Difficulties in Achieving Arterial Hypertension Control

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Conflict of interest: We undersign, certificate that we do not have any financial or personal relationships that might bias the content of this work.

ABSTRACT

Objective: Our study aims to examine the effectiveness of arterial hypertension treatment on arterial pressure values in a group of people, by gender and age.

Material and methods: We performed an analytical prospective study, from 2007 to 2009, that included 2266 people; 674 subjects (397 women and 277 men) were diagnosed with essential systemic arterial hypertension, according to ESH (European Society of Hypertension) criteria. Medium age was 49 years. Therapy applied to all diagnosed patients consisted in: general measures (lifestyle modifications) and pharmacological treatment. Medication regimens implied: one agent (single drug therapy: inhibitors of angiotensin converting enzyme or angiotensin receptors blockers), two, three or more combined drugs (we used a combination of inhibitors of angiotensin converting enzyme or angiotensin receptors blockers and diuretics, beta-blockers, calcium channel blockers). Patients were followed up at 1 month, 3 and 6 month from the beginning of the study. Statistics used was EpiInfo6.

Results: Hypertension control was obtained for 33.38% of all patients; a better control was noticed for feminine gender (35.52%) over masculine gender (30.33%); distribution on age group showed the best control of the disease for the group aged 41 to 60 years old (19.92%) over those aged under 40 years (1.93%) and over 60 years (12.17%).

Conclusions: Patient’s poor compliance to treatment generates a suboptimal hypertension control, emphasizing that efforts for achieving goal blood pressure should continue.

Keywords: arterial hypertension, therapy, control

INTRODUCTION

Arterial hypertension (AHT) represents a health problem worldwide, being the most common entity treated by a physician (1-3). In our country there is an increased number of hypertensive people and a high incidence of death caused by this disease and its complications (4). As a consequence, hypertension control and treatment stand as a real challenge (5,6). Best control of hypertension is obtained in USA (27.4%) and France (27%), while, in Romania control is rated around 7%, a situation...
that have not changed during last years, despite all efforts made for an adequate therapy (7). Difficulties in achieving hypertension control derive mostly from a lack of patient’s cooperation.

Objective: the study aims to analyze effectiveness of hypertension treatment in a population from Cluj county (both urban and areas around), supervised by a family physician, generally and by gender and age.

MATERIAL AND METHODS

A study that included 2266 people was carried on during 2007-2009. Subjects enrolled in our study were patients registered to the same family physician. 674 people were diagnosed with arterial hypertension according to ESH criteria that imply: three different appointments with the physician (in order to exclude “white coat fear”), arterial pressure values of at least 140/90 mmHg or a patient already undergoing an antihypertensive therapy (8,9). Each selected individual was submitted to an interview based on a questionnaire. Anthropometric measures and laboratory tests were performed. Laboratory studies included: routine laboratory tests: cell blood count, serum electrolytes, serum creatinine, uric acid, glycemia, urinalysis; lipid profile: total cholesterol, low density lipoprotein and high density lipoprotein, triglycerides.

Study inclusion criteria were: age between 14 and 90 years old, diagnosis of arterial hypertension (patients diagnosed with secondary arterial hypertension, or a pathology that may lead in its course to hypertension were excluded), and patients agreement to participate to the study. Medium age was 49 years. We evaluated treatment and control of hypertension generally in the group of study and by gender and age. Assessment was performed at 1 month, 3 and 6 months from the beginning of treatment (we proceeded to a close follow up of patients in order to be able to respond to all their requests and to help them understand the importance of treatment and to avoid that healthcare professional’s attitude would influence the results).

Characteristics of subjects submitted to the study: a slightly predominance of feminine gender (there were 397 women and 277 men included in the study), 179 patients had a family history of cardiovascular events, 157 hypertensive people associated diabetes mellitus, 318 had obesity, 345 had dyslipidemia.

Therapy applied included: general measures, with lifestyle modifications and pharmacological treatment. Drug regimens consisted in: single drug, 2, 3 or more medicines. Lifestyle modifications were indicated to all patients and it implied: weight loss for those with obesity, a reduction of saturated fats and cholesterol, a balanced diet, a limited intake of salt and alcohol, an adequate intake of potassium, calcium and magnesium, exercise, smoking cessation (10-13). As single drug therapy we preferred angiotensin converting enzyme inhibitors (enalapril, ramipril, quinapril, perindopril) - for their effect of decreasing the risk for coronary disease or angiotensin II receptors blockers (sartans); in cases of 2, 3 or more drugs we chose a combination between angiotensin converting enzyme inhibitors or angiotensin II receptors inhibitors and diuretics/beta blockers/calcium channel blockers (14-20). Our choice for treatment was based on: arterial pressure values, age, patients history, comorbidities (obesity, dyslipidemia, diabetes mellitus), lifestyle (smoking, high intake of alcohol and salt, sedentary), patients risk profile, effect on cardiovascular risk factors, adverse reaction tolerance; when choosing a pharmacologic agent we always considered treatments cost. Therapy was established according to cardiovascular risk level (21-23).

To avoid participants withdrawal from the study due to disagreeable side effects of a medicine (for example: cough caused by angiotensin converting enzyme inhibitors), we replaced the incriminated pharmacological agent with a better tolerated one (24-27).

We must underline that we followed compelling rules when applying therapy: highest doses tolerated were achieved, drug association were carefully chosen (based on data from literature). Medical stuff involved in the study was available for assistance when requested, so that medical attitude could not be questioned upon the results obtained.

The study is an analytical prospective one. Statistics used was EpiInfo6. A value of p under 0.05 was considered statistic significant.

Ethical principles for Medical Research Involving Human Subjects elaborated by the declaration of Helsinki were respected.
RESULTS

About a third of all patients underwent monotherapy and the rest of them received combined treatment (2, 3 or more pharmacological agents). Most of the subjects (almost half of them) needed a combination of 2 agents (Figure 1).

We noticed persistent cough as a redundant side effect in a number of 13 hypertensive subjects (5.2%).

Generally, we obtained arterial hypertension control only for about a third of all individuals treated (Figure 2).

We found out a better control of hypertension for feminine gender (Figure 3).

Distribution on age groups showed the best control for patients aged 41 to 60 years (Figure 4).

We observed that over half of the hypertensive people associated mixt dyslipidemia, almost half associated obesity and a quarter were also diagnosed with diabetes mellitus (Table 1).

DISCUSSIONS

The goal of hypertension treatment is to reduce the risk of cardiovascular disease (28).

The objectives are: to make patients aware of the disease and motivate them, to explain all the benefits that derive from following the treatment accurately (decrease the risk of stroke and cardiovascular disease), to reduce blood pressure as close to normal values as possible (decrease the risk of complications), to slow down the progression of the disease, to improve health status and life quality, to modify lifestyle, to prolong life, to reduce associated morbidities (29-31).

National health surveys in different countries indicated a poor control of hypertension (32). Our study showed a control rate comparable to data from USA and Great Britain, and superior to other European countries and not

FIGURE 1. Hypertension therapy-type of medication

FIGURE 2. Hypertension control generally in the studied population

FIGURE 3. Hypertension control by gender

FIGURE 4. Hypertension control by age

TABLE 1. Associated morbidities of arterial hypertension in the group of study
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Concordant to SEPHAR study that pointed out a control of hypertension in Romania of only 7%. Other studies conducted in Romania, such as CARDIO-ZONE also indicated a poor control of hypertension in our country (33). Our results may be explained by: a decreased number of patients, particularities concerning medical education and geographic area of participants, availability and involvement of healthcare professionals from the medical unit where the survey was conducted.

Most of the patients involved in our study received a combination of 2 drugs. A third of all patients were administrated monotherapy. Only a small percentage underwent treatment that implied more than 3 drugs.

The results we obtained were, anyway, unsatisfying. The lack of an adequate control of hypertension is determined mainly by a reduced compliance of patients to treatment. This attitude is generated by the fact that people are not aware of how important therapy is and how serious the consequences of hypertension may be. In our study the suboptimal control of hypertension was generated by a reduced attendance to treatment and by not following the therapy properly—ignorance of general measures (lifestyle modification: balanced diet, physical activity, weight loss, limitation of alcohol intake and adjustment of dietary sodium, smoking cessation), inadequate drug doses or discontinued medication, or even giving up the treatment; last two situations were encountered especially after blood pressure values were reduced. Another reason for noncompliance (mentioned by some patients) was therapy costs—despite the fact that correlation between therapeutic agent (treatment costs) and financial status of the hypertensive people was considered from the beginning (34-40).

On what hypertension control by gender is concerned, better results were found out for feminine gender. This can be explained by a higher compliance of women to treatment and more easily proceeded lifestyle modifications (in a previous study we ascertained less inaccurate habits for women in comparison to men: alcohol intake, smoking, additional dietary sodium intake), as well as higher mobilization for physical activity, weight loss (esthetic reasons may have been involved) (41).

We ascertained that age group 41 to 60 years old were the best controlled. A higher adherence to therapy determined by a better understanding on hypertension meaning and on its consequences, a maturity of medical education, a stable financial status may have leaded to these results. Worst results were obtained for patients under 40 years old—not necessarily due to a lack of understanding the purpose of the therapy, but mostly, due to a tendency of minimizing the chances for disease consequences (coronary disease, stroke) and distrust that hypertension may occur at this age. The majority of our participants under 40 years old motivated their attitude by the absence of annoying symptoms, correlation of the disease with older people (generally over 50 years old), absence of a family record of hypertension, lack of confidence that applying general measures may lead to targeted values of blood pressure. We must also mention that due to decreased number of patients aged less than 40 years, the results may not be significant. For patients over 60 years of age we ascertained an inadequate treatment invoked by associated comorbidities, with the necessity of an increased number of drugs to be administered and, therefore a higher cost of treatment and by a lack of understanding the importance of an accurate therapy and of the consequences that may derive from not following the treatment. In a previous study we ascertained that patients aged over 60 years presented associated comorbidities in a larger number of cases (diabetes mellitus, obesity and dyslipidemia). Data are not concordant to those existing in specialty literature as, usually the group of hypertensive people aged over 60 years are more difficult to be treated in order to achieve goal blood pressure and we obtained a better control of hypertension for this group of age than other studies did (42,43).

Surprisingly, we found out that the “halves rules” described by Wilber and Barrow even since 1972, meaning that half of the hypertensive people are diagnosed, from these only half are treated, and out of them only half are controlled, also apply to our study (44).

Efforts to make people aware of what hypertension really means and what consequences may have if not treated should be made continuously. Patients need to be motivated to stay on their therapy plan even if that requires a more aggressive attitude of healthcare professionals.

Conclusions

1. Arterial hypertension control is not optimum, due a lack of compliance of patients to treatment.
2. Efforts to apply measures that increase patients’ involvement and compliance to therapy by understanding the disease and its serious consequences should be made continuously.

3. Healthcare professionals should apply a more aggressive therapeutic attitude for hypertensive people and they should encourage patients to take an active role in their own treatment.

REFERENCES


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