

Do primary care physicians follow the current recommendations for hypertensive pharmacotherapy?

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KEY WORDS

guideline compliance,
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ABSTRACT

INTRODUCTION In 2007, the joint recommendations of the European Society of Cardiology and the European Society of Hypertension (ESC/ESH) were announced.

OBJECTIVES The aim of this survey was to evaluate the implementation rate of the new ESC/ESH recommendations by primary care physicians and to assess the effectiveness of antihypertensive therapy.

PATIENTS AND METHODS Data concerning pharmacotherapy, blood pressure (BP) measurements, and compliance with the guidelines were collected in 10,880 hypertensive patients during 3 subsequent follow-up visits.

RESULTS Combined antihypertensive treatment (angiotensin converting enzyme inhibitors with β -blocker, diuretic, or calcium-channel blocker) was used in 69.2% of the patients at baseline. A combination of β -blocker with diuretic was prescribed in 7.4% of the patients. In 71% of these patients no history of cardiovascular events was reported (myocardial infarction, revascularization, or heart failure). Diuretics were not used in 20.7% of the patients receiving a 3-drug regimen and in 6.7% of those receiving a 4-drug regimen. BP target levels set by individual physicians were frequently lower than those recommended by the guidelines. The percentage of patients who reached the recommended BP target increased during the survey to 25.3%.

CONCLUSIONS A combination of β -blocker and diuretic is still commonly used in the treatment of hypertension in patients without coronary artery disease and heart failure. Despite the use of combination treatment in about 90% of hypertensive patients and attempts at reaching lower target BP values than those recommended by the guidelines, treatment targets were achieved only in one-fourth of the patients.

INTRODUCTION In 2007, the joint recommendations of the European Society of Cardiology and the European Society of Hypertension (ESC/ESH) were published.¹ These recommendations have reduced the target blood pressure (BP) level in patients with high and very high cardiovascular risk (stroke, myocardial infarction, chronic kidney disease, proteinuria, metabolic syndrome) to the same value as recommended in patients with diabetes (<130/80 mmHg).¹

Five classes of antihypertensive drugs: diuretics, calcium-channel blockers (CCBs), angiotensin-converting enzyme inhibitors (ACEIs), angiotensin II receptor antagonists type 1 (ARBs), and β -adrenergic receptor antagonists (β -blockers)

continue to be recommended for monotherapy in the treatment of hypertension.² It is now emphasized that β -blockers should not be used as the first-choice treatment in patients with metabolic syndrome and those at high risk of developing diabetes without other indications. The recommendations also permitted the use of lower doses of 2 antihypertensive drugs for the initial treatment of patients with severe hypertension. A combination of a β -blocker and diuretic was removed from the guidelines as the recommended therapy.¹

A survey conducted in Poland in 2005 among 125 primary care physicians demonstrated that the knowledge of doctors on the treatment of

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hypertension was in agreement with the most current recommendations in 61.2%.³ The longer the practice of a doctor was, the lower the compliance with the recommendations was observed. There are many reasons why physicians choose not to implement newer guidelines into clinical practice, including lack of agreement with the new guidelines, lack of self-efficacy, and inertia of the previous practice.⁴

Noncompliance of primary care physicians with the recommendations is one of the most important reasons for the low efficacy of hypertensive therapy. An epidemiological survey published in 2004, NATPOL III Plus, showed that only about one-fifth of the patients with hypertension in Poland receive effective treatment.⁵

The 2007 ESC/ESH recommendations were widely presented during congresses and meetings with doctors and were published in journals and new editions of handbooks. However, the effects of their implementation on the therapy of hypertension in Poland have not been assessed so far. Therefore, the aim of this survey was to evaluate the implementation of the new ESC/ESH recommendations and its effects on the outcomes of antihypertensive treatment in Poland.

PATIENTS AND METHODS This was a questionnaire survey conducted in 2010 and including 1068 primary care physicians who signed the declaration of participation. Physicians were recruited by medical representatives throughout the country. The medical representatives who distributed the questionnaires were obliged not to advertise any specific antihypertensive drug or drug combination. Each participating physician enrolled no more than 20 adult patients treated for hypertension for at least 4 weeks. There were no exclusion criteria. The study procedures were in accordance with the ethical standards and the Helsinki Declaration of 1975, as revised in 2008 in Seoul. The survey did not fulfill the criterion of a medical experiment and did not require an approval of a bioethics committee.

The study questionnaire was constructed by a research group. Two parts were to be completed during the first examination and the other 3 parts within 3 subsequent control examinations within 1- to 2-month intervals.

Study questionnaire The first part of the questionnaire included demographic data (sex, age, educational level, place of residence), weight, height, waist circumference, BP measurements, cardiovascular risk factors (cigarette smoking, alcohol consumption over 20 g/d up to 5 times/wk not to exceed 100 g/wk) and comorbidities such as diabetes, coronary artery disease, past myocardial infarcts, angioplasty, coronary artery bypass, heart failure, a history of stroke, lower limb atherosclerosis, hypercholesterolemia, hypertriglyceridemia, chronic kidney disease (defined as an estimated glomerular filtration rate <60 ml/min or serum creatinine >132 μ mol/l in men and >124 μ mol/l

in women), proteinuria >0.3 g/l, benign prostatic hyperplasia, asthma or chronic obstructive pulmonary disease, and gout.

The second part of the questionnaire included an interview about hypertension (duration of treatment, use of antihypertensive drugs, BP targets set for individual patients, and therapy compliance).

The remaining 3 identical parts of the questionnaire, which were completed during control visits, included data on changes in pharmacotherapy, assessing the use of medicines in accordance with the prescription, reasons for noncompliance, the rate of missed doses, and the values of BP measurements (in-office BP measurements were performed by physicians on the left arm after 5 minutes of rest in sitting position, using calibrated BP monitors).

Data analysis Overweight and obesity were classified according to the World Health Organization criteria. Visceral obesity was scored based on the 2005 International Diabetes Federation criteria.⁶

The mean values of office BP measurements for each patient were used in all analyses. A value of less than 140/90 mmHg was used as the therapeutic target for BP except in patients with high or very high cardiovascular risk (after myocardial infarction, myocardial revascularization, stroke, with diabetes, metabolic syndrome, chronic kidney disease, proteinuria). In these patients, the accepted target BP value was less than 130/80 mmHg (in accordance with the 2007 ESC/ESH recommendations).

Data analysis included the frequency of monotherapy and polytherapy, combined antihypertensive treatment, and the use of diuretics. We also analyzed concordance between BP targets set by physicians for individual patients and those provided in the recommendations. Furthermore, the effectiveness of antihypertensive therapy during the initial and subsequent visits and compliance with prescribed medication (rate of missed drug doses) were analyzed.

Statistical analysis A statistical analysis was performed using the STATISTICA 8.0 PL software. The results of demographic analysis are presented as percentages for categorical variables or as means with standard deviations for continuous variables. Separate groups were compared using the χ^2 and *t* test for independent variables. Changes in BP during subsequent visits were compared using the *t* test for dependent variables. The odds ratio was calculated based on logistic regression and multiple logistic regression. A *P* value of less than 0.05 was considered statistically significant.

RESULTS Characteristics of the study group The study group included 1880 patients with hypertension (TABLES 1 and 2). Patients with high and very high cardiovascular risk constituted 81.2% of the study group. The analysis of ongoing treatment showed that the recommended systolic and

TABLE 1 Characteristics of the study group (n = 10,880)

age, n (%)	18–40 years	838 (7.7)
	41–65 years	7.583 (69.7)
	>65 years	2.459 (22.6)
sex, men/women, %		55.3/44.7
place of residence, n (%)	village	2.622 (24.1)
	city	8258 (75.9)
education, n (%)	primary	1.186 (10.9)
	vocational	3.112 (28.6)
	secondary	4.515 (41.5)
	high	2.067 (19.0)
BMI, kg/m ²		29.4 ± 4.4
overweight, n (%)		4.929 (45.3)
obesity, n (%)		4.341 (39.9)
visceral obesity, n (%)		7.420 (68.2)
smokers, n (%)		5.331 (49.0)
alcohol consumption, n (%)	abstainers	1.349 (12.4)
	>30 g/d	1.360 (12.5)
concomitant diseases, n (%)	diabetes	3.405 (31.3)
	past myocardial infarction or revascularization	2.459 (22.6)
	heart failure	1.839 (16.9)
	past stroke	533 (4.9)
	peripheral artery disease	1.251 (11.5)
	chronic kidney disease ^a	751 (6.9)
	proteinuria >0.3 g/l	305 (2.8)
	asthma or chronic obstructive pulmonary disease	762 (7.0)
	hypercholesterolemia	6.582 (60.5)
	hypertriglyceridemia	2.742 (25.2)
	gout	555 (5.1)
	benign prostatic hyperplasia	1.051 (21.6)
duration of antihypertensive therapy, y		5.5 ± 4.8
SBP, mmHg		156 ± 15
DBP, mmHg		96 ± 8
good control of SBP ^a , n (%)		435 (4.0)
good control of DBP ^b , n (%)		446 (4.1)
antihypertensive drugs, n		2.2 ± 1.1

Data are shown as numbers with percentages and mean values ± standard deviations.

a eGFR <60 ml/min/1.73 m² or creatinine concentration >1.5 mg/dl in men and >1.4 mg/dl in women

b <130 mmHg; **c** <80 mmHg in patients with diabetes or high and very high cardiovascular risk

Abbreviations: BMI – body mass index, DBP – diastolic blood pressure, eGFR – estimated glomerular filtration rate, SBP – systolic blood pressure

diastolic BP targets were reached only in 4.0% and 4.1% of the patients, respectively.

Antihypertensive treatment ACEIs (40.8%), β-blockers (21.5%), ARBs (13.2%), CCBs (13.2%), diuretics (7.7%), and α-blockers (3.2%) were used in monotherapy. Sixty percent of the patients receiving α-blocker were not diagnosed with benign prostatic hyperplasia, and as many as 87.1% of the patients receiving β-blocker did not have a history of myocardial infarction or revascularization. The total rate of ACEI and ARB use was similar in all age categories, while the rate of CCB,

diuretic, and both α- and β-blocker use increased with age (**FIGURE 1**).

A total of 69.2% of the patients were prescribed combined antihypertensive treatment, typically including 2 (33.6% of the respondents) or 3 drugs (25.7%). A simultaneous use of up to 7 drugs was reported in a small subset of patients. Two-drug combinations usually included an ACEI with β-blocker (26.5% of the respondents), diuretic (20.9%), or CCB (8.2%). A combination of β-blocker with diuretic was prescribed in 7.4% of the patients. Less frequently, a CCB was combined

TABLE 2 Pharmacotherapy of hypertension in the study group

monotherapy, n (%)	3351 (30.8)
angiotensin-converting enzyme inhibitors, %	40.8
angiotensin II receptor antagonist type 1, %	13.2
calcium-channel blockers except verapamil and diltiazem, %	9.3
verapamil/diltiazem, %	3.9
β -adrenergic receptor antagonists except carvedilol, %	20.9
carvedilol, %	0.6
α -adrenergic receptor antagonists, %	3.2
diuretics (total), %	7.7
thiazides / thiazide-like, %	6.4
loop diuretics, %	1.0
spironolactone, %	0.3
methyldopa, %	0.4
polytherapy, n (%)	7529 (69.2)
2 drugs	3656 (33.6)
3 drugs	2796 (25.7)
4 drugs	762 (7.0)
5 drugs	272 (2.5)
6 drugs	33 (0.3)
7 drugs	10 (0.1)

with β -blocker (1.5%), ARB with diuretic (2.9%), and ACEI with ARB (2.4%).

Seventy-one percent of the patients receiving a β -blocker with diuretic did not have a history of myocardial infarction, revascularization, or heart failure. In a multiple regression analysis, the use of this drug combination was due to coronary artery disease: odds ratio [OR] = 2.31 (1.81–2.96); female sex: OR = 1.96 (1.56–2.50); rural dwelling: OR = 1.73 (1.35–2.21); normal weight: OR = 1.59 (1.25–2.00); higher educational level: OR = 1.68 (1.28–2.20), consumption of more than 30 g of ethanol per day: OR = 1.50 (1.06–2.12).

Only 20.7% of 3-drug and 6.7% of 4-drug antihypertensive regimens did not include diuretics. Diuretics were most commonly prescribed in a combination with ACEIs, CCBs, and β -blockers (25.3%). All 5- to 7-drug regimens included diuretics.

An ACEI was frequently combined with a β -blocker and diuretic (35.6%). Occasionally, an ARB with a β -blocker and diuretic (6.6%) or an ACEI with CCB and diuretic (7.4%) was prescribed. Among the regimens without a diuretic, the combination of an ACEI with CCB and β -blocker (7.0%) was most frequently used.

In a multiple regression analysis, only male sex (OR = 2.07; 1.69–2.55) and higher educational level (OR = 0.40; 0.28–0.56) were the explanatory variables for lack of diuretic use in multiple drug regimens.

Blood pressure targets Only in 34.7% of the patients with low cardiovascular risk and without diabetes and in 35.3% of those with diabetes or high and very high cardiovascular risk or both, the target systolic blood pressure (SBP) level set by individual physicians was in line with the current recommendations. Target SBP levels lower than those recommended by the ESC/ESH guidelines were reported in 75.3% of the patients with low cardiovascular risk and without diabetes and in 20.3% of the patients with diabetes or high and very high cardiovascular risk or both.

For diastolic blood pressure (DBP), the reported target levels were in line with the recommendations in 50% of the patients with low cardiovascular risk and without diabetes, and in 65.7% of the patients with diabetes or high and very high cardiovascular risk or both. Lower target levels than those recommended by the guidelines (<80 mmHg) were reported in 50% of the patients without diabetes and without high cardiovascular risk.

Compliance with medical treatment A total of 52.4% of the patients reported that they did not miss any antihypertensive drug dose in the last month. The mean number of missed dose episodes was 2.9 ± 1.2 per patient in the preceding month (FIGURE 2).

The rates of attendance at 3 subsequent follow-up visits were 98.2%, 94.6% and 89.6%, respectively. The percentage of patients who

FIGURE 1 Antihypertensive drugs used in monotherapy of hypertension in age groups (statistical significance vs. <50 years: **a** $P < 0.05$, **b** $P < 0.001$)
Abbreviations: ACEI – angiotensin-converting enzyme inhibitor, CCB – calcium-channel blocker

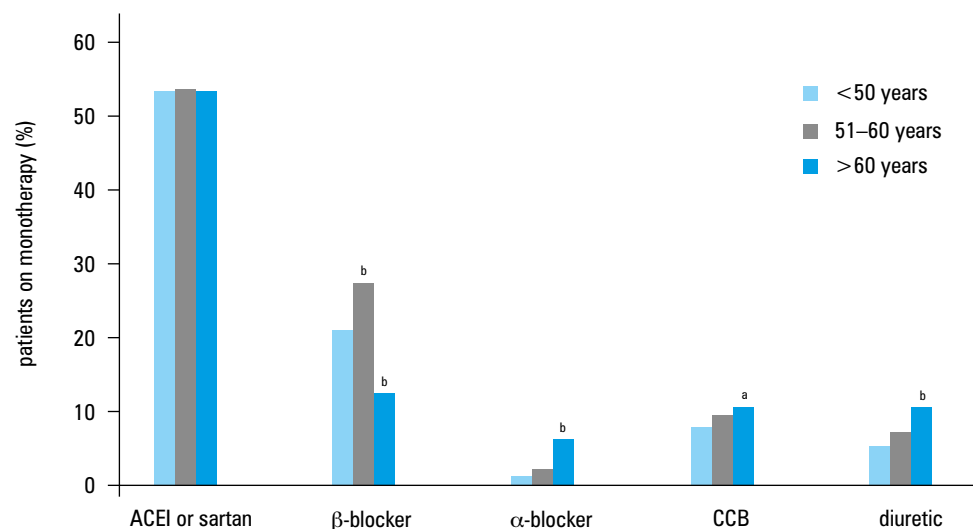


FIGURE 2 Rate of missed doses of antihypertensive drugs during the last month of the study

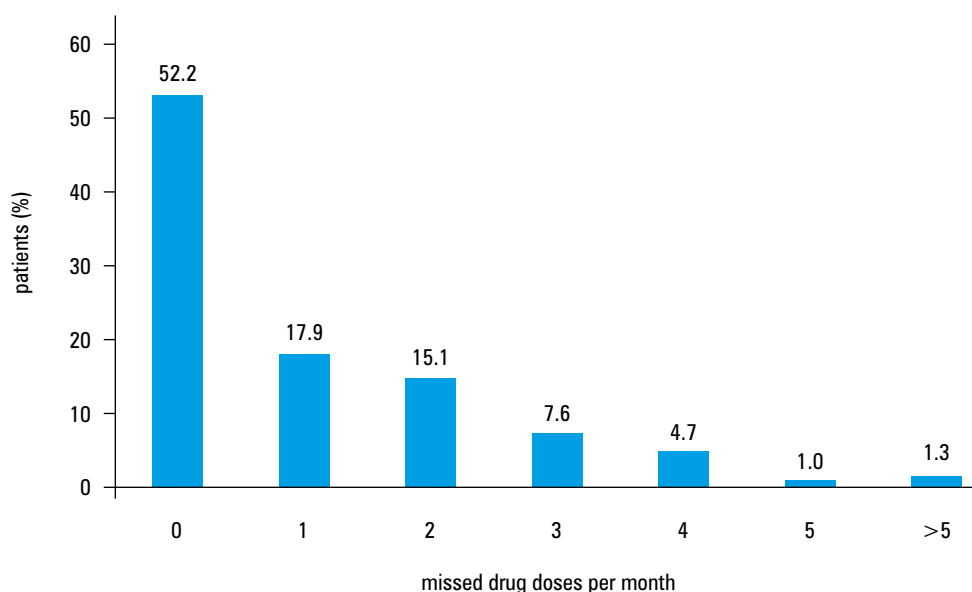
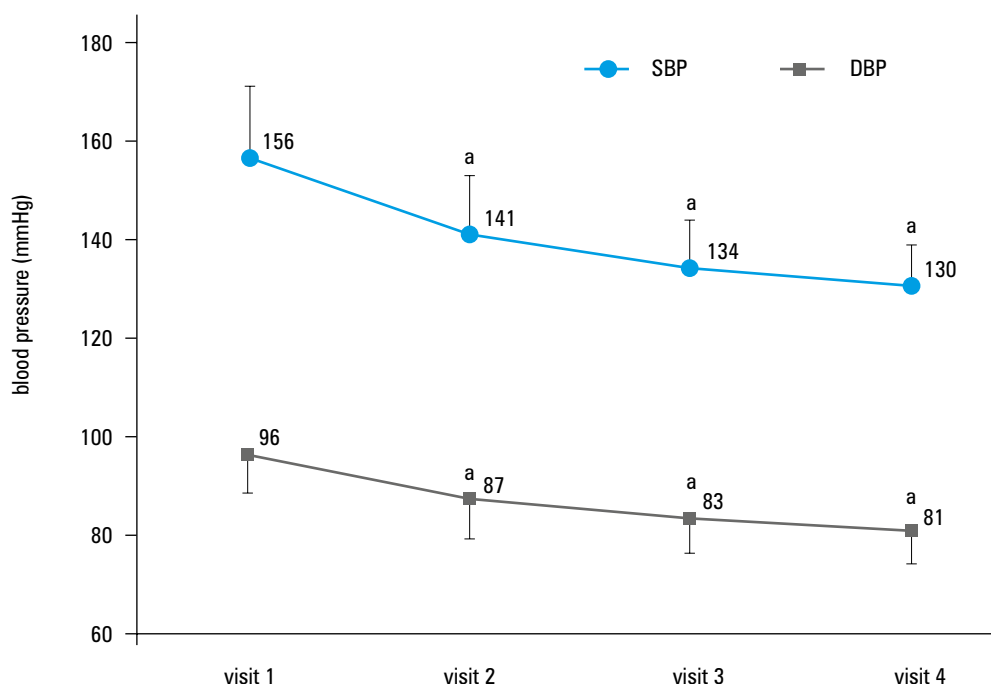


FIGURE 3 Changes in blood pressure during a 6-month follow-up in patients with hypertension (statistical significance vs. visit 1: **a** $P < 0.001$)
Abbreviations: see **TABLE 1**



complied with treatment increased from 93.2% to 97.3%. The main reason for discontinuation of the prescribed drug were side effects. One half of the patients did not accept the necessity of intensification of treatment or did not purchase the drug. Other patients were noncompliant with medication when they refused to take the newly prescribed drugs for BP lowering.

In a multiple regression analysis, noncompliance was associated with the educational status (OR = 1.15; 0.99–1.33; $P = 0.07$ for primary educational level; OR = 0.60; 0.53–0.68; $P < 0.001$ for higher educational level) and consumption of more than 30 g of ethanol per day (OR = 2.49; 2.18–2.89, $P < 0.001$).

The percentage of patients who missed their drug doses decreased significantly (from 47.6% to 30.7% at visit 4). The self-reported monthly rate of missed drug doses decreased from 2.9 ± 1.2 to 1.9 ± 1.4 per month.

Blood pressure control During the subsequent visits, steady decreases in BP were observed (**FIGURE 3**). SBP decreased by 26 ± 15 mmHg, while DBP by 15 ± 9 mmHg. The percentage of patients achieving recommended BP values increased significantly to 41.8% and 36.1% for SBP and DBP, respectively (**FIGURE 4**). The target levels of both SBP and DBP were obtained by 25.3% of the study group.

BP values and BP control during the first visit were similar among patients who presented at 3 subsequent follow-up visits (89.6%) and those who were lost to follow-up (10.4%).

The improvement of BP control was achieved by the prescription of additional drugs. At the end of the follow-up, only 9.1% of the patients were on monotherapy. The mean number of antihypertensive drugs had increased from 2.2 ± 1.1 to 2.9 ± 1.1 .

The greatest improvement of BP control was achieved among patients who initially missed no more than 1 drug dose per month. In this

subgroup, target SBP was achieved in 46.1% and target DBP in 39.9% of the patients. In the subgroup of patients who missed between 2 and 3 doses per month, target SBP and DBP levels were achieved in 33.5% and 28.7% of the patients, respectively, and in those with poorer compliance (missing at least 4 doses per month), the recommended values were reached only by 25.8% and 22.6% of the patients, respectively.

The poorest results were obtained in noncompliant patients, who stopped at least 1 medication. Among these patients, target levels of SBP and DBP were achieved in 30.5% and 25.4% of the patients, respectively, compared with 42.9% and 37.2% of the patients complying with the recommended therapy ($P < 0.001$). Noncompliance increased the risk of not achieving BP control: OR = 1.71 (1.43–2.05) for SBP and OR = 1.74 (1.44–2.10) for DBP.

Additionally, the recommended BP values were more frequently obtained in patients with normal body weight (SBP and DBP in 57.5% and 54.6% of the patients, respectively) than in overweight (41.9% and 37.3%, respectively) and obese patients (35.3% and 27.4%, respectively); $P < 0.001$. Also, the self-reported consumption of more than 30 g of ethanol per day was associated with an increased risk of not achieving the recommended BP control (OR = 1.68; 1.47–1.92 for SBP and OR = 2.41; 2.06–2.80 for DBP; both $P < 0.001$).

In a multiple regression analysis, the achievement of the recommended BP values was related to adherence: OR = 1.37 (1.23–1.52); visceral obesity: OR = 0.17 (0.15–0.19); and ethanol consumption: OR = 0.48 (0.39–0.58); higher educational level: OR = 1.37 (1.21–1.55); and rural area dwellers: OR = 1.41 (1.25–1.59).

DISCUSSION Five years have passed since the recent recommendations of the ESC/ESH on the diagnosis and treatment of hypertension were published. Despite the dissemination of these recommendations among health care practitioners during scientific conferences, training courses, and publications in literature, the results of this study indicate that primary care physicians are not implementing the recommendations in a complete or timely manner. Particularly surprising is the lack of knowledge concerning BP targets. The target levels were determined only in 34.7% (SBP) and 50% (DBP) of the patients without diabetes and low cardiovascular risk, and in 35.3% (SBP) and 65.7% (DBP) of the patients with diabetes or high cardiovascular risk. The target BP levels was often set below the recommended values (75.3% of the patients), especially in patients without diabetes and with low cardiovascular risk. A possible explanation for this phenomenon is both the lack of knowledge of the current recommendations by a large group of primary care physicians, and the intention to obtain more efficient BP control. On the other hand, the reduction of BP below the traditional threshold (140/90 mmHg) seems to be justifiable;

however, the decision requires adequate clinical experience and judgment and full assessment of risks and benefits.⁷ Despite lower target BP levels, the proper control of SBP at the end of the follow-up was achieved only in 41.8% of the patients.

The results show that it is not easy to achieve proper BP control in clinical practice. The obtained reductions in BP were attributed to regular check-ups, modification of pharmacotherapy, and the awareness of patients and physicians that targets were not being met, which, however, might have been related to the so called Hawthorne effect (awareness of the subjects that they are being studied).⁸

Poor BP control is a worldwide problem. Despite the frequent implementation of combined antihypertensive therapy, the effectiveness of hypertension treatment is poor, both in Poland and abroad.^{9–11} According to Sharma et al.,¹² less than 20% of all patients with elevated BP seen by primary care physicians have well-controlled BP.¹² Inadequate antihypertensive regimen is considered as the major reason for poor BP control.¹³

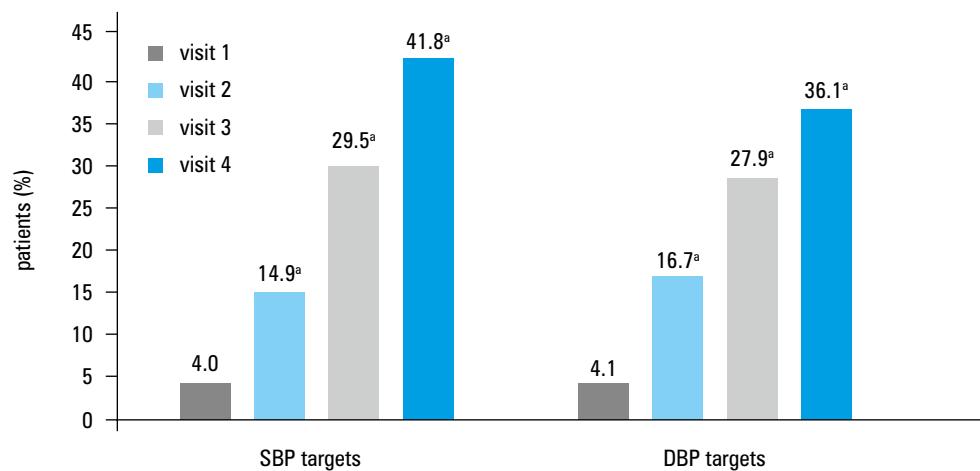
The percentage of patients who are prescribed combined antihypertensive treatment increased from 69.2% to 90.6%. The improvement of patient compliance was equally important. Noncompliance with implemented therapy in our study was associated with poor educational status and frequent alcohol consumption. The negative effects of alcohol consumption on compliance was also reported by Grodensky et al.¹⁴

Of interest, in our unselected population of patients, the achieved BP goals were not worse than those observed in large trials, such as ONTARGET or ADVANCE.^{15,16} Episodes of hypotension were relatively rare. Despite achieving such low mean BP values in the same group of patients compared with the above clinical trials, only 25.3% of the patients achieved the target levels recommended by the ESC/ESH (41.8% of SBP and 36.1% of DBP target). These results are not better than those in a Danish study, where optimal BP control was achieved in 29.1% of the 5413 hypertensive patients in primary care.¹⁷ Surprisingly, the rural dwelling in our study was associated with better BP control (OR = 1.41).

The reappraisal of the ESC/ESH recommendations from 2009 pointed out the weak evidence for BP targets below 140/90 mmHg, even in patients with diabetes.¹⁸ However, we cannot exclude that a further reduction in SBP to about 115 to 120 mmHg and DBP to 75 mmHg, as suggested by the results of the post-hoc analysis of large clinical trials,¹⁹ allows to further reduce cardiovascular risk, although not in all patients and particularly not in those with advanced age and atherosclerosis.

Our results showed that clinicians still quite often use β -blockers in monotherapy (21.5%), even in patients without symptomatic coronary artery disease (87.1%), and α -blockers (3.2%) in patients without diagnosed benign prostatic hyperplasia (60%). While this routine management

FIGURE 4 Percentage of patients who achieved target blood pressure values (statistical significance vs. visit 1: **a** $P < 0.001$)
Abbreviations: see **TABLE 1**



was accepted in the 2003 guidelines, it was no longer recommended in the 2007 update.²⁰ The frequent use of β -blockers in monotherapy is even more surprising, considering that these drugs are widely recognized to interfere with a metabolic profile (increased serum triglyceride levels, decreased serum high-density lipoprotein levels, and impaired glucose tolerance).²¹ Taylor et al.²² reported that the risk of diabetes was 28% higher among patients who took β -blockers than among those who took no medication, but this was not confirmed by other studies.^{23,24} Considering these discrepant results, it is advisable to use β -blockers only in patients with clear indications.

Keeping in mind the recommendation for the preferential use of diuretics and CCBs in monotherapy for elderly patients, especially those with isolated systolic hypertension, one could expect more frequent use of these drugs in patients older than 60 years. The use of diuretics and CCBs has also been recommended by the British Hypertension Society in patients older than 55 years²⁵; however, the differences in the frequency of use of these drugs between younger and older patients were relatively small (**FIGURE 1**).

An important aspect of this study is that it investigated the use of combinations of antihypertensive drugs. A significant finding was a particularly common use of β -blockers in combination with diuretics (7.4%), which has not been recommended since the results of the ASCOT study had been published in 2005.²⁶ What is even more important, 71% of the patients receiving a β -blocker with diuretic had no clear indication for such regimen. These drugs were more commonly prescribed in normal-weight women with higher education. Our study demonstrated that such combination is less effective than that of an ACEI with CCB in the prevention of adverse cardiovascular events. On the other hand, the combination of a β -blocker and CCB, which had been recommended for many years, constituted only 1.5% of the patients on double therapy, and the combination of ARB and diuretic (2.9%) also showed limited popularity among practitioners.

The last important clinical aspect of this study is that it provides the rationale for clinicians for

prescribing diuretics. It demonstrated that diuretics are not often used as monotherapy in Poland (7.7%), while they are the component of 79.3% of 3-drug and 93.3% of 4-drug regimens, and the stable component of 5-drug regimens and higher. Regarding diuretics, it should be noted that indapamide is metabolically neutral and highly effective in hypertensive patients, and should be a diuretic of choice in patients with diabetes.^{27,28} The underuse of diuretics in multi-drug regimen is a common reason for overdiagnosing of resistant hypertension. In practice, diuretics are included both too rarely and too late. A possible explanation for that is low compliance with the use of diuretics in ambulatory patients.²⁹

In our study, α -blockers were administered in 3.2% of the patients on monotherapy regardless of the current recommendations. It is stressed that the modest effect of α -blockers on BP lowering, their unconfirmed beneficial effect on cardiovascular risk, and neutral metabolic properties do not justify their use, especially in monotherapy, even in patients with benign prostate hyperplasia.³⁰

Our results are in line with a previous Polish report by Windak et al.³¹ showing that physicians' compliance with treatment guidelines was 51% and their decisions were based more on the actual level of BP than on the overall assessment of the patients' cardiovascular risk profile.³¹

The limitation of our study was the lack of home BP measurement values. Office BP measurements were performed with a variety of monitors, although validated. We cannot exclude some selection bias during patient enrollment by physicians. The number of patients who did not agree to participate was not recorded. Another limitation is the lack of questions concerning cardiac arrhythmias in the survey questionnaire, which may explain the results reporting the use of β -blockers. Moreover, the compliance was not evaluated on the basis of the number of taken medications but the frequency of missed drug doses.

In summary, a combination of a β -blocker and diuretic is still commonly used in patients with hypertension without coronary artery disease

and heart failure. Despite the fact that physicians implement BP targets lower than those recommended by the current guidelines and prescribe combined therapy in about 90% of hypertensive patients, BP targets are achieved only by one-fourth of these patients.

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Czy lekarze podstawowej opieki zdrowotnej lecząc chorych na nadciśnienie tętnicze postępują zgodnie z aktualnymi wytycznymi?

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SŁOWA KLUCZOWE

lekarze podstawowej opieki zdrowotnej, stosowanie zaleceń, wytyczne leczenia nadciśnienia tętniczego

STRESZCZENIE

WPROWADZENIE W 2007 r. wprowadzono wspólne wytyczne Europejskiego Towarzystwa Kardiologicznego i Europejskiego Towarzystwa Nadciśnienia Tętniczego (ESC/ESH).

CELE Celem badania była ocena stopnia wdrożenia nowych zaleceń ESC/ESH przez lekarzy podstawowej opieki zdrowotnej oraz skuteczności leczenia przeciwnadciśnieniowego.

PACJENCI I METODY Dane dotyczące rodzaju stosowanej farmakoterapii, wartości ciśnienia tętniczego krwi (*blood pressure* – BP) oraz zgodności postępowania z aktualnymi wytycznymi zostały zebrane u 10 880 pacjentów z nadciśnieniem tętniczym podczas 3 następujących po sobie wizyt kontrolnych.

WYNIKI Terapię skojarzoną (inhibitory konwertazy angiotensyny z β-blokerem, diuretykiem lub blokerem kanału wapniowego) stosowano początkowo u 69,2% chorych. β-bloker z diuretykiem stosowano u 7,4% pacjentów. U 71% tych chorych nie stwierdzono obciążeń kardiologicznych (przebytego zawału serca, procedur rewaskularyzacji, niewydolności serca). Leków moczopędnych nie stosowano w 20,7% przypadków schematu 3-lekowego i 6,7% przypadków schematu 4-lekowego. Docelowe wartości BP przyjęte przez lekarzy były często niższe, niż zalecane w wytycznych. Odsetek pacjentów, u których osiągnięto zalecane wartości BP zwiększył się w trakcie badania do 25,3%.

WNIOSKI Leczenie skojarzone β-blokerem i lekiem moczopędnym jest nadal powszechnie stosowane w leczeniu nadciśnienia u pacjentów bez choroby wieńcowej i niewydolności serca. Mimo stosowania leczenia skojarzonego u około 90% pacjentów z nadciśnieniem tętniczym oraz dążenia do docelowej wartości BP mniejszej niż zalecana w wytycznych, cele terapii osiągnięto tylko u około 1/4 chorych.

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