

ANALYSIS OF ANTIHYPERTENSIVE DRUG USE IN OUTPATIENTS POPULATION

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Objective: We evaluated the preference for drug use as monotherapy or combined antihypertensive treatment by the physicians' choice using a physicians' anonymous questioning.

Design and methods: 1326 physicians (926 general practitioners /GPs/, 184 outpatient specialists treating cardio-vascular patients, including cardiologists, and 216 in-hospital doctors from cardio-vascular departments) took part in the study. The GPs followed up 203 690 hypertensive patients, 174 539 of them are on antihypertensive therapy. 59% of all specialists' patients were with hypertension: 37% of them were with uncomplicated and 46.78% with complicated essential hypertension. The questionnaires were filled in between March and June 2003.

Results: We founded rather surprising data that ACE-inhibitors (ACE-i) appeared to be the drugs of the first choice in the treatment scheme of all physicians.

1) The preference for drug utilization as monotherapy or combined therapy was:

	ACE-i	diuretics	β -blockers	Ca-channel blockers	ARB	α_1 -blockers and α -agonists	vasodilators
GPs	39,61%	31,22%	18,91%	8%	1%	0,95%	0,27%;
outpatient specialists	35,2%;	28,85	24,44%	6,35%	2,44%	2,44%	0,24%
inhospital physicians	37,77%	29,21%	20,42%	7,83%	2,37%	1,9%	0,47%

2) The most effective antihypertensive drug class for monotherapy according to the questionnaire was as follows:

	ACE-i	diuretics	β -blockers	Ca-channel blockers	ARB	α_1 -blockers and α -agonists	vasodilators
GPs	59,12%	19,47%	12,05%	4,63%	3,75%	0,78%	0,16%
outpatient specialists	53,25%	17,32%	14,71%	3,89%	7,35%	3,02%	0,43%
inhospital physicians	54,37%	18,63%	13,68%	4,94%	6,84%	1,52%	0%

ACE-i and ARB: The ACE-inhibitors were used by GPs in 39,61% of cases as single drug therapy or combined therapy and by specialists – in 35,2%. In patients with a combined therapy, ACE-inhibitors are used in 37% of all cases and most frequently the preferred combination was with diuretic or calcium channel blocker. The rate difference of the ACE-inhibitors' use in the general practice was (in descending order): Enalapril - 71,18%, Captopril - 8,10%, Perindopril - 5,92%, Trandolapril - 5,78%, Fosinopril - 4,10%, Lisinopril - 3,42%, Moexipril, Quinapril and Ramipril – all of them by 1,46 %.

Angiotensin II antagonists (ARB) were underused. They were used in the everyday practice by 3,95% of all participating in this questionnaire GPs and at the same time by 56,14% of all specialists. The average prescription rate for angiotensin II blockers among GPs was 0,75% and among specialists – 3,47% of all consulted hypertensive patients. 41,93% of all participating physicians used angiotensin II antagonists with prescription rate of 1,98%.

Diuretics: In cases of combined hypertension therapy, diuretics were used in 34,12% of patients mostly in combination with an ACE-inhibitor (in 38,03% of all combinations). The corresponding numbers of the diuretics' use in the general practice was: Indapamide – 25,51%, Triamterene – 20,14%, Hydrochlorothiazide – 18,02%, Chlorthalidone – 17,91%, Furosemide – 13,42%, Spironolactone – 4,97%.

Calcium channel blockers: For treating hypertension, GPs used immediate release forms in 67,23% of patients and extended release forms – in 32,77%. Nifedipine was recommended in 36,33% (in 19,95% - extended release forms), diltiazem – in 28,57% (in 4,2% - extended release forms) and verapamil – in 30,36% (in 4,2% - extended release forms) of patients. Other drugs such as amlodipine and felodipine were used only in about 1% of patients' population. CCBs were chosen for combination therapy by 10,15% of physicians. The preferred combination was CCBs and ACE-inhibitors as it was pointed out in 16,21% of all questionnaires.

90,66% of GPs did not use reserpine and its combinations in the everyday practice, and only 9,34% of them used it which was about 0,31% of all prescriptions. Clonidine and the combinations with diuretic was prescribed by 89,11% of all physicians in 8,75% of all prescriptions (usually as the third etc line of therapy).

Conclusions: Bulgarian physicians currently changed their choice of antihypertensive therapy before the new guidelines appeared. The diuretics and the beta-blockers were shifted to the second and third line drug choice after the ACE-i. We suggested that this therapeutic approach was approved by the most physicians because of the well-known efficiency of ACE-i reducing cardiovascular morbidity and mortality.

The ACE-inhibitors were the most widely used antihypertensive agents in Bulgaria. Enalapril was the leading drug of choice because of the enormous evidence-based efficacy data. Despite the fact that new once-daily dosing agents were registered, they were still underused. The same fact emerged concerning the angiotensin II antagonists' use. We found an interesting discrepancy showing that the new antihypertensive drugs were well known by the specialists but the prescription rate of these new drugs was low so far not following the patients' needs.

In accordance with WHO-ISH, JNC VI and the Bulgarian Guidelines on hypertension treatment, the diuretics were proposed as drug group of first choice for monotherapy in noncomplicated hypertension. Even so, they actually were not used as the drug of choice in the "real life" in Bulgaria. The diuretics took the second place in the monomedication scheme after the ACE-inhibitors. In patients for whom a combined therapy was used for blood pressure control the usual combination was with diuretic. It was surprising that the most widely used diuretic was indapamid. Actually, there was no difference between the rate of diuretic prescription with respect to outpatients' GPs and specialists' practices and also there was no difference in the choice of first line diuretic used in hypertension treatment which was the indapamide in our series.

There was a clear evidence of CCBs decreasing use hypertension treatment. Despite the appearance of the new guidelines and recommendations for use of extended release forms, Bulgarian GPs kept on to prescribe two times more immediate release forms but not CCBs with prolonged effect. The use of CCB increased when drug combinations were prescribed. We found a net prevalence of a combination CCB and ACE-inhibitor. Verapamil/ACE-inhibitor was the most frequently used combination.