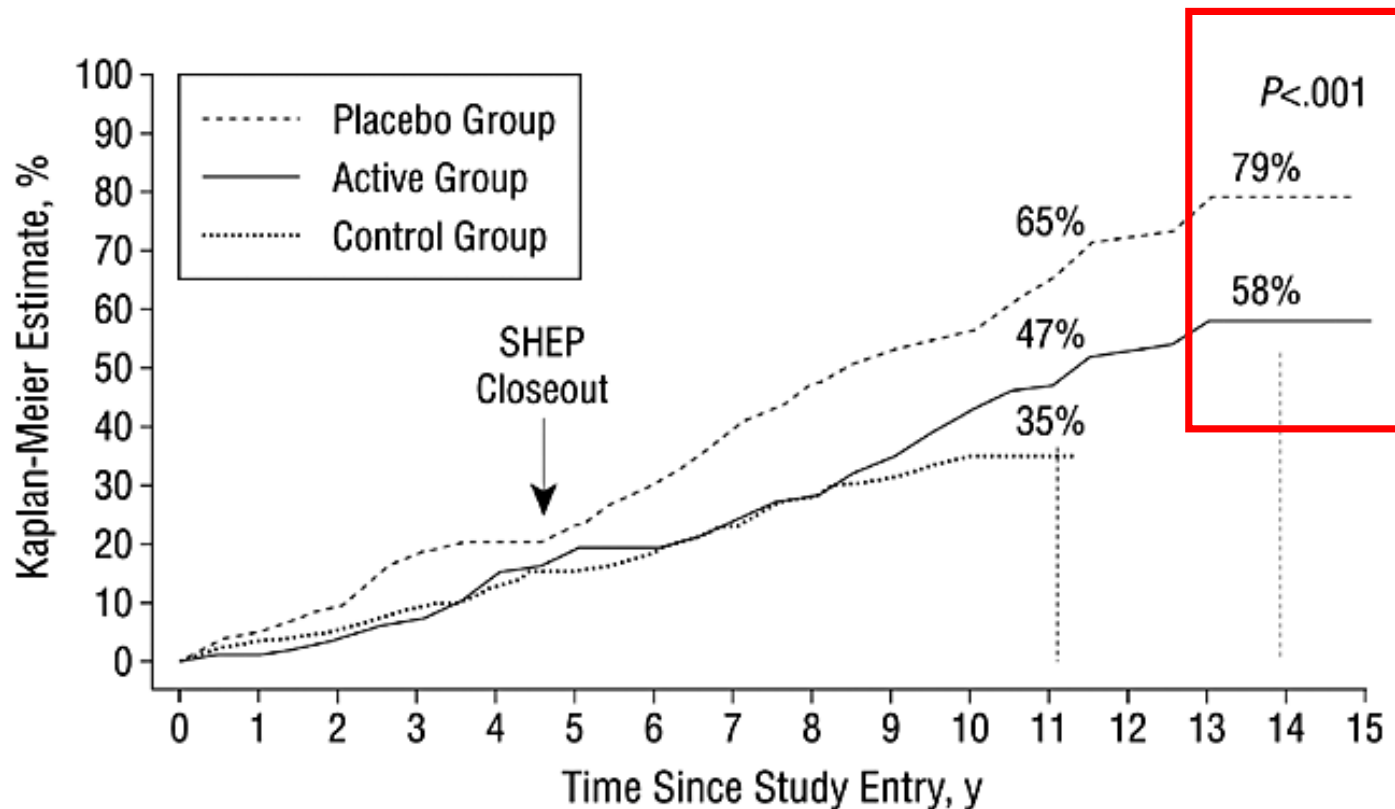
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• In uncomplicated hypertensives and in the elderly, antihypertensive therapy should normally be initiated gradually. In higher risk hypertensives, goal BP should be achieved more promptly, which favours initial combination therapy and quicker adjustment of doses.

- 
- In several patients BP control is not achieved by two drugs, and a combination of three or more drugs is required.
  - In uncomplicated hypertensives and in the elderly, antihypertensive therapy should normally be initiated gradually. In higher risk hypertensives, goal BP should be achieved more promptly, which favours initial combination therapy and quicker adjustment of doses.

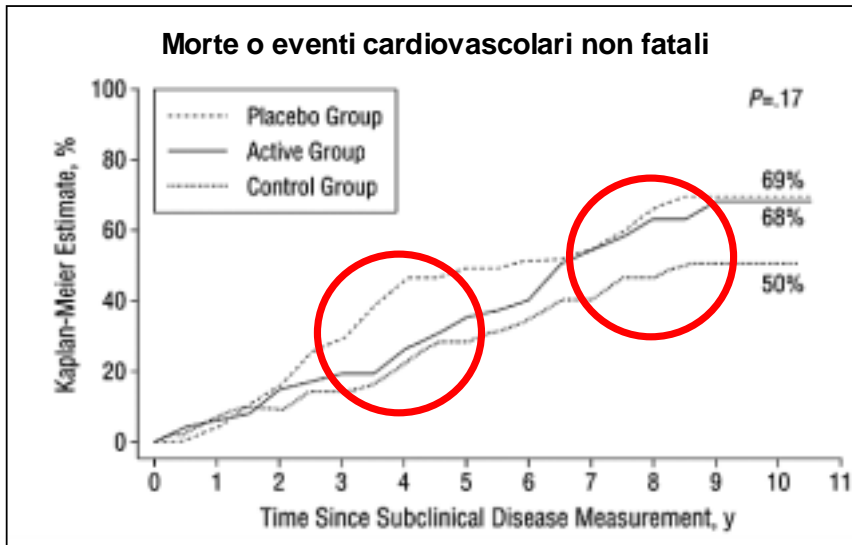
# Extent of Cardiovascular Risk Reduction Associated With Treatment of Isolated Systolic Hypertension

Sutton-Tyrrel K, *Arch Intern Med*, Dec 2003

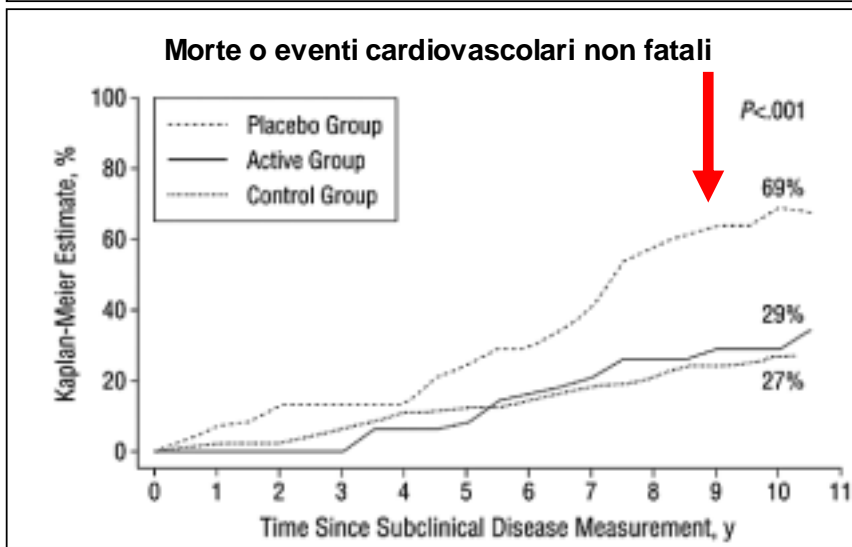


**Eventi cardiovascolari fatali e non fatali**

# Extent of Cardiovascular Risk Reduction Associated With Treatment of Isolated Systolic Hypertension



Pazienti **con** malattia aterosclerotica (clinica o subclinica)



Pazienti **senza** malattia aterosclerotica (clinica o subclinica)

## **Effects of immediate versus delayed antihypertensive therapy on outcome in the Systolic Hypertension in Europe Trial**

Jan A. Staessen<sup>a</sup>, Lutgarde Thijs<sup>a</sup>, Robert Fagard<sup>a</sup>, Hilde Celis<sup>a</sup>,  
Willem H. Birkenhäger<sup>b</sup>, Christopher J. Bulpitt<sup>c</sup>, Peter W. de Leeuw<sup>d</sup>,  
Astrid E. Fletcher<sup>e</sup>, Françoise Forette<sup>f</sup>, Gastone Leonetti<sup>g</sup>,  
Patricia McCormack<sup>h</sup>, Choudomir Nachev<sup>i</sup>, Eoin O'Brien<sup>h</sup>, José L. Rodicio<sup>j</sup>,  
Joseph Rosenfeld<sup>k</sup>, Cinzia Sarti<sup>l</sup>, Jaakko Tuomilehto<sup>l</sup>, John Webster<sup>m</sup>,  
Yair Yodfat<sup>n</sup> and Alberto Zanchetti<sup>g</sup>, for the Systolic Hypertension in Europe  
(Syst-Eur) Trial Investigators

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***Conclusions*** Antihypertensive treatment can achieve blood pressure control in most older patients with isolated systolic hypertension. Immediate compared with delayed treatment prevented 17 strokes or 25 major cardiovascular events per 1000 patients followed up for 6 years. These findings underscore the necessity of early treatment of isolated systolic hypertension..

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## Editorial

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# Overcome Clinical Inertia to Control Systolic Blood Pressure

*Patrick J. O'Connor, MD, PhD  
Healthpartners Research Foundation  
PO Box 1524  
Minneapolis, MN, 55440-1524  
(E-mail: [patrick.j.oconnor@healthpartners.com](mailto:patrick.j.oconnor@healthpartners.com))*

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ARCH INTERN MED: VOL 163, DECEMBER 22, 2003

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## Editorial

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# Overcome Clinical Inertia to Control Systolic Blood Pressure

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### 13. Goals of treatment

- In hypertensive patients, the primary goal of treatment is to achieve maximum reduction in the long-term total risk of CV disease.
- Despite use of combination treatment, reducing systolic BP to  $< 140$  mmHg may be difficult and more so if the target is a reduction to  $< 130$  mmHg. Additional difficulties should be expected in the elderly, in patients with diabetes, and in general, in patients with CV damage.

# Systolic Hypertension in Older Persons

Sarwat I. Chaudhry, MD

Harlan M. Krumholz, MD, SM

JoAnne Micale Foody, MD

## Conclusions

Treatment of SH in older patients with SBP of at least 160 mmHg is supported by strong evidences. The evidence available to support treatment of patients to the level of 140 mmHg or those with baseline SBP of 140 to 159 mmHg is less strong; thus, this treatment decisions should be more sensitive to patient preferences and tolerance of therapy.

# Results of the pilot study for the Hypertension in the Very Elderly Trial

Christopher J. Bulpitt<sup>a</sup>, Nigel S. Beckett<sup>a</sup>, Jonathan Cooke<sup>a</sup>,  
Dan L. Dumitrascu<sup>b</sup>, Blas Gil-Extremuera<sup>c</sup>, Choudomir Nachev<sup>d</sup>, Maria Nunes<sup>a</sup>,  
Ruth Peters<sup>a</sup>, Jan A. Staessen<sup>e</sup> and Lut Thijs<sup>e</sup>, on behalf of the Hypertension in  
the Very Elderly Trial (HYVET) Working Group

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- Exclusion Criteria**
- Serum Creatinine > 150  $\mu\text{mol}$**
  - Accelerated Hypertension**
  - Congestive Heart Failure**
  - Inability to stand**
  - CAD**
  - Gout**
  - Renal Artery stenosis**
  - Dementia**
  - Condition expected to limit survival**

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Paziente Hyvet

L.M. anni 90



# SHEP – Screening degli eleggibili

## Popolazione generale



- Et :  $\geq 60$  anni
- # sottoposti a screening:  
447291
- % disabili BADL  $\approx 10\%$
- % deficit cognitivo  $\approx 6\%$

## Casistica



- Et  media: 72 anni
- # arruolati:  
4736 (1.1%)
- % disabili BADL: 5%
- % deficit cognitivo:  $< 1\%$

*SHEP JAMA 1991;265:3255*

# Ipertensione dell'anziano: *Outcome*

1. Mortalità
2. Morbilità
3. Qualità di vita

4. Disabilità
5. Deterioramento cognitivo
6. Istituzionalizzazione

# Iperensione dell'anziano

## Come trattare il paziente fragile

Initial doses and subsequent dose titration should be more gradual because of a greater chance of undesirable effects, especially in very old and frail subjects.



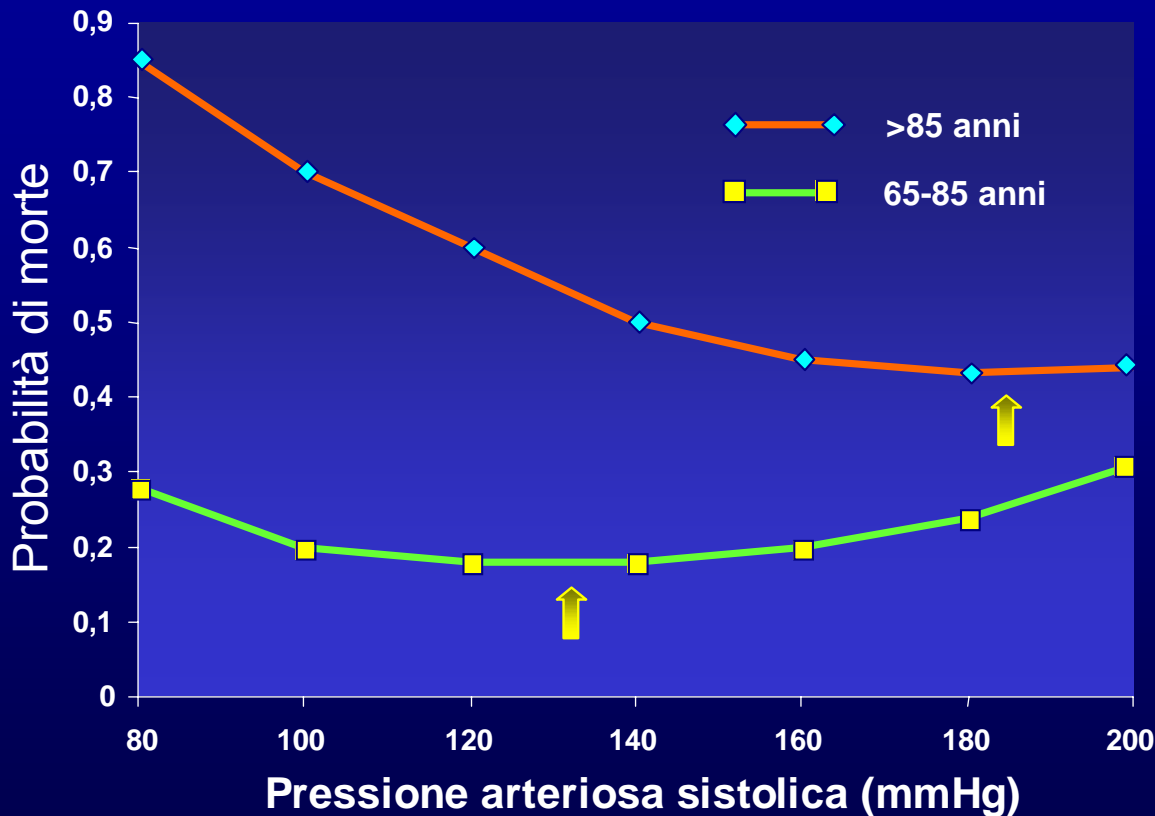
# Iperensione dell'anziano

## L'ultraottantenne

In subjects aged 80 years and over, evidence for benefits of antihypertensive treatment is as yet inconclusive. However, there is no reason for interrupting a successful and well tolerated therapy when a patient reaches 80 years of age.



## Mortalità e pressione arteriosa nell'*oldest old*



Studio di popolazione  
longitudinale (n=12802)

≥ 85 anni: n=1088  
(368M/720 F)

*"...in men aged 85 and older,  
higher systolic blood pressure  
is associated with better  
survival".*

*Satish S, JAGS 2001*

# Blood Pressure and Survival in the Oldest Old

Daniel J. Oates, MD, MSc,<sup>\*†</sup> Dan R. Berlowitz, MD, MPH,<sup>‡||</sup> Mark E. Glickman, PhD,<sup>‡||</sup>  
Rebecca A. Silliman, MD, PhD,<sup>\*†§</sup> and Ann M. Borzecki, MD, MPH<sup>‡||</sup>

## Mortality

Table 2. Results of Stepwise Stratified Blood Pressure (BP) Models

BP mmHg	Hazard Ratio (95% Confidence Interval) Per 10-Point Increase in BP
Full sample	
Systolic	
< 140 <sup>*</sup>	0.84 (0.78–0.89)
≥ 140 <sup>†</sup>	1.01 (0.98–1.05)
Diastolic	
< 90 <sup>*</sup>	0.91 (0.87–0.96)
≥ 90 <sup>‡</sup>	0.89 (0.67–1.19)
Health-related quality of life subsample	
Systolic	
< 140 <sup>§</sup>	0.82 (0.74–0.91)
≥ 140 <sup>  </sup>	1.04 (0.98–1.10)
Diastolic	
< 90 <sup>¶</sup>	0.85 (0.78–0.92)
≥ 90 <sup>†</sup>	1.58 (1.00–2.45)

# CHE SUCCEDDE QUANDO IL GERIATRA LEGGE LE NUOVE LINEE GUIDA PER IL TRATTAMENTO DELL'IPERTENSIONE ARTERIOSA?

## Conclusioni

La capacità clinica del **Geriatra** di eseguire una corretta selezione dei pazienti è la chiave di volta per **trattare correttamente** l'iperteso anziano