Hypertension Research (2015) 38, 1–7

www.nature.com/hr

REVIEW SERIES

Prevalence of white-coat and masked hypertension in national and international registries

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In the past two decades, techniques for the measurement of blood pressure outside the medical setting have unmasked highly prevalent situations. A significant proportion of patients with office blood pressure levels above the thresholds for diagnosing hypertension or above the limits where those being treated are considered to be adequately controlled actually show normal ambulatory blood pressure levels. These patients have white-coat hypertension if untreated or false resistance to antihypertensive therapy because of the white-coat effect if treated. However, some individuals with normal office blood pressure measurements show elevated ambulatory blood pressure levels, and thus have masked hypertension if untreated or masked uncontrolled hypertension if treated. When looking for white-coat hypertension in patients with elevated office blood pressure levels or when looking for masked hypertension in office-controlled patients, up to one in three patients in each scenario would have white-coat or masked hypertension. Although related clinical factors, such as age, gender and global cardiovascular risk, are associated with both conditions, their abilities to predict such a misclassification are very low. Thus, assessing individual blood pressure levels by means of an ambulatory technique, particularly ambulatory blood pressure monitoring, is now considered a priority in diagnosing hypertension and in evaluating hypertension control.
Hypertension Research (2015) **38,** 1–7; doi:10.1038/hr.2014.149; published online 16 October 2014

Keywords: ambulatory blood pressure monitoring; blood pressure control; masked hypertension; white-coat hypertension

INTRODUCTION

Cardiovascular disease is the leading cause of mortality worldwide, accounting for 30% of all deaths.[1] Having a blood pressure (BP) above optimal limits is the main risk factor for cardiovascular and renal diseases, thus constituting the main determinant of mortality and disability worldwide.[2] In spite of the efforts made by health services to prevent cardiovascular disease, the prevalence of hypertension is growing, and it is expected to affect up to one in three adult individuals by 2025.[3]

The vast majority of the body of knowledge about hypertension has been built on the assessment of BP by means of the traditional auscultatory measurement at an office or clinic. Nevertheless, the main limitation of this technique, apart from observer bias, comes from offering only a momentary BP measurement, usually under circumstances that can influence the BP level.[4] To improve the assessment of actual 24-h BP levels, techniques for obtaining automated BP profiles over 24 h and BP measurements at home have been developed. Ambulatory BP monitoring (ABPM) is now the gold standard method for evaluating true BP levels, providing a more accurate estimation of true individual BP.[5–12]

METHODS

The authors searched PubMed for 'white-coat hypertension (WCH),' 'white-coat effect,' 'isolated clinic hypertension,' 'masked hypertension (MH)' and 'isolated ambulatory hypertension.' Inclusion criteria for the present review were (1) studies from national and international registries of ABPM and/or home BP monitoring, and (2) studies containing information about the prevalence of WCH in hypertensive patients and the prevalence of MH in normotensive office-controlled patients, respectively.

MISCLASSIFICATION OF BLOOD PRESSURE STATUS IN THE OFFICE

In clinical practice, the main indication for ABPM is to accurately determine an individual's BP.[4] Misclassification of BP status can occur in one out of three hypertensive subjects.[13–15] Disagreements between office and ambulatory BP assessments arise from two conditions, that is, WCH and MH.

The term WCH was introduced by Pickering *et al.*[16] to describe the condition, in which untreated patients have high BP readings at their doctor's office but normal BP levels outside the medical setting.

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Received 24 March 2014; revised 6 August 2014; accepted 12 August 2014; published online 16 October 2014

Table 1 Definitions of white-coat hypertension and masked hypertension according to the 2013 ESH Position Paper on Ambulatory BP monitoring[4]

White-coat hypertension (isolated clinical hypertension)
Untreated patients with elevated office BP ⩾140/90 mm Hg and
24-h ambulatory BP <130/80 mm Hg and
Awake ambulatory BP <135/85 mm Hg and
Sleep ambulatory BP <120/70 mm Hg

Masked hypertension
Untreated patients with office BP <140/90 mm Hg and
24-h ambulatory BP ⩾130/80 mm Hg and/or
Awake ambulatory BP ⩾135/85 mm Hg and/or
Sleep ambulatory BP ⩾120/70 mm Hg

Pseudo- or false-resistant hypertension because of white-coat effect
Treated patients with elevated office BP ⩾140/90 mm Hg and
24-h ambulatory BP <130/80 mm Hg and
Awake ambulatory BP <135/85 mm Hg and
Sleep ambulatory BP <120/70 mm Hg

Masked uncontrolled hypertension
Treated patients with office BP <140/90 mm Hg and
24-h ambulatory BP ⩾130/80 mm Hg and/or
Awake ambulatory BP ⩾135/85 mm Hg and/or
Sleep ambulatory BP ⩾120/70 mm Hg

Abbreviations: ABPM, ambulatory blood pressure monitoring; BP, blood pressure; ESH, European Society of Hypertension.

This situation is also called isolated clinic hypertension. The term white-coat effect has been defined as the rise in BP that occurs in the medical environment; patients presenting with an office BP at least 20 mm Hg systolic and/or 10 mm Hg diastolic higher than the awake ambulatory BP have been designated as having a significant white-coat effect.[4] Treated patients presenting with uncontrolled BP at the office but normal ambulatory BP values have been designated as pseudo-resistant or false-resistant hypertensives because of the white-coat effect.[4] In the epidemiologic approach to hypertension control, this condition has been termed office-resistant control or underestimation of BP control at the office.[13]

MH is defined as untreated individuals with normal office BPs, usually <140/90 mm Hg, but elevated BPs on ABPM or home BP measurements, usually ⩾135/85 mm Hg for daytime values. MH and its related risks have previously been recognized for both treated and untreated subjects.[4,15,17–19] For treated hypertensive patients, the preferred term is masked uncontrolled hypertension.

CURRENT DEFINITIONS OF WHITE-COAT HYPERTENSION AND MASKED HYPERTENSION

Until now, many definitions have been used in assessing WCH and MH. Initially, studies defined WCH as having an office systolic BP ⩾140 mm Hg and/or diastolic BP ⩾90 mm Hg and an out-of-office daytime (awake) BP <135/85 mm Hg. More recently, studies have defined WHC as an elevated office BP but a 24-h ambulatory BP <130/80 mm Hg, recognizing that nocturnal BP has a remarkable impact on a patient's prognosis.

The current definition of WCH, as recently proposed in an *ad hoc* position paper of the European Society of Hypertension Working Group on BP monitoring, includes normality in the three conventional ABPM periods, that is, daytime, nighttime and 24 h, to diagnose WCH.[4] As mentioned above, the term WCH, or isolated clinical hypertension, should be reserved for untreated patients; thus, the term is used mainly for diagnostic purposes. Treated patients with an office BP ⩾140/90 mm Hg and normal ambulatory BP values should be designated as having pseudo-resistant or false-resistant hypertension because of a white-coat effect. By contrast, MH should be defined in untreated patients who have normal office BP levels but a daytime BP ⩾135/85 mm Hg, nighttime BP ⩾120/70 mm Hg or 24 h BP ⩾130/80 mm Hg. When this situation occurs in a treated patient, the term 'masked uncontrolled hypertension' should be used.[4,15] These definitions are summarized in Table 1.

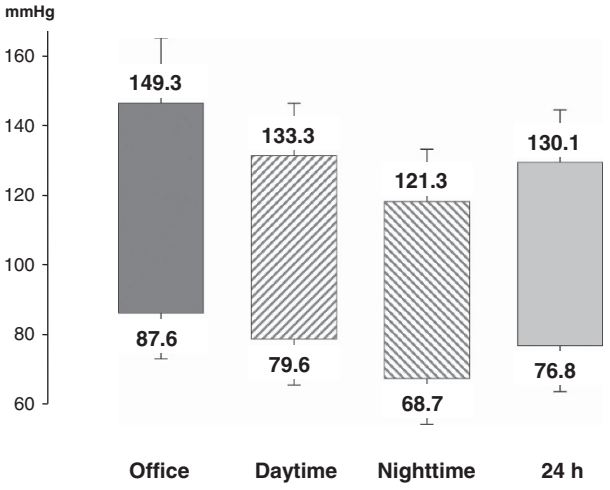

Figure 1 Office and ambulatory blood pressure levels in 51 573 hypertensive patients from the Spanish Ambulatory Blood Pressure Monitoring Registry.

Table 2 Differences between office and ambulatory blood pressure in high-risk *vs.* low-to-moderate-risk hypertensives

	High-risk hypertensives	*Low-to-moderate-risk hypertensives*
N	6534	10 685
Office BP (mm Hg)	158.8/89.9	144.5/87.4
Daytime BP (mm Hg)	138.6/79.7	131.8/80.8
Rounded difference[a] (mm Hg)	20/10	13/7
24 h BP (mm Hg)	135.8/77.0	128.4/77.8
Rounded difference[a] (mm Hg)	23/13	16/10

Abbreviations: ABPM, ambulatory blood pressure monitoring; BP, blood pressure.
High-risk and low-to-moderate-risk hypertension were then defined according the stratification system of the 2003 European Society of Hypertension/European Society of Cardiology guidelines for management of arterial hypertension.Data from the Spanish ABPM Registry.
[a]Versus office BP.

DIFFERENCES BETWEEN OFFICE AND AMBULATORY BLOOD PRESSURES

As stated above, many patients present with a stress reaction when visiting a doctor or nurse, or even when performing a self-automated BP measurement in a medical environment, and show an office BP that may be significantly higher than their BP levels during normal daily activities. Data from 51 573 hypertensive patients included in the Spanish ABPM Registry showed that daytime BPs were ≈16/8 mm Hg lower than office BPs, and this difference reached ≈20/10 mm Hg when comparing office and 24 h BPs (Figure 1). The higher the BP or

Table 3 Prevalence of white-coat hypertension within hypertensive patients in different subgroups obtained from the Spanish ABPM Registry

Study	*N*	*Definition*	*Prevalence (%)*
Untreated hypertensives			
Vinyoles *et al.*[14]	6176	Office BP ⩾ 140/90 and daytime BP <135/85 mm Hg	29.2
		Office BP ⩾ 140/90 and 24 h <125/80 mm Hg	18.3
Treated hypertensives			
Banegas *et al.*[13]	12 877	Office BP ⩾ 140/90 and daytime BP <135/85 mm Hg	33.4
Treated male vs female hypertensives			
Banegas *et al.*[21]	15 212 (male)	Office BP ⩾ 140/90 and 24 h BP <130/80 mm Hg	24.2
	13 939 (female)	Office BP ⩾ 140/90 and 24 h BP <130/80 mm Hg	32.5
Treated hypertensives with coronary heart disease			
Banegas *et al.*[22]	2434	Office BP ⩾ 140/90 and 24 h BP <130/80 mm Hg	25.2
Very elderly hypertensives, age ⩾ 80 years			
Llisterri *et al.*[23]	2311	Office BP ⩾ 140/90 and 24 h BP <130/80 mm Hg	27.6
Resistant hypertensives			
De la Sierra *et al.*[24]	8295	Office BP ⩾ 140/90 and 24 h BP <130/80 mm Hg	37.5
Diabetic hypertensives			
Gorostidi *et al.*[25]	12 600	Office BP ⩾ 140/90 and daytime BP <135/85 mm Hg	33.0
Hypertensives with chronic kidney disease			
Gorostidi *et al.*[26]	5693	Office BP ⩾ 140/90 and 24 h BP <130/80 mm Hg	28.8

Abbreviations: ABPM, ambulatory blood pressure monitoring; BP, blood pressure.

Table 4 Predictors of white-coat hypertension in multivariate logistic analyses from specific groups of the Spanish ABPM Registry

Treated hypertensives	*Resistant hypertensives*	*Hypertensives with CKD*
Study, Banegas et al.[13]	*Study, De la Sierra et al.*[24]	*Study, Gorostidi et al.*[26]
N 12 877	*N 8295*	*N 5693*
Age ⩾ 60 years	Ageing	Ageing
Female sex	Female sex	Female sex
No smoking	Less duration of hypertension	Obesity
No diabetes	No smoking	Less albuminuria
Less target-organ damage	No diabetes	Less target-organ damage
	Less target-organ damage	
	Less cardiovascular disease	

Abbreviations: ABPM, ambulatory blood pressure monitoring; CKD, chronic kidney disease.

global cardiovascular risk level, the greater the difference between office and ambulatory BP values, as shown by our group in the comparison between patients with high-risk hypertension and patients with low-to-moderate-risk hypertension. These data are summarized in Table 2.[20] We also discovered significant gender differences between office and ambulatory BP levels. Women showed higher office BP values than men, despite receiving the same amount of antihypertensive treatment. These office differences were related to a more advanced age (63.9 *vs.* 60.1 years) and a higher prevalence of obesity (44.4 *vs.* 37.3%) in women. Nevertheless, rounded differences between office and 24 h BP levels were 18/9 mm Hg in men and 22/13 mm Hg in women. Consequently, women showed higher control rates of ambulatory BP levels than men.[21]

PREVALENCE OF WHITE-COAT HYPERTENSION IN THE SPANISH ABPM REGISTRY

The Spanish ABPM Registry was developed in 2004 with the goal of promoting the use of ABPM in primary care settings. More than 1200 general physicians were trained in the ABPM technique and in the use of a web platform (www.cardiorisc.com) that receives ABPM data and clinical records from individual patients and generates a results report in real time. Data are stored in a safe database and have been used for a series of investigations including the assessment of WCH in general treated hypertensives,[13] as well as different hypertensive populations, that is, untreated hypertensives,[14] treated male versus female hypertensives,[21] hypertensives with coronary heart disease,[22] very elderly hypertensives,[23] resistant hypertensives,[24] diabetics[25] and hypertensives with chronic kidney disease.[26] The prevalence of WCH ranged from 15.5 to 29.2% in untreated patients, and the prevalence of false-resistant hypertension due to the white-coat effect ranged from 24.2% in treated males to 37.5% in hypertensives resistant to three or more drugs. Complete data about the prevalence of WCH and false resistance due to the white-coat effect are displayed in Table 3. In one of the analyses, the abilities of physicians to predict WCH in untreated hypertensives was assessed but yielded discouraging results. When WCH was suspected, only 33.7% of the results obtained were positive, and when it was not suspected, 26.0% of patients displayed WCH. Predictors of WCH as a cause of false office resistant control are displayed in Table 4. The most consistent variables associated with WCH were age, female gender, a higher body mass index, and less target-organ damage or established cardiovascular disease.

Table 5 Prevalence of white-coat hypertension within hypertensives in national and international databases other than the Spanish ABPM Registry

Study	*N*	*Subjects*	*Definition*	*Prevalence (%)*
Verdecchia *et al.*[27] [a]	1564	Untreated stage 1 hypertensives	Office BP ⩾140/90 and 24 h BP <130/80 mm Hg	10.4
Mancia *et al.*[18] [b]	2051	Population-based study	Office BP ⩾140/90 and 24 h BP <125/79 mm Hg	41.8
Pierdomenico *et al.*[28]	1732	Referred untreated hypertensives	Office BP ⩾140/90 and daytime BP <135/85 mm Hg	23.0
Pierdomenico *et al.*[17]	276	Apparently resistant hypertensives	Office BP ⩾140/90 and daytime BP <135/85 mm Hg	52.9
Dolan *et al.*[30]	5716	Referred hypertensives	Office BP ⩾140/90 and daytime BP <135/85 mm Hg	15.4
Kario *et al.*[31]	811	Referred hypertensives aged ⩾50 years	Office BP ⩾140/90 and 24 h BP <130/80 mm Hg	29.1
Ohkubo *et al.*[32] [c]	1332	Population-based study	Office BP ⩾140/90 and daytime BP <135/85 mm Hg	45.7
Hansen *et al.*[33] [d]	1700	Population-based study	Office BP ⩾140/90 and daytime BP <135/90 mm Hg	18.1
Gustavsen *et al.*[34]	420	Untreated grade 1-2 hypertensives	Office BP ⩾140/90 and daytime BP <135/85 mm Hg	25.2
Hänninen *et al.*[35] [e]	2046	Population-based study	Office BP ⩾140/90 and 7-day home BP monitoring <135/85 mm Hg	31.2
Stergiou *et al.*[36] [f]	662	Community-based study	Office BP ⩾140/90 and 3-day home BP monitoring <135/85 mm Hg	21.5
Franklin *et al.*[32] [g]	6439	Population-based 11-country IDACO[g] study	Untreated subjects with office isolated systolic hypertension and daytime BP <135/85 mm Hg	51.5
Franklin *et al.*[32] [g]	856	Population-based 11-country IDACO[g] study	Treated subjects with office isolated systolic hypertension and daytime BP <135/85 mm Hg	47.2
Fagard[45]	391	Elderly hypertensives from primary care centers	Office BP ⩾140/90 and daytime BP <135/85 mm Hg	24.0

Abbreviations: ABPM, ambulatory blood pressure monitoring; BP, blood pressure.
[a]HARVEST (Hypertension and Ambulatory Recording Venetia Study) and PIUMA (Progetto Ipertensione Umbria Monitoraggio Ambulatoriale) collaboration.
[b]PAMELA (Pressioni Arteriose Monitorate e Loro Associazioni) study.
[c]Ohasama study.
[d]Random sample of 4581 Danes participated in the monitoring of trends and determinants in cardiovascular disease (MONICA) health survey.
[e]Finn-Home study.
[f]Didima study.
[g]IDACO (International Database on Ambulatory Blood Pressure in Relation to Cardiovascular Outcomes).

PREVALENCE OF WHITE-COAT HYPERTENSION IN OTHER NATIONAL AND INTERNATIONAL REGISTRIES

Most cited information about WCH diagnosed by means of ABPM in national registries comes from Italy,[18,27–29] Ireland,[30] Japan[31,32] and Denmark.[33,34] Furthermore, the Finn-Home and Didima studies assessed WCH using self-administered home blood pressure monitoring.[35,36] Finally, the International Database on Ambulatory Blood Pressure Monitoring in Relation to Cardiovascular Outcomes (IDACO) study included a large number of subjects from several countries.[37]

Data about WCH within subjects with office hypertension are summarized in Table 5. The prevalence of WCH ranged from ≈10 to ≈50%, depending on the definition of normal for ambulatory BPs and/or on the studied population. All of these studies showed that WCH occurred very frequently, supporting the previous idea that 30–40% of the subjects classified as having hypertension in a medical environment have normal ambulatory BPs.[38] Consequently, ABPM has been indicated as the first step for diagnosing hypertension after the detection of an office BP ⩾140/90 mm Hg by current British NICE (National Institute for Health and Clinical Excellence) recommendations.[39] Moreover, recent guidelines from the European Societies of Hypertension and Cardiology defined hypertension by both office and ambulatory thresholds and indicates assessing ambulatory BPs to rule out WCH in a broad range of situations, such as grade 1 hypertension at the office or high office BPs in individuals without asymptomatic organ damage and at low cardiovascular risk.[40] Furthermore, ambulatory-based assessments of hypertension control are far better than office-based ones, conveying the encouraging message to physicians that the patients are faring better than shown by the data retrieved in in-office evaluations.[13] In some specific patients, such as resistant hypertensives, the prevalence of the white-coat effect could be even higher than within the general hypertensive population,[24] so assessing ambulatory BPs has also been considered to be the first procedure for diagnosing resistant hypertension.[41]

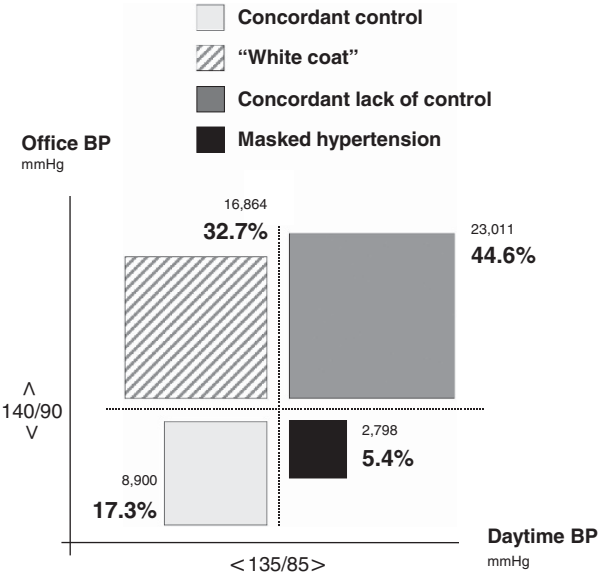

Figure 2 Distribution of 51 573 hypertensive patients from the Spanish Ambulatory Blood Pressure Monitoring Registry according to office and daytime ambulatory blood pressure criteria.

PREVALENCE OF MASKED HYPERTENSION IN NATIONAL AND INTERNATIONAL REGISTRIES

MH is considered to be the opposite of the more commonly recognized WHC. As stated before, the term MH should be used for untreated individuals who have normal office BPs but elevated ambulatory BPs. For treated patients, this condition should be termed masked uncontrolled hypertension.[4,15] Assessing the prevalence of MH in whole samples of a population of hypertensives would

Table 6 Prevalence of masked hypertension in office-controlled hypertensives in different populations from the Spanish ABPM Registry

Study	*N*	*Definition*	*Prevalence (%)*
Treated male vs. female hypertensives			
Study, Banegas *et al.*[21]	15 212 (male)	Office BP <140/90 and 24 h BP ⩾130/80 mm Hg	34.7[a]
	13 939 (female)	Office BP <140/90 and 24 h BP ⩾130/80 mm Hg	26.3[a]
Treated hypertensives with coronary heart disease			
Study, Banegas *et al.*[22]	2434	Office BP <140/90 and 24 h BP ⩾130/80 mm Hg	26.2[a]
Very elderly hypertensives, age ⩾80 years			
Study, Llisterri *et al.*[23]	2311	Office BP <140/90 and 24 h BP ⩾130/80 mm Hg	32.4[a]
Diabetic hypertensives			
Study, Gorostidi *et al.*[25]	12 600	Office BP <140/90 and daytime BP ⩾135/85 mm Hg	24.0[a]
Hypertensives with chronic kidney disease			
Study, Gorostidi *et al.*[26]	5693	Office BP <140/90 and 24 h BP ⩾130/80 mm Hg	32.1[a]
Treated general hypertensives			
Study, Banegas *et al.*[15]	62 788	Office BP <140/90 and 24 h BP ⩾130/80 mm Hg	31.1[a]

Abbreviations: ABPM, ambulatory blood pressure monitoring; BP, blood pressure.
[a]Prevalence of masked hypertension in office-controlled patients.

Table 7 Prevalence of masked hypertension within subjects with normal office blood pressure in national and international databases other than the Spanish ABPM Registry

Study	*N*	*Subjects*	*Definition*	*Prevalence (%)*
Björklund *et al.*[42]	578	Population-based study	Office BP <140/90 and daytime BP ⩾135/85 mm Hg	30.4
Mancia *et al.*[18 a]	2051	Population-based study	Office BP <140/90 and 24 h BP ⩾125/79 mm Hg	14.7
Pierdomenico *et al.*[29]	591	Untreated prehypertensives	Office BP <140/90 and daytime BP ⩾135/85 mm Hg	20.3
Pierdomenico *et al.*[17]	466	Treated subjects	Office BP ⩾140/90 and daytime BP <135/85 mm Hg	27.0
Dolan *et al.*[30]	5716	Referred hypertensives	Office BP <140/90 and daytime BP ⩾135/85 mm Hg	15.4
Ohkubo *et al.*[32 b]	1332	Population-based study	Office BP <140/90 and daytime BP ⩾135/85 mm Hg	23.0
Hansen *et al.*[33 c]	1700	Population-based study	Office BP <140/90 and daytime BP ⩾135/85 mm Hg	19.7
Hänninen *et al.*[35 d]	2046	Population-based study	Office BP <140/90 and 7-day home BP monitoring ⩾135/85 mm Hg	17.9
Franklin *et al.*[37 e]	6439	Population-based 11-country IDACO [f] study	Untreated subjects with office isolated systolic hypertension and daytime BP ⩾135/85 mm Hg	9.0
Franklin *et al.*[37 e]	856	Population-based 11-country IDACO [f] study	Treated subjects with office isolated systolic hypertension and daytime BP ⩾135/85 mm Hg	16.0
Stergiou *et al.*[36 f]	662	Community-based study	Office BP <140/90 and 3-day home BP monitoring ⩾135/85 mm Hg	10.8
Obara *et al.*[43 g]	3400	Hypertensive patients receiving antihypertensive treatment in primary care settings	Office BP <140/90 and 14-day home BP monitoring ⩾135/85 mm Hg	54.5
Mallion *et al.*[44 h]	1150	Hypertensive patients aged ⩾60 years with controlled office BP	Office BP <140/90 and 4-day home BP monitoring ⩾135/85 mm Hg	40.0
Fagard[45]	391	Elderly hypertensives from primary care centers	Office BP <140/90 and daytime BP ⩾135/85 mm Hg	8.6

Abbreviations: ABPM, ambulatory blood pressure monitoring; BP, blood pressure.
[a]PAMELA (Pressioni Arteriose Monitorate e Loro Associazioni) study.
[b]Ohasama study.
[c]Random sample of 4581 Danes participated in the MONItoring of trends and determinants in Cardiovascular Disease (MONICA) health survey.
[d]Finn-Home study.
[e]IDACO (International Database on Ambulatory Blood Pressure in Relation to Cardiovascular Outcomes).
[f]Didima study.
[g]J-HOME (Japan Home versus Office BP Measurement Evaluation).
[h]SHEAF (Self measurement of blood pressure at Home in the Elderly: Assessment and Follow-Up).

underestimate the magnitude of the problem. The MH prevalence in population studies averaged 13%[19] and was previously estimated as <10% of the global hypertension population (Figure 2). Nevertheless, when looking for MH within office-controlled patients, up to 1 in 3 could have MH. Table 6 shows data regarding the prevalence of MH in various cohorts of controlled hypertensives from the Spanish ABPM Registry.[15,21–26] Table 7 shows corresponding data from other national and international registries, including those mentioned in the WCH section,[18,27–37] and 3 other studies from Sweden, Japan, and France.[42–44]

Patients with WCH are at risk of being managed as true hypertensives, undergoing laboratory tests, and overtreatment. On the other hand, patients with MH are at risk of under-detection and under-treatment. Because over one in three office-controlled patients could have MH, predictors of this condition are of key importance to detecting an ambulatory lack of BP control. In a recent analysis of the Spanish ABPM Registry, the clinical profile of patients with MH included male gender, obese, longer duration of hypertension, smoking habit, and diabetes: that is, patients with a high risk of an adverse cardiovascular event. Office BPs in the high-normal range (systolic 130–139 mm Hg and/or diastolic 85–89 mm Hg) also predicted MH.[15] These findings were consistent with data from previous studies looking for predictors of MH.[19,43,44]

CONCLUSIONS

Physicians are prone to two types of misclassifications when assessing BP statuses solely at the office. WCH and MH are highly prevalent conditions that could be present in up to one in three patients with seemingly uncontrolled BP and one in three with controlled BP, respectively. Patients with WCH are more frequently women, older, obese and have a low cardiovascular risk profile. Patients with MH are more frequently men, younger, obese, smokers, and have high-normal BPs at their doctor's office and a higher cardiovascular risk. Nevertheless, many patients with any of these predictors could have WCH or MH. Assessing ambulatory BPs using ABPM (and possibly by home BP monitoring if ABPM is not available) should be encouraged in the current management of hypertensive patients, both for diagnosis and for evaluation of BP control.

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