5° CONVEGNO NAZIONALE SUI CENTRI DIURNI ALZHEIMER

6 - 7 Giugno 2014

Auditorium
Via Panconi, 14 - Pistoia

Terapia antiipertensiva nell'anziano con demenza: tutto chiaro?
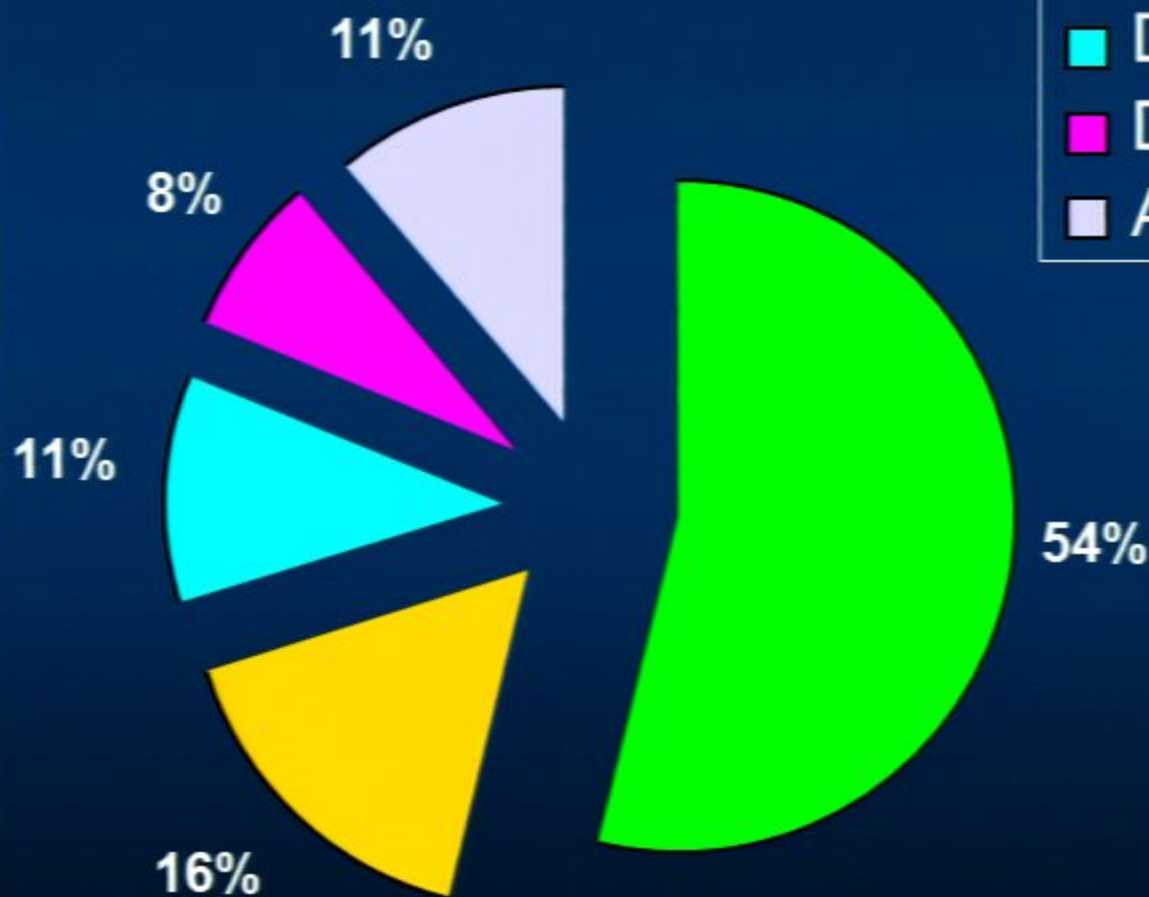
Andrea Ungar, MD, PhD, FESC

Syncope Unit, Hypertension Centre
Geriatric Cardiology and Medicine
University of Florence, Italy

Principali tipi di demenza nell'anziano

Legend:
- 🟩 Malattia di Alzheimer
- 🟨 Demenza Vascolare
- 🟦 Demenza a corpi di Lewy
- 🟪 Demenza fronto-temporale
- ⬜ Altre

Pie chart values:
- Malattia di Alzheimer: 54%
- Demenza Vascolare: 16%
- Demenza a corpi di Lewy: 11%
- Demenza fronto-temporale: 8%
- Altre: 11%

Lobo A et al., Neurology, 2000
Stevens T, Br J Psychatry, 2002
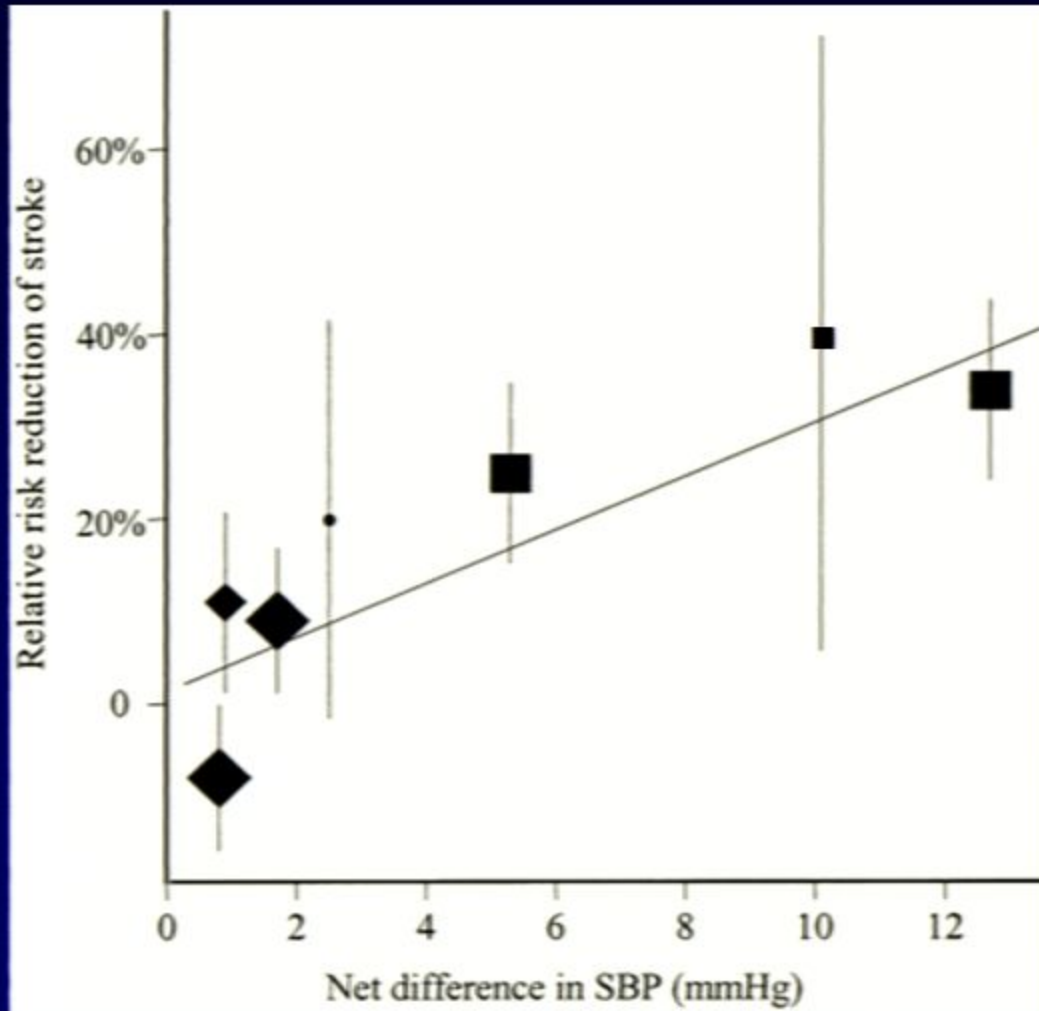
Vascular Cognitive Impairment (VCI) *

Include:

- Vascular Dementia (VaD)

- Cognitive Impairment, No Dementia (Vascular CIND) **

- Alzheimer Disease (AD) with a vascular component (mixed AD)

* *Hachinski et al., Neurology, 1993*

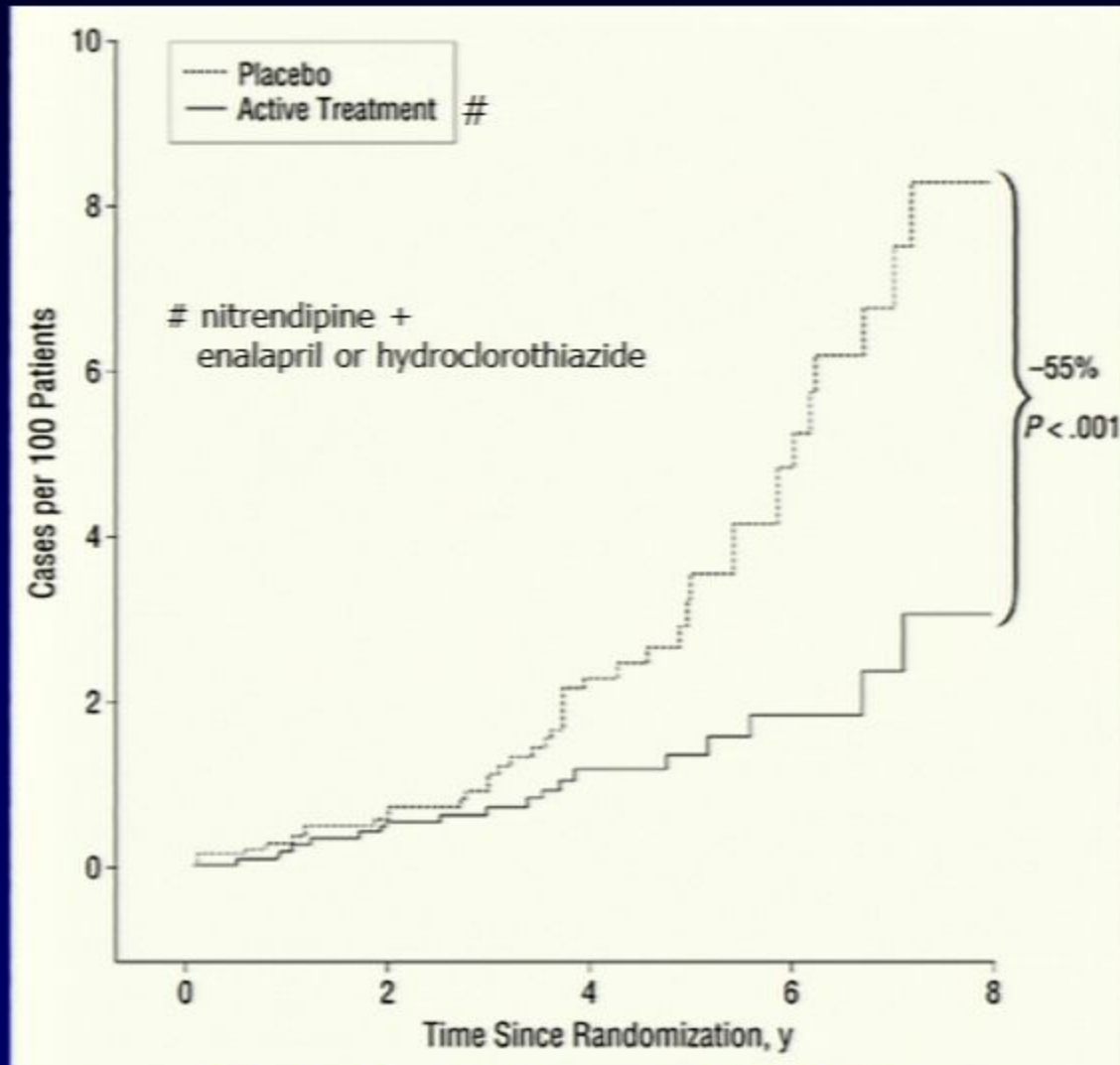** *Rockwood et al., Neurology, 2000*

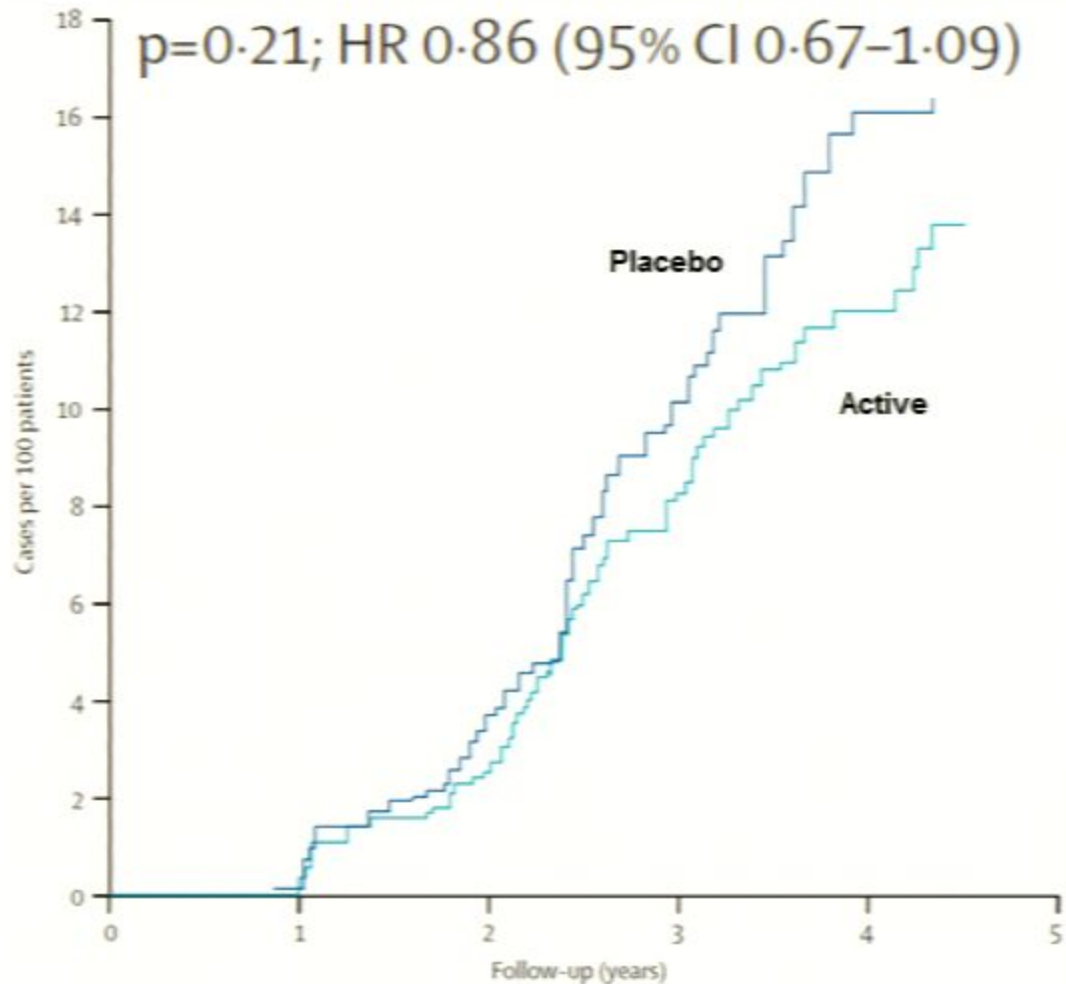# Pressione Arteriosa Sistolica
e rischio di ictus – **RCT**

Syst-Eur: incidenza di nuova demenza

- RCT; 4,695 anziani con ISH; follow-up 8 anni
- Outcome primario: ictus

Forette F et al., *Lancet* 2002; 162: 2046

Trattamento antiipertensivo e demenza: HYVET-Cog (2)

p=0·21; HR 0·86 (95% CI 0·67–1·09)

Placebo

Active

Cases per 100 patients

Follow-up (years)

Casi di demenza:
✓ 126 nel gruppo trattamento (78 AD)
✓ 137 nel gruppo placebo (86 AD)

Trattamento antiipertensivo e demenza: meta-analisi

Meta-analisi dei dati HYVET-Cog con quelli di PROGRESS, Syst-Eur, SHEP

	Active (N/n)	Placebo (N/n)		Hazard ratio (95% CI)
PROGRESS RR[12]	3051/193	3054/217		0·89 (0·74–1·07)
Syst-Eur RR[10]	1238/11	1180/21		0·50 (0·25–1·02)
SHEP RR[14]	2365/37	2371/44		0·84 (0·55–1·30)
HYVET RR	1687/126	1649/137		0·90 (0·71–1·13)
Combined (random)				0·87 (0·76–1·00)

Cochran Q=2·409; p=0·491

Test for overall effect; p=0·045

0·2   0·5   1·0   2·0

Favours treatment   Favours control

Prevenzione dei fattori di rischio vascolare

⬇

Riduzione delle lesioni vascolari cerebrali

⬇

Riduzione del rischio di VCI

Prevenzione dei fattori di rischio vascolare

↓

Riduzione delle lesioni vascolari cerebrali

↓

Riduzione del rischio di VCI

... riduzione del rischio di AD?

... riduzione dei casi totali di demenza?

Ipertensione arteriosa e neuropatologia tipo Alzheimer (1)

… al riscontro autoptico

Nell'Honolulu Asia Aging Study elevati valori pressori in età adulta sono correlati a:
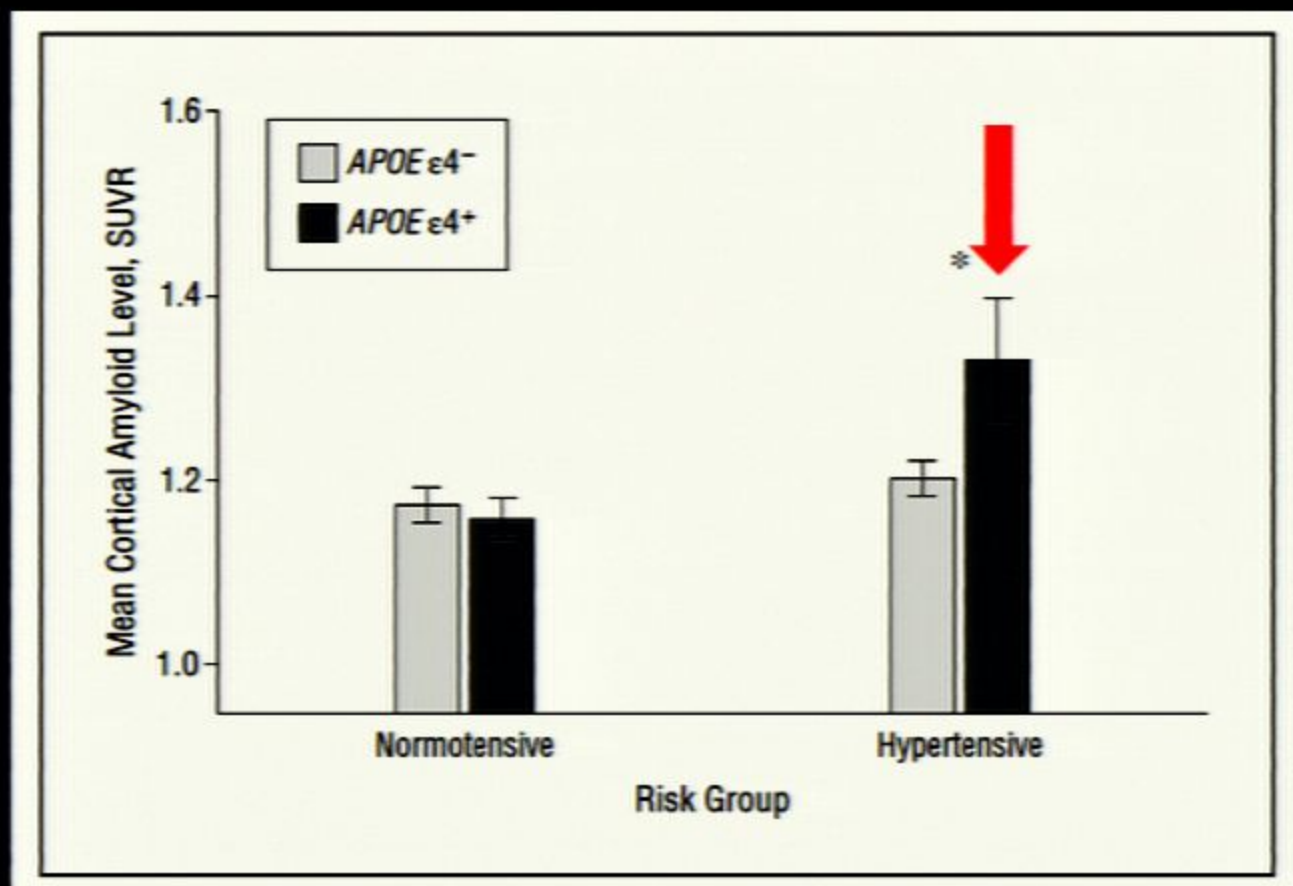
- maggior atrofia cerebrale
- maggior numero di placche neuritiche e grovigli neurofibrillari

Ipertensione arteriosa e neuropatologia tipo Alzheimer (2)

… all'esame in vivo !

118 soggetti (47-89 anni) senza deficit cognitivo sottoposti a

- PET con tracciante per amiloide cerebrale (florbetapir)

- ricerca allele ApoE $\varepsilon 4$ (FdR Alzheimer)

Rodrigue KM et al., JAMA Neurol, 2013

Fattori di rischio vascolare e Malattia di Alzheimer

✓ **Ipertensione arteriosa**

(Skoog et al., Lancet 1996; Kivipelto M et al., BMJ, 2001; Qiu C, Lancet Neurol, 2005)

✓ **Diabete mellito**

(Ott A et al., Neurology, 1999; Xu W, Diabetes, 2007)

✓ **Ipercolesterolemia**

(Solomon A et al., Neurology, 2007)

✓ **Obesità**

(Kivipelto M et al., Arch Neurol, 2005)

✓ **Iperomocisteinemia**

(Seshadri S et al., N Engl J Med, 2002; Haan MN, Am J Clin Nutr, 2007)

Ipertensione arteriosa e rischio di AD:
studio longitudinale a partire dall'età adulta

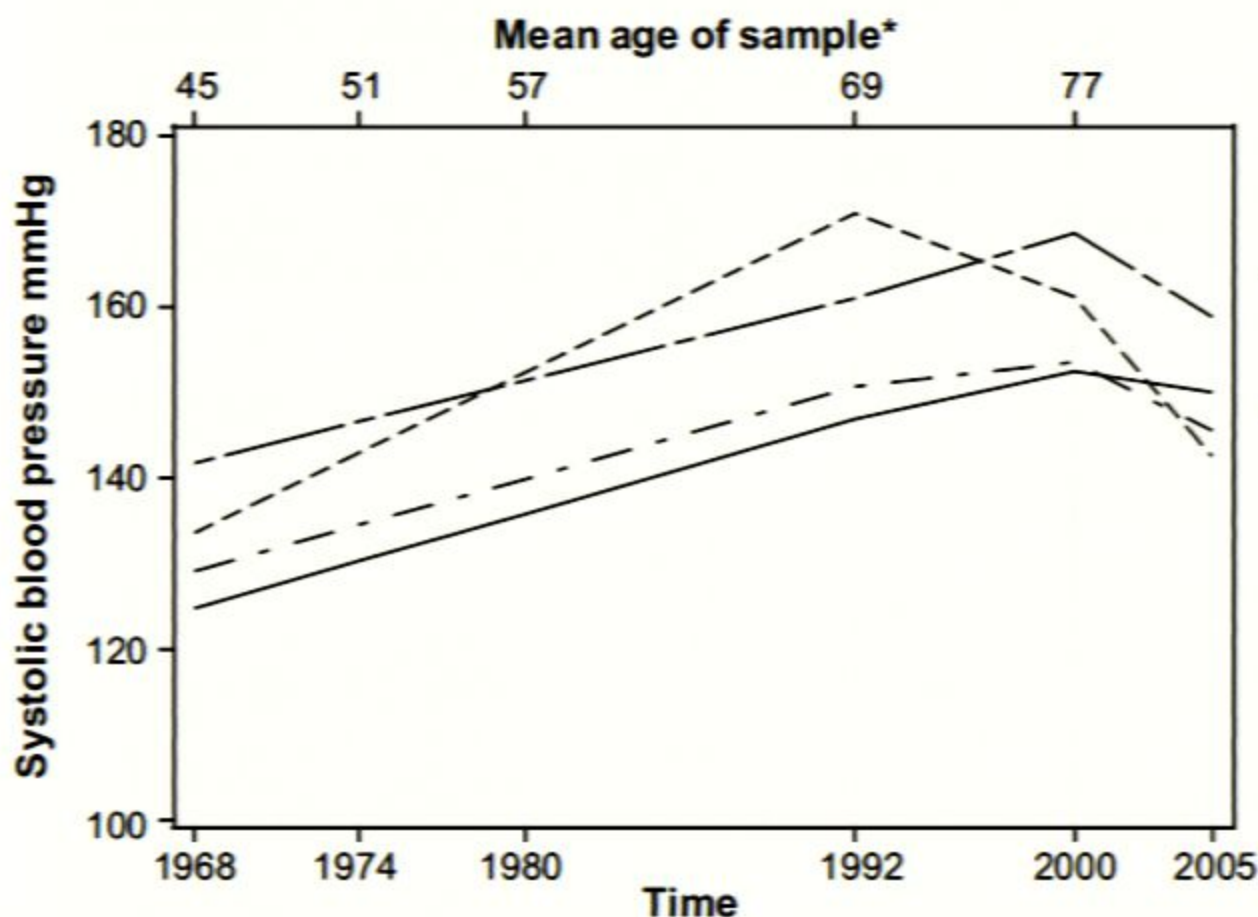Studio longitudinale retrospettivo su 1449 anziani.
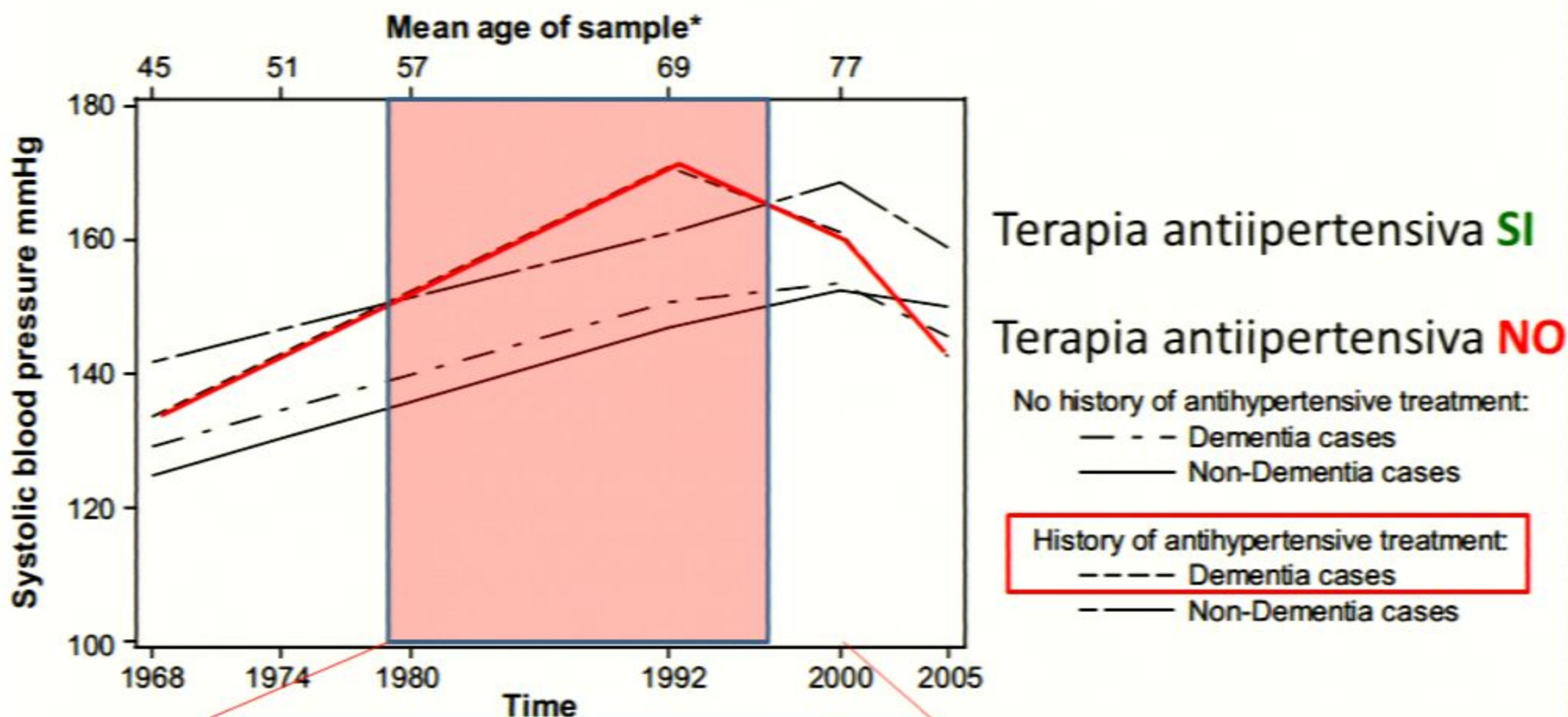Al follow-up (età 65-79 anni) diagnosi di AD
Follow-up medio: 21 anni

	OR (95% CI)
Pressione sistolica	
< 140 mmHg	1
140-159 mmHg	2.1 (0.8-5.0)
≥ 160 mmHg	2.8 (1.1-7.2)
Pressione diastolica	
<90 mmHg	1
90-94 mmHg	1.4 (0.6-3.5)
≥ 95 mmHg	1.7 (0.8-3.6)

Modello aggiustato per: età, BMI, scolarità, infarto miocardico e malattia cerebrovascolare, fumo, alcool

Andamento della pressione arteriosa nell'arco della vita e rischio di demenza

Terapia antiipertensiva **SI**

Terapia antiipertensiva **NO**

No history of antihypertensive treatment:
— - — Dementia cases
——— Non-Dementia cases

History of antihypertensive treatment:
- - - - Dementia cases
— - — Non-Dementia cases

Joas E et al., Hypertension, 2012

Andamento della pressione arteriosa nell'arco della vita e rischio di demenza

Joas E et al., Hypertension, 2012

Effetto dei FdR vascolare nelle diverse età della vita sul rischio di demenza: revisione sistematica

Midlife (45–65 years) risk factor assessment

	Odds ratio for dementia [a]	Estimated prevalence [b] (%)	Estimated population attributable risk (%)
Diabetes	2.2 (4)	2–8	2–9
Hypertension	2.3 (3)	30–40	28–36
Dyslipidaemia	2.1 (3)	20–25	18–22
Obesity	2.0 (3)	35–40	26–29

Late life (>65 years) risk factor assessment

	Odds ratio for dementia	Estimated prevalence (%)	Estimated population attributable risk
Diabetes	1.6 (10)	10–15	6–8%
Hypertension	1.1 (7)	55–80	5–7%
Dyslipidaemia	1.0 (4)	10–20	≤0
Obesity	0.8 (2)	25–30	≤0

Effetto dei FdR vascolare nelle diverse età della vita sul rischio di demenza: revisione sistematica

Midlife (45–65 years) risk factor assessment

	Odds ratio for dementia [a]	Estimated prevalence [b] (%)	Estimated population attributable risk (%)
Diabetes	2.2 (4)	2–8	2–9
Hypertension	2.3 (3)	30–40	28–36
Dyslipidaemia	2.1 (3)	20–25	18–22
Obesity	2.0 (3)	35–40	26–29

Late life (>65 years) risk factor assessment

	Odds ratio for dementia	Estimated prevalence (%)	Estimated population attributable risk
Diabetes	1.6 (10)	10–15	6–8%
Hypertension	1.1 (7)	55–80	5–7%
Dyslipidaemia	1.0 (4)	10–20	≤0
Obesity	0.8 (2)	25–30	≤0

Kloppenborg et al., Eur J Pharmacol, 2008

Effetto dei FdR vascolare nelle diverse età della vita sul rischio di demenza: revisione sistematica

Midlife (45–65 years) risk factor assessment

	Odds ratio for dementia [a]	Estimated prevalence [b] (%)	Estimated population attributable risk (%)
Diabetes	2.2 (4)	2–8	2–9
Hypertension	2.3 (3)	30–40	28–36
Dyslipidaemia	2.1 (3)	20–25	18–22
Obesity	2.0 (3)	35–40	26–29

Late life (>65 years) risk factor assessment

	Odds ratio for dementia	Estimated prevalence (%)	Estimated population attributable risk
Diabetes	1.6 (10)	10–15	6–8%
Hypertension	1.1 (7)	55–80	5–7%
Dyslipidaemia	1.0 (4)	10–20	≤0
Obesity	0.8 (2)	25–30	≤0

Kloppenborg et al., Eur J Pharmacol, 2008

Effetto dei FdR vascolare nelle diverse età della vita sul rischio di demenza: revisione sistematica

Midlife (45–65 years) risk factor assessment

	Odds ratio for dementia [a]	Estimated prevalence [b] (%)	Estimated population attributable risk (%)
Diabetes	2.2 (4)	2–8	2–9
Hypertension	2.3 (3)	30–40	28–36
Dyslipidaemia	2.1 (3)	20–25	18–22
Obesity	2.0 (3)	35–40	26–29

Late life (>65 years) risk factor assessment

	Odds ratio for dementia	Estimated prevalence (%)	Estimated population attributable risk
Diabetes	1.6 (10)	10–15	6–8%
Hypertension	1.1 (7)	55–80	5–7%
Dyslipidaemia	1.0 (4)	10–20	≤0
Obesity	0.8 (2)	25–30	≤0

3.7.5 Brain

Hypertension, beyond its well-known effect on the occurrence of clinical stroke, is also associated with the risk of asymptomatic brain damage noticed on cerebral MRI, in particular in elderly individuals.[250,251] The most common types of brain lesions are w_____all e_____le s_____re small and deep (lacunar infarctions) and the frequency of which varies between 10% and 30%.[252] Another type of lesion, more recently identified, are microbleeds, seen in about 5% of individuals. White matter hyperintensities and silent infarcts are associated with an increased risk of stroke, cognitive decline and dementia.[250,252–254] In hypertensive patients without overt CVD,

White matter hyperintensities and silent infarcts are associated with an increased risk of stroke, cognitive decline and dementia.

2013 ESH/ESC Guidelines for the management of arterial hypertension

6.10.3 Cognitive dysfunction and white matter lesions

The importance of hypertension in predicting vascular dementia has been confirmed

2013 ESH/ESC Guidelines for the management of arterial hypertension

6.10.3 Cognitive dysfunction and white matter lesions

The importance of hypertension in predicting vascular dementia has been confirmed

.... but evidence on the effects of lowering of BP is scanty and confusing

2013 ESH/ESC Guidelines for the management of arterial hypertension

6.10.3 Cognitive dysfunction and white matter lesions

The importance of hypertension in predicting vascular dementia has been confirmed

.... but evidence on the effects of lowering of BP is scanty and confusing

Little information was added by a cognition sub-study of HYVET in hypertensive octogenarians because of the inadequate duration of follow-up showed very limited benefit

5° CONVEGNO NAZIONALE SUI CENTRI DIURNI ALZHEIMER

Il trattamento antiipertensivo riduce il rischio di ictus e «forse» anche di decadimento cognitivo

I problemi nascono quando il paziente non è più un adulto da proteggere ma un paziente anziano, magari «fragile e con decadimento cognitivo»

2013 ESH/ESC 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)

Authors/Task Force Members: Giuseppe Mancia (Chairperson) (Italy)*, Robert Fagard (Chairperson) (Belgium)*, Krzysztof Narkiewicz (Section co-ordinator) (Poland), Josep Redon (Section co-ordinator) (Spain), Alberto Zanchetti (Section co-ordinator) (Italy), Michael Böhm (Germany), Thierry Christiaens (Belgium), Renata Cifkova (Czech Republic), Guy De Backer (Belgium), Anna Dominiczak (UK), Maurizio Galderisi (Italy), Diederick E. Grobbee (Netherlands), Tiny Jaarsma (Sweden), Paulus Kirchhof (Germany/UK), Sverre E. Kjeldsen (Norway), Stéphane Laurent (France), Athanasios J. Manolis (Greece), Peter M. Nilsson (Sweden), Luis Miguel Ruilope (Spain), Roland E. Schmieder (Germany), Per Anton Sirnes (Norway), Peter Sleight (UK), Margus Viigimaa (Estonia), Bernard Waeber (Switzerland), Faiez Zannad (France)

SBP between 140 and 150 mmHg

"good physical and mental condition"

Antihypertensive treatment strategies in the elderly

Recommendations	Class[a]	Level[b]	Ref.[c]
In elderly hypertensives with SBP ≥160 mmHg there is solid evidence to recommend reducing SBP to between 150 and 140 mmHg.	I	A	141, 265
In fit elderly patients <80 years old antihypertensive treatment may be considered at SBP values ≥140 mmHg with a target SBP <140 mmHg if treatment is well tolerated.	IIb	C	-
In individuals older than 80 years with an initial SBP ≥160 mmHg it is recommended to reduce SBP to between 150 and 140 mmHg, provided they are in good physical and mental conditions.	I	B	287
In frail elderly patients, it is recommended to leave decisions on antihypertensive therapy to the treating physician, and based on monitoring of the clinical effects of treatment.	I	C	-
Continuation of well-tolerated antihypertensive treatment should be considered when a treated individual becomes octogenarian.	IIa	C	-
All hypertensive agents are recommended and can be used in the elderly, although diuretics and calcium antagonists may be preferred in isolated systolic hypertension.	I	A	444, 449, 451, 452

SBP between 140 and 150 mmHg

"good physical and mental condition"

"FIT" elderly patient

Antihypertensive treatment strategies in the elderly

Recommendations	Class[a]	Level[b]	Ref.[c]
In elderly hypertensives with SBP ≥160 mmHg there is solid evidence to recommend reducing SBP to between 150 and 140 mmHg.	I	A	141, 265
In fit elderly patients <80 years old antihypertensive treatment may be considered at SBP values ≥140 mmHg with a target SBP <140 mmHg if treatment is well tolerated.	IIb	C	-
In individuals older than 80 years with an initial SBP ≥160 mmHg it is recommended to reduce SBP to between 150 and 140 mmHg, provided they are in good physical and mental conditions.	I	B	287
In frail elderly patients, it is recommended to leave decisions on antihypertensive therapy to the treating physician, and based on monitoring of the clinical effects of treatment.	I	C	-
Continuation of well-tolerated antihypertensive treatment should be considered when a treated individual becomes octogenarian.	IIa	C	-
All hypertensive agents are recommended and can be used in the elderly, although diuretics and calcium antagonists may be preferred in isolated systolic hypertension.	I	A	444, 449, 451, 452

SBP between 140 and 150 mmHg

"good physical and mental condition"

"FIT" elderly patient

Antihypertensive treatment strategies in the elderly

Recommendations	Class [a]	Level [b]	Ref. [c]
In elderly hypertensives with SBP ≥160 mmHg there is solid evidence to recommend reducing SBP to between 150 and 140 mmHg.	I	A	141, 265
In fit elderly patients <80 years old antihypertensive treatment may be considered at SBP values ≥140 mmHg with a target SBP <140 mmHg if treatment is well tolerated.	IIb	C	-
In individuals older than 80 years with an initial SBP ≥160 mmHg it is recommended to reduce SBP to between provided th physical and	I	B	297
In frail elderly patients, it is recommended to leave decisions on antihypertensive therapy to the treating physician, and based on monitoring of the clinical effects of treatment.	I	C	-
Continuation of well-tolerated antihypertensive treatment should be considered when a treated individual becomes octogenarian.	IIa	C	-
All hypertensive agents are recommended and can be used in the elderly, although diuretics and calcium antagonists may be preferred in isolated systolic hypertension.	I	A	444, 449, 451, 452

Dementia??

Gait Speed and Survival in Older Adults

Stephanie Studenski, MD, MPH

Subashan Perera, PhD

Kushang Patel, PhD

Caterina Rosano, MD, PhD

Kimberly Faulkner, PhD

Marco Inzitari, MD, PhD

Jennifer Brach, PhD

Julie Chandler, PhD

Peggy Cawthon, PhD

Elizabeth Barrett Connor, MD

Michael Nevitt, PhD

Marjolein Visser, PhD

Stephen Kritchevsky, PhD

Stefania Badinelli, MD

Tamara Harris, MD

Anne B. Newman, MD

Jane Cauley, PhD

Luigi Ferrucci, MD, PhD

Jack Guralnik, MD, PhD

Context Survival estimates help individualize goals of care for geriatric patients, but life tables fail to account for the great variability in survival. Physical performance measures, such as gait speed, might help account for variability, allowing clinicians to make more individualized estimates.

Objective To evaluate the relationship between gait speed and survival.
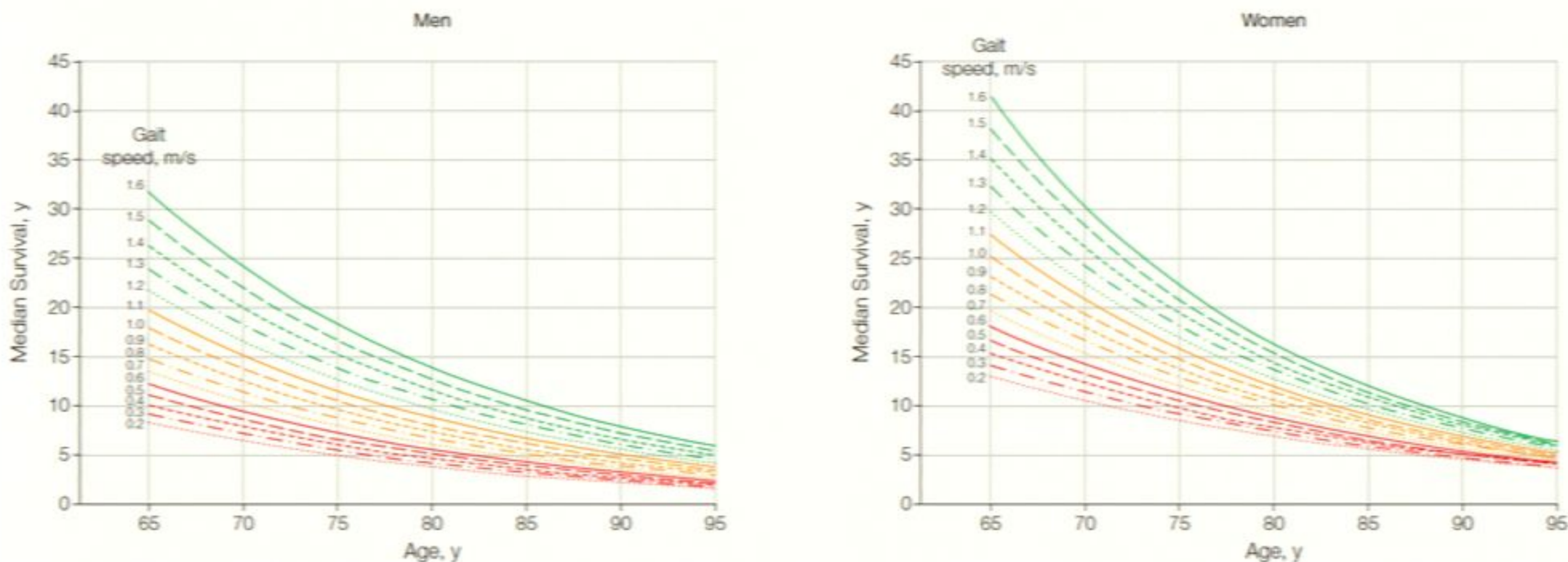
Design, Setting, and Participants Pooled analysis of 9 cohort studies (collected between 1986 and 2000), using individual data from 34 485 community-dwelling older adults aged 65 years or older with baseline gait speed data, followed up for 6 to 21 years. Participants were a mean (SD) age of 73.5 (5.9) years; 59.6%, women; and 79.8%, white; and had a mean (SD) gait speed of 0.92 (0.27) m/s.

Main Outcome Measures Survival rates and life expectancy.

Results There were 17 528 deaths; the overall 5-year survival rate was 84.8% (confidence interval [CI], 79.6%-88.8%) and 10-year survival rate was 59.7% (95% CI, 46.5%-70.6%). Gait speed was associated with survival in all studies (pooled hazard ratio per 0.1 m/s, 0.88; 95% CI, 0.87-0.90; $P < .001$). Survival increased across the full range of gait speeds, with significant increments per 0.1 m/s. At age 75, predicted 10-year survival across the range of gait speeds ranged from 19% to 87% in men and from 35% to 91% in women. Predicted survival based on age, sex, and gait speed was as accurate as predicted based on age, sex, use of mobility aids, and self-reported function or as age, sex, chronic conditions, smoking history, blood pressure, body mass index, and hospitalization.

Conclusion In this pooled analysis of individual data from 9 selected cohorts, gait speed was associated with survival in older adults.

Gait Speed and Survival in Older Adults

Stefania Bandinelli, MD

Tamara Harris, MD

Anne B. Newman, MD

Jane Cauley, PhD

Luigi Ferrucci, MD, PhD

Jack Guralnik, MD, PhD

en. Predicted survival based on age, sex, and gait speed was as accurate as predicted based on age, sex, use of mobility aids, and self-reported function or as age, sex, chronic conditions, smoking history, blood pressure, body mass index, and hospitalization.

Conclusion In this pooled analysis of individual data from 9 selected cohorts, gait speed was associated with survival in older adults.

Rethinking the Association of High Blood Pressure With Mortality in Elderly Adults

The Impact of Frailty

Michelle C. Odden, PhD; Carmen A. Peralta, MD, MAS; Mary N. Haan, DrPH; Kenneth E. Covinsky, MD, MPH

Background: The association of hypertension and mortality is attenuated in elderly adults. Walking speed, as a measure of frailty, may identify which elderly adults are most at risk for the adverse effects of hypertension. We hypothesized that elevated blood pressure (BP) would be associated with a greater risk of mortality in faster-, but not slower-, walking older adults.

Methods: Participants included 2340 persons 65 years and older in the National Health and Nutrition Examination Survey, 1999-2000 and 2001-2002. Mortality data were linked to death certificates in the National Death Index. Walking speed was measured over a 20-ft (6 m) walk and classified as faster ($\geq$0.8 m/s [n=1307]), slower (n=790), or incomplete (n=243). Potential confounders included age, sex, race, survey year, lifestyle and physiologic variables, health conditions, and antihypertensive medication use.

Results: Among the participants, there were 589 deaths through December 31, 2006. The association between BP and mortality varied by walking speed. Among faster walkers, those with elevated systolic BP ($\geq$140 mm Hg) had a greater adjusted risk of mortality compared with those without (hazard ratio [HR], 1.35; 95% CI, 1.03-1.77). Among slower walkers, neither elevated systolic nor diastolic BP ($\geq$90 mm Hg) was associated with mortality. In participants who did not complete the walk test, elevated BP was strongly and independently associated with a lower risk of death: HR, 0.38; 95% CI, 0.23-0.62 (systolic); and HR, 0.10; 95% CI, 0.01-0.81 (diastolic).

Conclusions: Walking speed could be a simple measure to identify elderly adults who are most at risk for adverse outcomes related to high BP.

National Health and Nutrition Examination Survey (NHANES)

- Campione di 2340 soggetti (età >65 anni)

- Dati di mortalità incrociati con i certificati di morte del National Death Index (NDI) dal 1999-2002 fino al 31 dicembre 2006; 589/2340 pazienti deceduti

- Cut-off velocità di cammino: >0,8 m/s. Cut-off PA: 140/90 mmHg.

- Fast walkers 56% - Slow walkers: 34%

- 243 partecipanti (10%) non hanno portato a termine il test del cammino

"21 safety exclusion, 22 participant refusal, 69 no time/came late/left early, 77 physical limitation, 13 ill/emergency, 36 other reasons, and 5 were missing an explanation."

Dati corretti per anno di arruolamento, età, sesso, razza nera, scolarità, fumo, colesterolemia, coronaropatia, scompenso cardiaco e ictus.

Table 3. The Association of Elevated BP and Mortality, Across Strata of Walking Speed, in NHANES Participants 65 Years and Older (1999-2002)

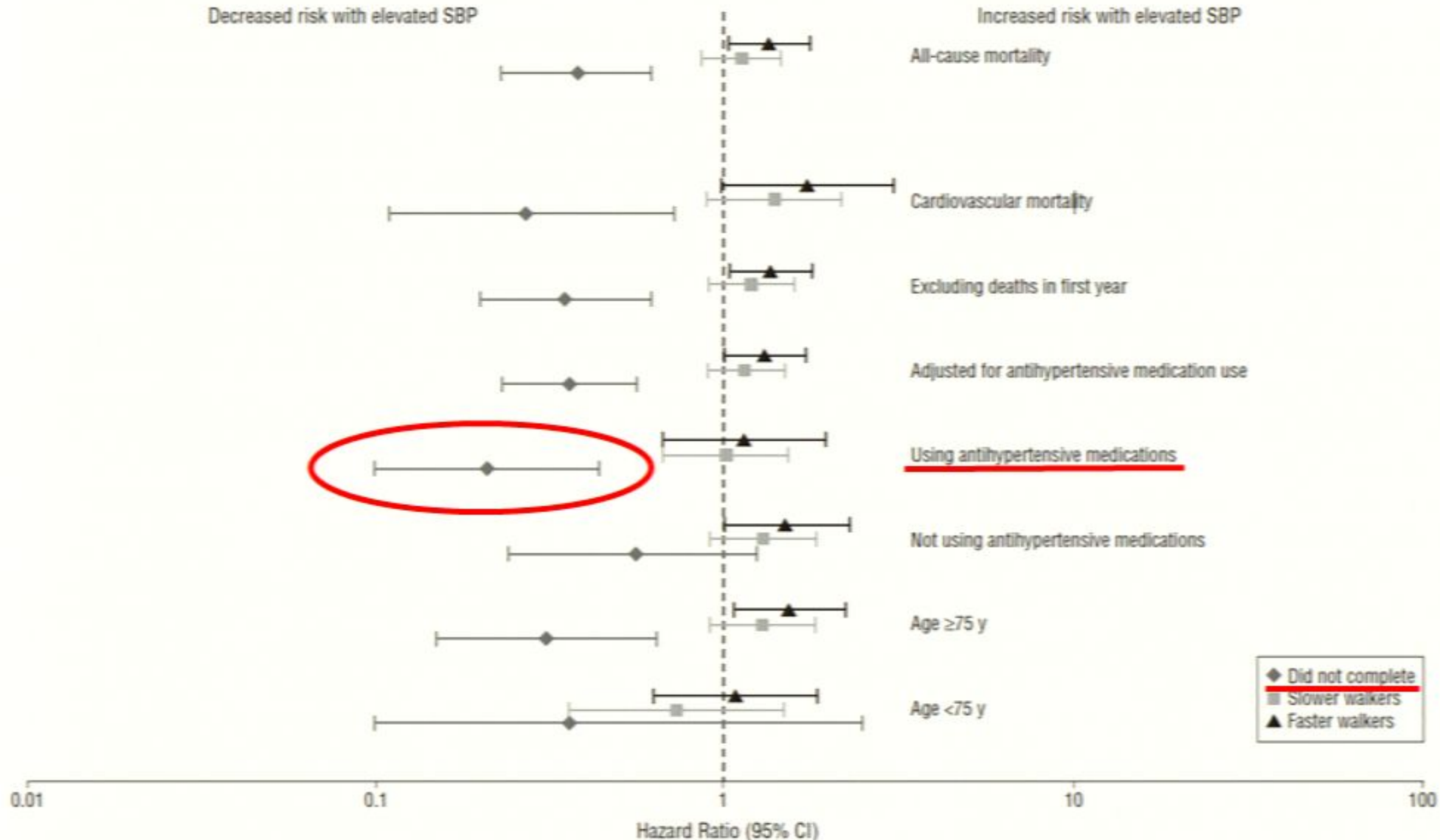| BP	Walking Speed		
	Faster ≥0.8 m/s (n = 1307)	Slower <0.8 m/s (n = 790)	Did Not Complete (n = 243)
Systolic BP			
Mortality rate per 1000 person-years			
≥140 mm Hg	28.1	72.1	62.4
<140 mm Hg[a]	20.4	67.6	133.5
Rate difference	7.7	4.5	-71.1
Unadjusted HR (95% CI)[b,c]	1.39 (0.98-1.96)	1.06 (0.84-1.34)	0.47 (0.29-0.73)
Adjusted HR (95% CI)[b,c]	1.35 (1.03-1.77)	1.12 (0.87-1.45)	0.38 (0.23-0.62)
Diastolic BP	**1,35, p=0,03**	**p= NS**	**0,38, p <0,001**
Mortality rate, per 1000 person-years			
≥90 mm Hg	24.0	42.5	8.4
<90 mm Hg[a]	23.5	71.3	95.6
Rate difference	0.5	-28.8	-87.2
Unadjusted HR (95% CI)[b,c]	1.01 (0.49-2.07)	0.60 (0.26-1.40)	0.09 (0.01-0.62)
Adjusted HR (95% CI)[b,c]	0.94 (0.38-2.28)	0.75 (0.32-1.75)	0.10 (0.01-0.81)

Analisi aggiustata per età, sesso, razza, scolarità, fumo, colesterolemia, coronaropatia, scompenso cardiaco, stroke

Decreased risk with elevated SBP — Increased risk with elevated SBP

- All-cause mortality
- Cardiovascular mortality
- Excluding deaths in first year
- Adjusted for antihypertensive medication use
- Using antihypertensive medications
- Not using antihypertensive medications
- Age ≥75 y
- Age <75 y

Legend:
- ◆ Did not complete
- ■ Slower walkers
- ▲ Faster walkers

Hazard Ratio (95% CI)

In chi non completa il test della marcia c'è una relazione inversa fra valori pressori e mortalità, specie nel sottogruppo di chi assume terapia anti-ipertensiva

ONLINE FIRST

The Risk of Hip Fracture After Initiating Antihypertensive Drugs in the Elderly

Debra A. Butt, MD, MSc, CCFP, FCFP; Muhammad Mamdani, PharmD, MPH; Peter C. Austin, PhD; Karen Tu, MD, MSc, CCFP, FCFP; Tara Gomes, MHSc; Richard H. Glazier, MD, MPH, CCFP, FCFP
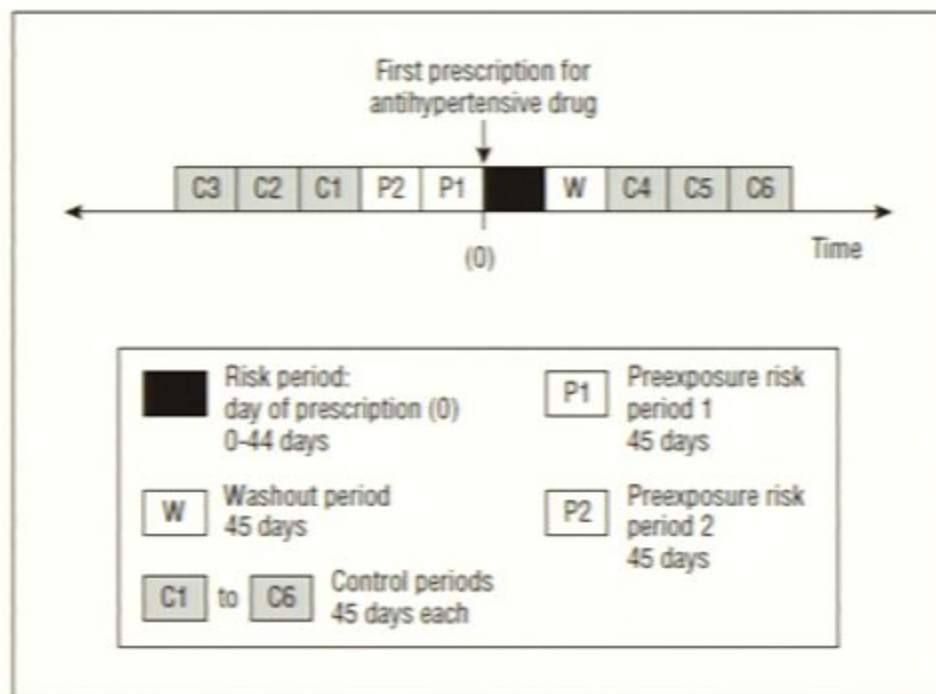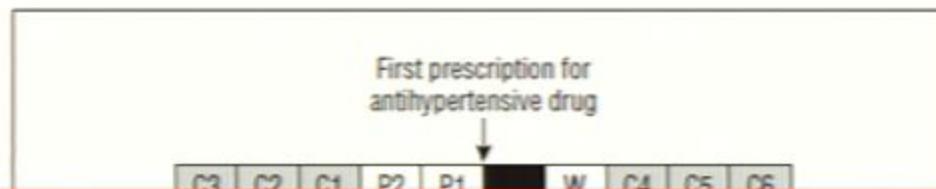
Figure 1. Antihypertensive drug use and hip fracture risk: self-controlled case series design. Time division for each patient is included to assess incidence of first acute hip fracture in relation to antihypertensive prescription. All patients in the analysis had at least 1 prescription for an antihypertensive drug and a single incident hip fracture.

Ontario Drug Benefit Program (ODBP) Database

301.591 anziani hanno iniziato una terapia anti-ipertensiva

1463 fratture di femore in un periodo di 10 anni

ONLINE FIRST

The Risk of Hip Fracture After Initiating Antihypertensive Drugs in the Elderly

Debra A. Butt, MD, MSc, CCFP, FCFP; Muhammad Mamdani, PharmD, MPH; Peter C. Austin, PhD; Karen Tu, MD, MSc, CCFP, FCFP; Tara Gomes, MHSc; Richard H. Glazier, MD, MPH, CCFP, FCFP

First prescription for
antihypertensive drug

| C3 | C2 | C1 | P2 | P1 | | W | C4 | C5 | C6 |

Ontario Drug Benefit Program

rischio di frattura di femore: +43%

(IRR, 1.43; 95% CI, 1.19-1.72)

nei primi 45 giorni dopo l'inizio della terapia anti-ipertensiva

incidence of first acute hip fracture in relation to antihypertensive prescription. All patients in the analysis had at least 1 prescription for an antihypertensive drug and a single incident hip fracture.

Causes of Syncope in general population (EGSYS 2) and in geriatric departments (GIS)

| | EGSYS 2* | GIS** | | |
	All (n=465)	65-75 years (n=71)	> 75 years (n=160)	p*
	n (%)	n (%)	n (%)	
Cardiac	74 (16)	8 (11.3)	26 (16.3)	ns
Neuromediated	309 (66)	44 (62)	58 (36.3)	0,001
Orthostatic	46 (10)	3 (4.2)	49 (30.5)	0,001
Cerebrovas		0	0	/
Drug Induc		3 (4.2)	8 (5)	ns
Unexplained	11 (2)	10 (14.1)	14 (8.8)	ns

In Older patients **Orthostatic Hypotension** must be evaluated in all patients

* <75 years vs >75 years GIS

* Brignole M et al, Eur Heart J. 2006; 27:76-82   ** Ungar A et al, JAGS 2006; 54: 1531-1536

Orthostatic Hypotension As Cause of Syncope in Patients Older Than 65 Years Admitted to Emergency Departments for Transient Loss of Consciousness

Chiara Mussi,[1] Andrea Ungar,[2] Gianfranco Salvioli,[1] Carlo Menozzi,[3] Angelo Bartoletti,[4] Franco Giada,[5] Alfonso Lagi,[6] Irene Ponassi,[7] Giuseppe Re,[8] Raffaello Furlan,[9] Roberto Maggi,[10] and Michele Brignole,[10] for the Evaluation of Guidelines in Syncope Study 2 Group*

Table 3. Multivariate Analysis

	OR	95% CI	p
Parkinson's disease	10.91	2.645–45.05	.001
Use of diuretics	3.73	1.23–11.28	.020
Use of nitrates	5.20	1.99–13.61	.001

Note: Other variables included in the model: age, sex, ischemic heart disease, hypertension, hypertensive heart disease, valvular heart disease, myocardiopathy, other cardiac diseases, diabetes, ischemic cerebral diseases, other neurological diseases, electrocardiographic findings, type of drugs, daily dosage. CI = confidence interval; OR = odds ratio.

Caratteristiche generali della popolazione

	Tutti (n=176)	<85 anni (n=96)	≥85 anni (n=80)	p
M/F	73/103	45/51	28/52	/
Età media	83±6	79±4	89±3	/
Tipi di demenza				
AD	31 (17.6%)	15 (15.6%)	16 (20.0%)	ns
VD	113 (64.2%)	58 (60.4%)	55 (68.8%)	ns
AD+VD	16 (9.1%)	11 (11.5%)	5 (6.3%)	ns
Media MMSE	17.5±6	18.6±5.0	16.1±6.0	0.003
Media ADL perse	2.9±2.1	2.6±2.1	3.1±2.0	ns
Media IADL perse	5.8±2.6	5.4±2.8	6.3±2.2	0.021
Numero episodi in anamnesi	4.3±3,2	4.3±3.3	4.2±3.1	ns

Caratteristiche generali della popolazione

	Tutti (n=176)	<85 anni (n=96)	≥85 anni (n=80)	p
M/F	73/103	45/51	28/52	/
Età media	83±6	79±4	89±3	/
Tipi di demenza				
AD	31 (17.6%)	15 (15.6%)	16 (20.0%)	ns
VD	**64.2%**	58 (60.4%)	55 (68.8%)	ns
AD+VD	16 (9.1%)	11 (11.5%)	5 (6.3%)	ns
Media MMSE	17.5±6	18.6±5.0	16.1±6.0	0.003
Media ADL perse	2.9±2.1	2.6±2.1	3.1±2.0	ns
Media IADL perse	5.8±2.6	5.4±2.8	6.3±2.2	0.021
Numero episodi in anamnesi	4.3±3,2	4.3±3.3	4.2±3.1	ns

Valutazione iniziale

	Tutti (n=176)	<85 anni (n=96)	≥85 anni (n=80)	p
Soffio carotideo	49 (28.2%)	32 (33.3%)	17 (21.3%)	ns
ECG patologico	53 (30.1%)	22 (22.9%)	31 (38.8%)	0.023
FA e flutter atriale	37 (21.0%)	14 (14.6%)	23 (28.8%)	0.023
BBS	10 (5.7%)	5 (5.2%)	5 (6.3%)	ns
IMA pregresso	10 (5.7%)	5 (5.2%)	5 (6.3%)	ns
Prove IO eseguite	136 (77.3%)	77 (80.2%)	59 (73.8%)	ns
Prove IO positive	74 (54.4%)	38 (49.4%)	36 (61.0%)	ns
MSC in clino eseguito	53 (30.1%)	30 (31.2%)	23 (28.8%)	ns
MSC in clino positivo	3 (5.7%)	3 (10.0%)	1 (4.3%)	ns

Valutazione iniziale

	Tutti (n=176)	<85 anni (n=96)	≥85 anni (n=80)	p
Soffio carotideo	49 (28.2%)	32 (33.3%)	17 (21.3%)	ns
ECG patologico	53 (30.1%)	22 (22.9%)	31 (38.8%)	0.023
FA e flutter atriale	37 (21.0%)	14 (14.6%)	23 (28.8%)	0.023
BBS	10 (5.7%)	5 (5.2%)	5 (6.3%)	ns
IMA pregresso	10 (5.7%)	5 (5.2%)	5 (6.3%)	ns
Prove IO eseguite	136 (77.3%)	77 (80.2%)	59 (73.8%)	ns
Prove IO positive	54.4%	38 (49.4%)	36 (61.0%)	ns
MSC in clino eseguito	53 (30.1%)	30 (31.2%)	23 (28.8%)	ns
MSC in clino positivo	3 (5.7%)	3 (10.0%)	1 (4.3%)	ns

FRAIL

elderly patient

Antihypertensive treatment strategies in the elderly

Recommendations	Class[a]	Level[b]	Ref.[c]
In elderly hypertensives with SBP ≥160 mmHg there is solid evidence to recommend reducing SBP to between 150 and 140 mmHg.	I	A	141, 265
In fit elderly patients <80 years old antihypertensive treatment may be considered at SBP values ≥140 mmHg with a target SBP <140 mmHg if treatment is well tolerated.	IIb	C	-
In individuals older than 80 years with an initial SBP ≥160 mmHg it is recommended to reduce SBP to between 150 and 140 mmHg, provided they are in good physical and mental conditions.	I	B	287
In frail elderly patients, it is recommended to leave decisions on antihypertensive therapy to the treating physician, and based on monitoring of the clinical effects of treatment.	I	C	-
Continuation of well-tolerated antihypertensive treatment should be considered when a treated individual becomes octogenarian.	IIa	C	-
All hypertensive agents are recommended and can be used in the elderly, although diuretics and calcium antagonists may be preferred in isolated systolic hypertension.	I	A	444, 449, 451, 452

Original Study

Ambulatory Blood Pressure Monitoring in Older Nursing Home Residents: Diagnostic and Prognostic Role

Enrico Mossello MD, PhD *, Maria Chiara Pieraccioli MD, Samanta Zanieri MD, Angela Fedeli MD,
Maddalena Belladonna MD, Nicola Nesti MD, Niccolò Marchionni MD, Giulio Masotti MD,
Andrea Ungar MD, PhD

Division of Geriatric Medicine and Cardiology, University of Florence and Careggi Teaching Hospital, Florence, Italy

Keywords:
Ambulatory blood pressure monitoring
nursing home
white-coat hypertension
arterial hypertension

A B S T R A C T

Background: Older subjects living in nursing homes (NHs) show a high prevalence of multimorbidity, disability, and cognitive impairment. The clinical meaning of arterial hypertension (AH) in this population is unclear, and few studies have adopted ambulatory blood pressure monitoring (ABPM) with this purpose.

The aims of the study were to evaluate the concordance between office and monitored blood pressure in a sample of NH residents and to assess the prognostic meaning of ABPM parameters after 1 year.

Methods: NH residents underwent a comprehensive geriatric assessment and 24-hour ABPM (Spacelabs 90207). White-coat hypertension (WCH) was defined as office blood pressure of 140/90 or higher and ABPM lower than 135/85 mm Hg. Vital status was assessed after 1 year.

Results: A total of 100 residents (mean age 83, 51% affected by AH) showed WCH in 33% of cases and in 70% of cases elevated office blood pressure. Correlation between monitored and office blood pressure was limited for systolic ($R = 0.30$) and nonsignificant for diastolic blood pressure ($R = 0.11$). Disability and behavioral disorders were independently associated with 1-year mortality. No ABPM parameter, except low nighttime systolic blood pressure variability, was associated with 1-year mortality.

Conclusions: Concordance between office and ABPM values is limited, and WCH prevalence is high among NH residents. Survival at 1-year follow-up is predicted by disability and behavioral disorders, but is not associated with blood pressure values.

JAMDA

Table 2
Baseline Features of Survived and Deceased Subjects

	Survived (n = 79)	Deceased (n = 21)	P
Age, y	82 ± 9	85 ± 10	.292
Females	53 (67)	11 (52)	.212
Smoke, present or previous	26 (33)	6 (29)	.705
Barthel index, %	44 ± 35	17 ± 28	.001
MMSE	16.5 ± 9.8	8.6 ± 10.8	.001
NPI	7.4 ± 7.0	13.2 ± 8.5	.008
Charlson Index	5.1 ± 1.6	6.2 ± 1.5	.004
AH, n (%)	39 (49)	12 (57)	.526
Antihypertensive, n (%)	47 (60)	17 (81)	.069
History of falls, n (%)	43 (54)	6 (29)	.035
No. of drugs	3.5 ± 1.7	3.5 ± 1.4	.868
Diabetes mellitus, n (%)	8 (10)	4 (19)	.263
TIA/Stroke, n (%)	31 (39)	7 (33)	.620
CAD, n (%)	11 (14)	6 (29)	.112
CHF, n (%)	13 (17)	7 (33)	.086

AH, arterial hypertension; BMI, body mass index; CAD, coronary artery disease; CHF, chronic heart failure; MMSE, Mini Mental State Examination; NPI, Neuropsychiatric Inventory; TIA, transient ischemic attack.

associated with blood pressure values.

Ambulatory Blood Pressure Monitoring in Older Nursing Home Residents: Diagnostic and Prognostic Role

Enrico Mossello MD, PhD *, Maria Chiara Pieraccioli MD, Samanta Zanieri MD, Angela Fedeli MD, Maddalena Belladonna MD, Nicola Nesti MD, Niccolò Marchionni MD, Giulio Masotti MD, Andrea Ungar MD, PhD
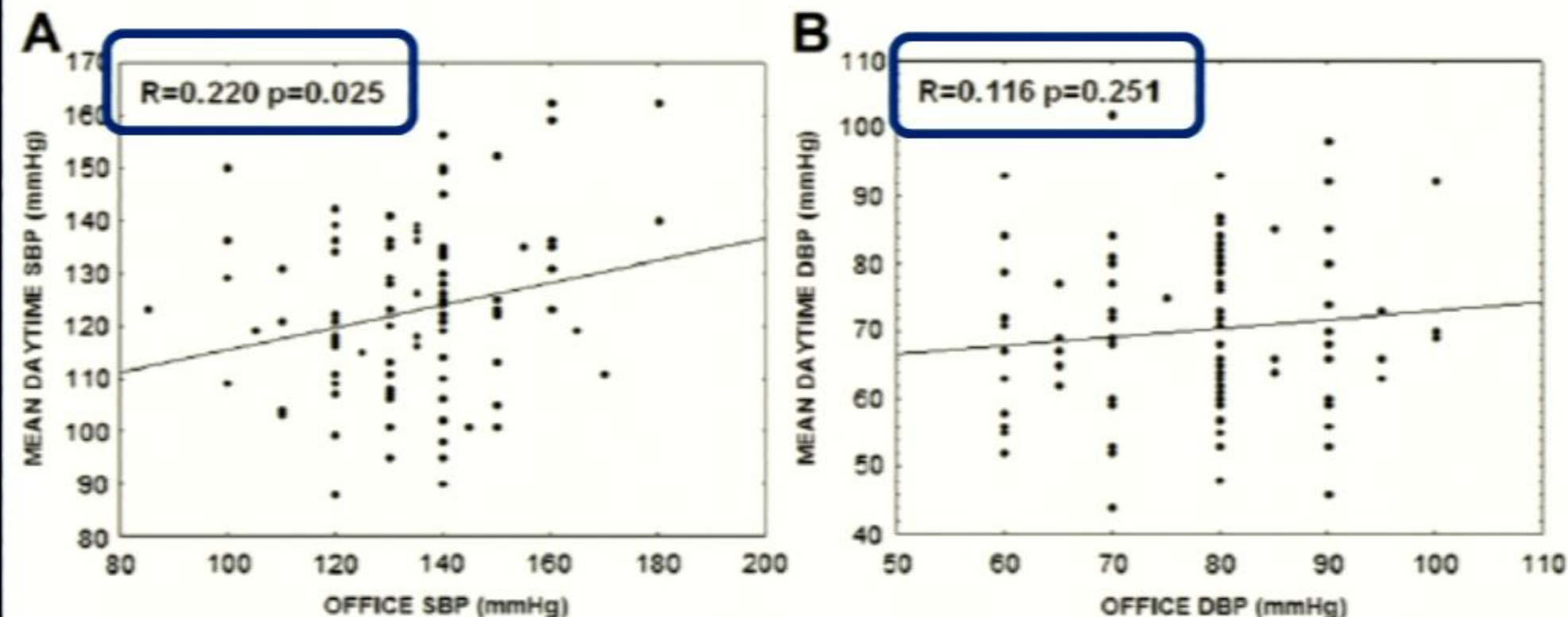
Fig. 1. Correlation between Office and ABPM Values for SBP (A) and DBP (B).

Ambulatory Blood Pressure Monitoring in Older Nursing Home Residents: Diagnostic and Prognostic Role

Enrico Mossello MD, PhD*, Maria Chiara Pieraccioli MD, Samanta Zanieri MD, Angela Fedeli MD, Maddalena Belladonna MD, Nicola Nesti MD, Niccolò Marchionni MD, Giulio Masotti MD, Andrea Ungar MD, PhD

.... among subjects with normal office BP values the prevalence of masked hypertension was 26% and among subjects with elevated office BP values **the prevalence of white coat hypertension (WCH) was 70%**.

Ambulatory Blood Pressure Monitoring in Older Nursing Home Residents: Diagnostic and Prognostic Role

Enrico Mossello MD, PhD*, Maria Chiara Pieraccioli MD, Samanta Zanieri MD, Angela Fedeli MD, Maddalena Belladonna MD, Nicola Nesti MD, Niccolò Marchionni MD, Giulio Masotti MD, Andrea Ungar MD, PhD

.... among subjects with normal office BP values the prevalence of masked hypertension was 26% and among subjects with elevated office BP values **the prevalence of white coat hypertension (WCH) was 70%**.

..... **61% of subjects with WCH actually received antihypertensive treatment** in the present study, thus suggesting a potential overtreatment.

Original Study

Ambulatory Blood Pressure Monitoring in Older Nursing Home Residents: Diagnostic and Prognostic Role

Enrico Mossello, MD, PhD ⚐ ✉, Maria Chiara Pieraccioli, MD, Samanta Zanieri, MD, Angela Fedeli, MD, Maddalena Belladonna, MD, Nicola Nesti, MD, Niccolò Marchionni, MD, Giulio Masotti, MD, Andrea Ungar, MD, PhD

Division of Geriatric Medicine and Cardiology, University of Florence and Careggi Teaching Hospital, Florence, Italy

Survival at 1-year follow-up is predicted by disability and behavioral disorders, but is not associated with blood pressure values."

	OR	CI 95%	p
Barthel Index	0.976	0.959-0.996	0.018
Neuropsychiatric Inventory	1.062	1.001-1.127	0.048
Night-time SBP SD	0.877	0.764-1.006	0.061

Tolerability of ambulatory blood pressure monitoring (ABPM) in cognitively impaired elderly

NICOLA NESTI[1], MARIACHIARA PIERACCIOLI[1], ENRICO MOSSELLO[1], FEDERICA SGRILLI[1], MATTEO BULGARESI[1], ELENA CRESCIOLI[1], FRANCESCO BIAGINI[1], VERONICA CALERI[2], ELISABETTA TONON[2], CLAUDIA CANTINI[2], CARLO A. BIAGINI[2], NICCOLÒ MARCHIONNI[1] & ANDREA UNGAR[1]

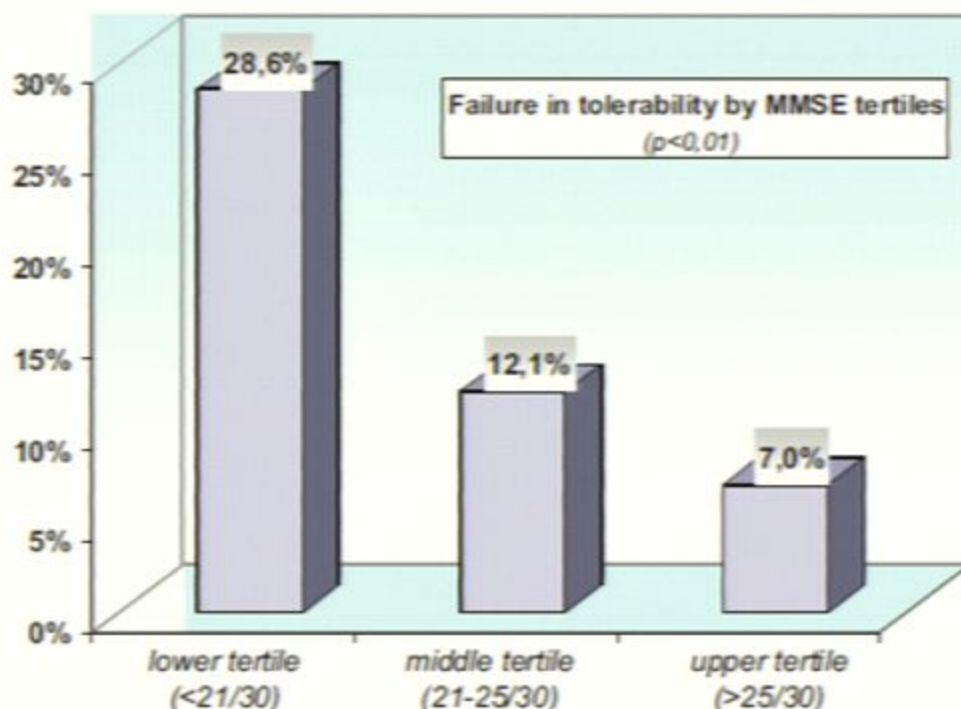**176 pazienti ambulatoriali affetti da demenza o MCI**

Figure 1. Failure in ambulatory blood pressure monitoring (ABPM) tolerability by Mini Mental State Examination (MMSE) tertiles.

Tolerability of ambulatory blood pressure monitoring (ABPM) in cognitively impaired elderly

NICOLA NESTI[1], MARIACHIARA PIERACCIOLI[1], ENRICO MOSSELLO[1], FEDERICA SGRILLI[1], MATTEO BULGARESI[1], ELENA CRESCIOLI[1], FRANCESCO BIAGINI[1], VERONICA CALERI[2], ELISABETTA TONON[2], CLAUDIA CANTINI[2], CARLO A. BIAGINI[2], NICCOLÒ MARCHIONNI[1] & ANDREA UNGAR[1]

Solo una **minoranza** di pazienti con grave decadimento cognitivo e disturbi comportamentali **non hanno tollerato** il monitoraggio pressorio.

Anche nei pazienti che non raggiungono il 75% di misurazioni valide il monitoraggio ha dato **indicazioni interessanti** per la terapia
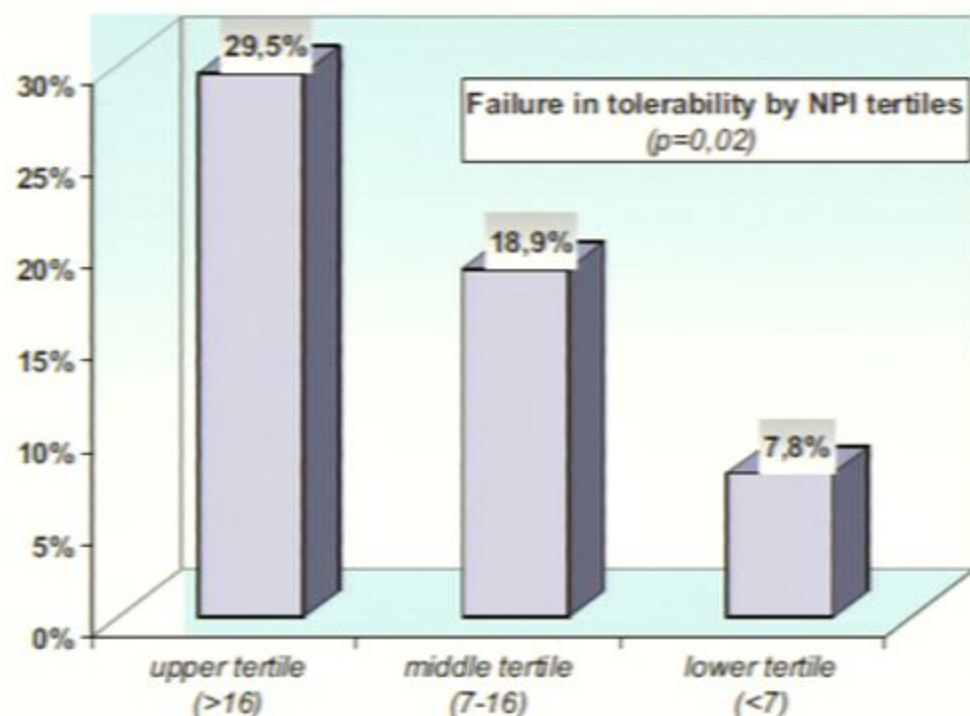

Failure in tolerability by NPI tertiles (p=0,02)

29,5% — upper tertile (>16)
18,9% — middle tertile (7-16)
7,8% — lower tertile (<7)

Figure 2. Failure in ambulatory blood pressure monitoring (ABPM) tolerability by Neuropsychiatric Inventory (NPI) tertiles.

6.10.3 Cognitive dysfunction and white matter lesions

The importance of hypertension in predicting vascular dementia has been confirmed in a recent, carefully conducted observational study in Japan,[549] but evidence on the effects of lowering of BP is scanty and confusing. Little information was added by a cognition sub-study of HY

Trials are urgently needed on preventing cognitive dysfunction and on delaying dementia when cognitive dysfunction has begun

tion has begun. Although white matter lesions (hyperintensities at MRI) are known to be associated with increased risk of stroke, cognitive decline and dementia (see Section 3.7.5), almost no informa-

Can Antihypertensive Treatment Impact Negatively on Older Subjects with Cognitive Impairment?

Enrico Mossello[1], Maria Chiara Pieraccioli[1], Nicola Nesti[1], Matteo Bulgaresi[1], Chiara Lorenzi[1], Veronica Caleri[2], Elisabetta Tonon[2], Maria Chiara Cavallini[1], Caterina Baroncini[1], Mauro Di Bari[1], Samuele Baldasseroni[1], Claudia Cantini[2], Carlo Adriano Biagini[2], Niccolò Marchionni[1], Andrea Ungar[1]

[1] Division of Geriatric Cardiology and Medicine, University of Florence and Careggi Teaching Hospital, Florence, Italy

[2] Division of Geriatric Medicine, Azienda USL 3, Pistoia

172 pazienti (età media 79±5 years, 63% donne), affetti da demenza nel 68% e MCI nel 32% dei casi

Submitted

Can Antihypertensive Treatment Impact Negatively on Older Subjects with Cognitive Impairment?

Enrico Mossello[1], Maria Chiara Pieraccioli[1], Nicola Nesti[1], Matteo Bulgaresi[1], Chiara Lorenzi[1], Veronica Caleri[2], Elisabetta Tonon[2], Maria Chiara Cavallini[1], Caterina Baroncini[1], Mauro Di Bari[1], Samuele Baldasseroni[1], Claudia Cantini[2], Carlo Adriano Biagini[2], Niccolò Marchionni[1], Andrea Ungar[1]

[1] Division of Geriatric Cardiology and Medicine, University of Florence and Careggi Teaching Hospital, Florence, Italy
[2] Division of Geriatric Medicine, Azienda USL 3, Pistoia

172 pazienti (età media 79±5 years, 63% donne), affetti da demenza nel 68% e MCI nel 32% dei casi

Tutti i pazienti sono stati sottoposti a ABPM, valutazione pressoria clinica e follow-up clinico e cognitivo
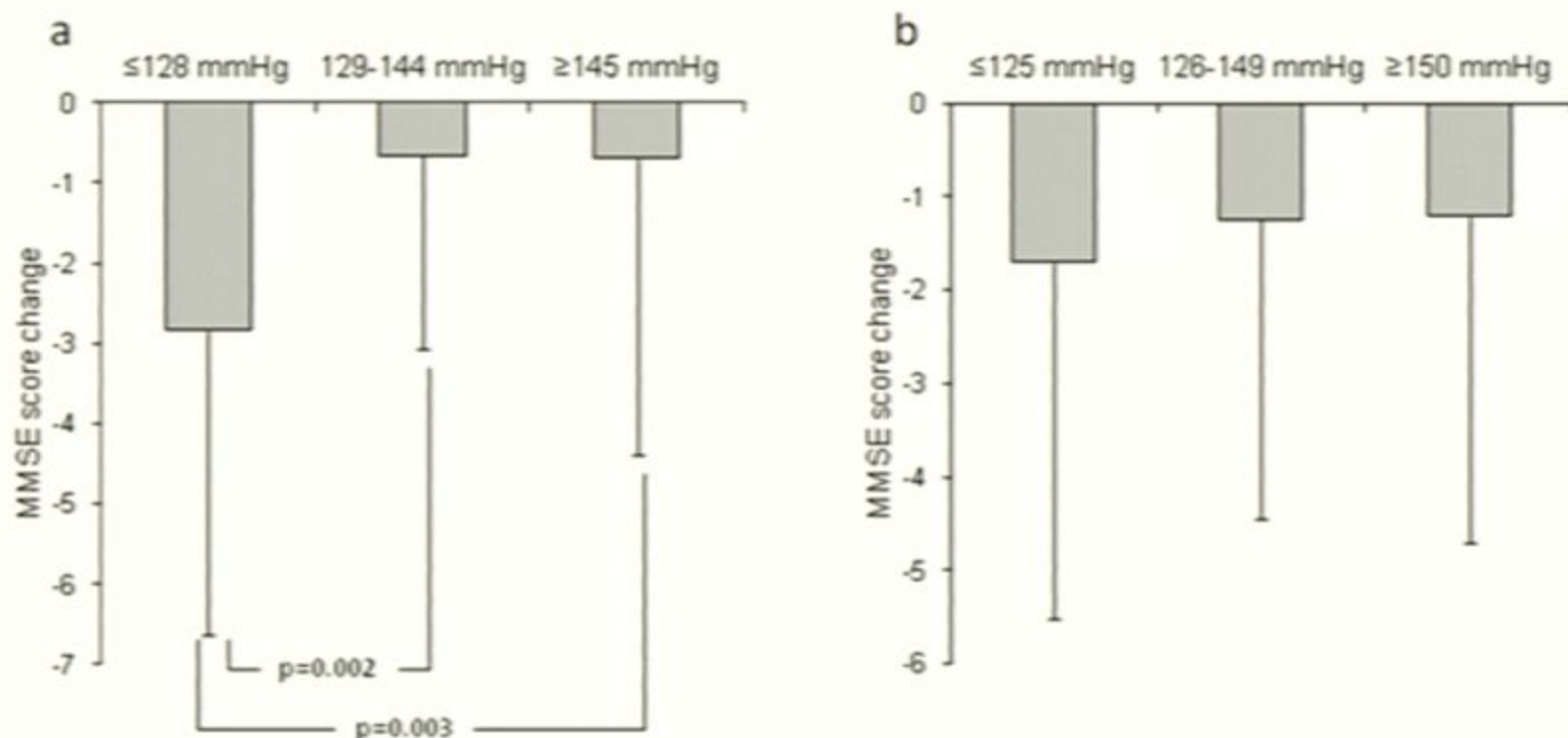
Submitted

Can Antihypertensive Treatment Impact Negatively on Older Subjects with Cognitive Impairment?

Enrico Mossello[1], Maria Chiara Pieraccioli[1], Nicola Nesti[1], Matteo Bulgaresi[1], Chiara Lorenzi[1], Veronica Caleri[2], Elisabetta Tonon[2], Maria Chiara Cavallini[1], Caterina Baroncini[1], Mauro Di Bari[1], Samuele Baldasseroni[1], Claudia Cantini[2], Carlo Adriano Biagini[2], Niccolò Marchionni[1], Andrea Ungar[1]

[1] Division of Geriatric Cardiology and Medicine, University of Florence and Careggi Teaching Hospital, Florence, Italy

[2] Division of Geriatric Medicine, Azienda USL 3, Pistoia

Figure 1. MMSE change by tertile of mean day-time (a) and office (b) systolic blood pressure.

Can Antihypertensive Treatment Impact Negatively on Older Subjects with Cognitive Impairment?

Enrico Mossello[1], Maria Chiara Pieraccioli[1], Nicola Nesti[1], Matteo Bulgaresi[1], Chiara Lorenzi[1], Veronica Caleri[1], Elisabetta Tonon[2], Maria Chiara Cavallini[1], Caterina Barancini[1], Mauro Di Bari[1], Samuele Baldasseroni[1], Claudia Cantini[2], Carlo Adriano Biagini[2], Niccolò Marchionni[1], Andrea Ungar[1]

[1] Division of Geriatric Cardiology and Medicine, University of Florence and Careggi Teaching Hospital, Florence, Italy
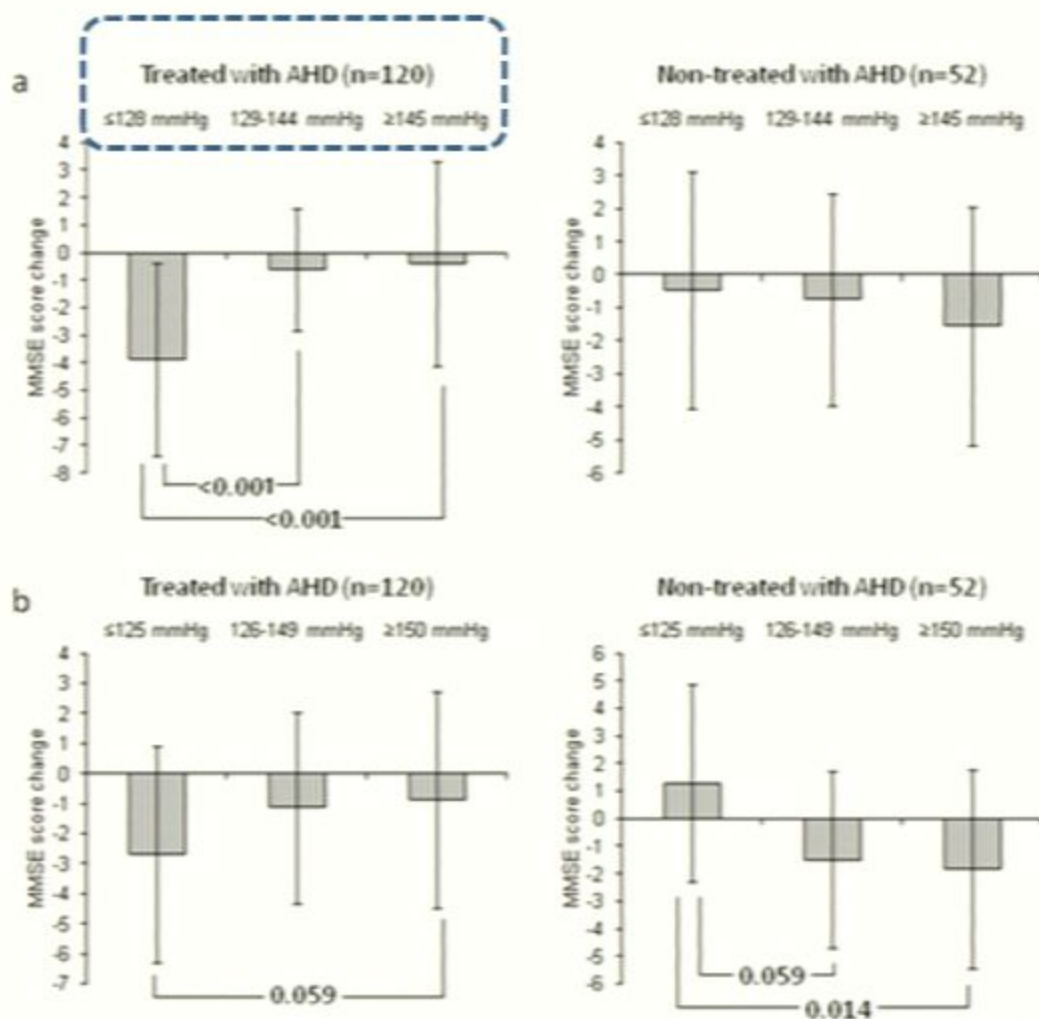[2] Division of Geriatric Medicine, Azienda USL 3, Pistoia

Valori pressori più bassi al monitoraggio pressorio sono indipendentemente associati ad una maggiore progressione del declino cognitivosia nei pazienti con demenza che nei pazienti con MCI.

Il monitoraggio può essere utile per valutare un "overtreatment" in questa peculiare popolazione.

Figure 2. MMSE change by antihypertensive drugs (AHD) and day-time (a) and office (b) systolic blood pressure.

Submitted

Elena,

103 anni

Firenze, Maggio 2014

Grazie per l'attenzione