

Blood Pressure Control and Antihypertensive Medication Adherence in Adult and Elder Hypertensive Medicated Patients in Primary Health Care in Lisbon Region

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Introduction

What is known

- Hypertension (HTN) is an important chronic disease due to its high prevalence and association with cardiovascular mortality and morbidity.
- Elderly is vulnerable group to uncontrolled HTN, which is exacerbated by other comorbidities.
- Adherence to antihypertensive medication (aHT) has been pointed out as a major factor associated to blood pressure (BP) control related to older patients.

Objectives

This study aims to:

1. To compare BP control among medicated hypertensive patients aged 45-64 and 65-80;
2. To examine which factors are associated with adherence to antihypertensive treatment and BP control among patients aged 45-64 and 65-80.

Methods

Study Design and Participants

Population-based cross-sectional study with medicated hypertensive patients, aged between 40-80 years, randomly selected from Primary Health Care Centres of the Lisbon Health Region.

Data Collection

Between September 2010 and March 2011, face-to-face interviews were conducted. Data collection consisted of demographic and clinical characteristics, BP measurements and self-reported adherence to aHT.

Variables

Blood Pressure Control

- Controlled BP was considered when the average of 3 measurements resulted in Systolic / Diastolic BP bellow 140/90mmHg.

Adherence

- Sum of "yes" responses at seven questions of the Portuguese version of the Morisky self-report scale.
- Subjects were classified as non-adherents if score ≥ 1

Sociodemographic factors

- Age
- Sex
- Education
- Employment
- Income
- Ethnicity

Biomedical factors

- | | |
|---------------------------|----------------------|
| <u>Disease-related</u> | <u>Comorbidities</u> |
| • BP values | • Diabetes |
| • Years of disease | • Cholesterol |
| • Nr of medicines for HTN | • Obesity |

Statistical analysis

- Bivariate analysis ($\alpha = 0.05$) was used to compare BP control among both groups.
- Binary Logistic Regression ($\alpha = 0.05$, stepwise) was used to evaluate which factors are associated to adherence to aHT and BP control.

References:

- 1.ESH-ESC Task Force on the Management of Arterial Hypertension. 2007 ESH-ESC Practice Guidelines for the Management of Arterial Hypertension. J Hypertension . 2007; 25: 1751-1762
- 2.McDonald M, et al. Prevalence, Awareness, and Management of Hypertension, Dyslipidemia, and Diabetes Among United States Adults Aged 65 and Older. J Gerontol A Biol Sci Med Sci. 2009; 64A(2): 256-263

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Results

A total of 787 subjects were included: 57.8 % women and 40.4% aged 65 and over.

Table 1. BP control differences between both age groups.

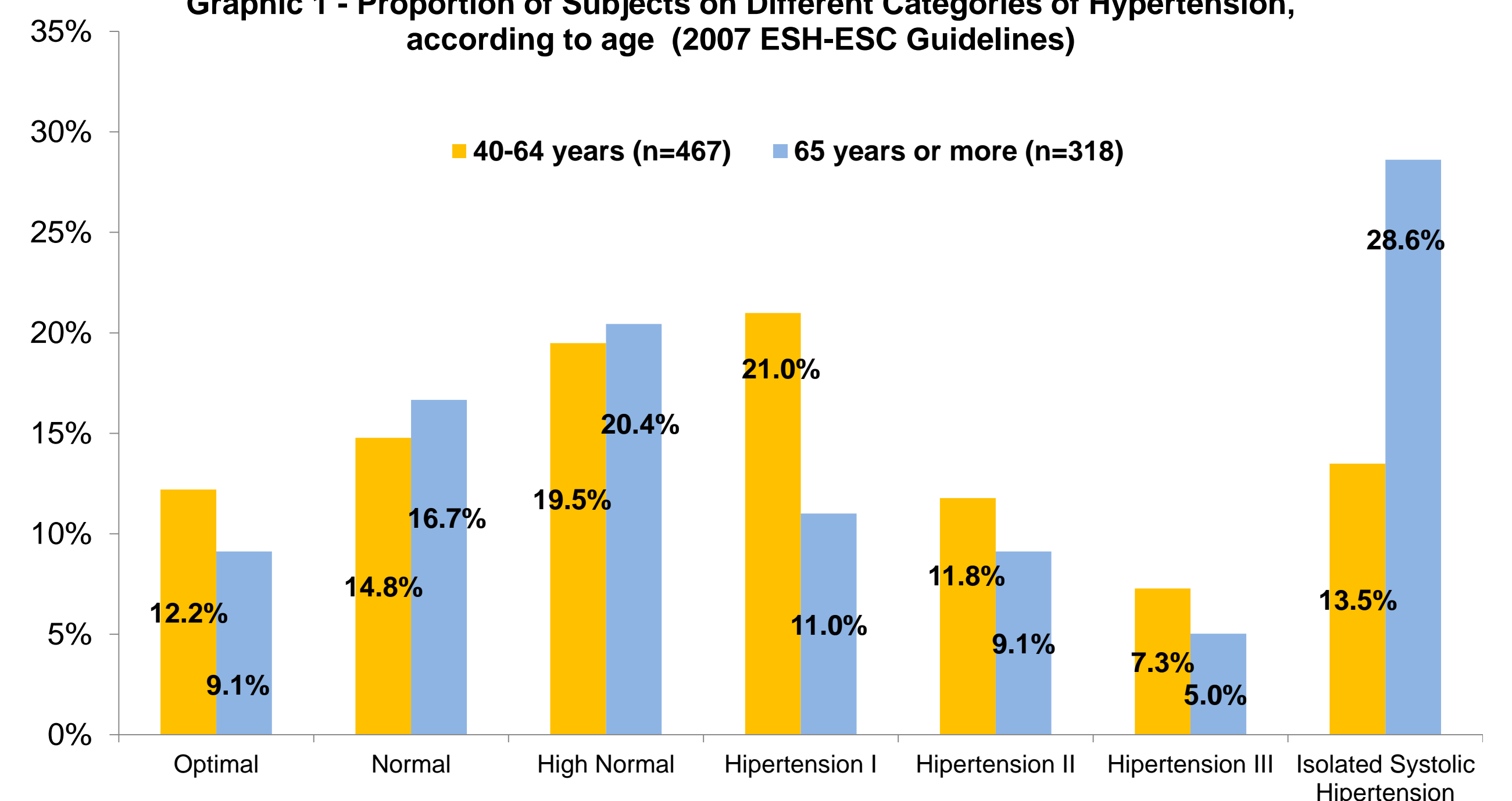
Variable	40-64 years n=469	≥ 65 years n=318	p-value*
BP Control [%]			
Controlled	46.5	46.2	0.95
Uncontrolled	53.5	53.8	
Ethnicity [%]			
Natives	45.6	73.9	<0.01
Migrants	54.4	26.1	
Sex [%]			
Male	41.2	43.7	0.48
Female	58.8	56.3	
Years with HTN (mean \pm sd)	10.9 \pm 9.4	16.7 \pm 12.2	<0.01
Total # of drugs (mean \pm sd)	4.1 \pm 2.5	5.5 \pm 2.9	<0.01
Total # of aHT (mean \pm sd)	1.6 \pm 0.8	1.9 \pm 1.0	0.02
Diabetes [%]			
Yes	23.1	28.7	0.08
No	76.9	71.3	
IMC (mean \pm sd)	31.3 \pm 10.2	29.9 \pm 4.8	0.04

*p-value for Chi-square (categorical variables) and Mann-Whitney U (continuous variables) tests.

Table 2. Factors associated to non-adherence to aHT and uncontrolled BP

	Variables	Odds Ratio (95%CI)	p-value
Non-adherence	African Migrants	2.06 (1.53-2.76)	< 0.01
	Aged 40-64	0.06 (0.46-0.85)	< 0.01
	Aged 65 over	1.00	
Uncontrolled BP	Male	1.66 (1.24-2.21)	< 0.01
	Without Scholarity	0.48 (0.23- 1.03)	0.06
	4th grade	0.44 (0.27-0.73)	< 0.01
	Basic education	0.53 (0.31- 0.91)	0.02
	Secondary Education	0.75 (0.41- 1.37)	0.34
	Higher Education	1.00	

Graphic 1 - Proportion of Subjects on Different Categories of Hypertension, according to age (2007 ESH-ESC Guidelines)



Discussion and Conclusions

- Differences found on BP control in both age groups are in agreement with other studies, mainly due to isolated systolic hypertension in the elderly.
- Being part of the youngest group and native are independent protective factors of non-adherence to aHT. Additionally, being a male and having a higher education level seem to be associated with uncontrolled BP.
- Further studies should evaluate the relationship between adherence to aHT and BP control and the associated factors, including gender and ethnicity related factors, on the elderly hypertensive patients.