

ARTERIAL HYPERTENSION PREVALENCE IN A SEGMENT OF POPULATION RESIDING IN THE COUNTY OF ARGEȘ

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Abstract: Arterial hypertension represents a serious issue for all health systems around the world due to the unsatisfactory control (the failure to attain the target blood pressure standards recommended by manuals) and due to the frequent association with other cardiovascular risk factors and comorbidities (smoking, dyslipidemia, diabetes mellitus, obesity). This reality is also valid for the Romanian health system due to the growing prevalence of arterial hypertension among adults.(1) All these aspects also apply to the population from the county of Argeș. We considered useful the analysis of such a segment of population in order to point out the possible agreement between the significant data nationwide and to identify those features of the profile of Argeș hypertensive population which will allow the optimization of the hypertensive therapy.

Cuvinte cheie: hipertensiune arterială, prevalența, populație argeșeană

Rezumat: Hipertensiunea arterială (HTA) constituie o problemă majoră pentru toate sistemele de sănătate din întreaga lume datorită controlului nesatisfăcător (neatingerea valorilor tensionale “întă” recomandate de ghiduri) și asocierii frecvente cu alți factori de risc cardiovasculari și comorbidități (fumat, dislipidemie, diabet zaharat, obezitate). Această realitate este valabilă și pentru sistemul de sănătate românesc din cauza prevalenței crescute a hipertensiunii arteriale în rândul populației adulte (1). Toate aceste aspecte se aplică și populației argeșene. Am considerat utilă o analiză asupra unui segment al acestei populații pentru a surprinde eventuala concordanță a datelor semnificative statistic la nivel național și a identifica acele particularități ale profilului populației hipertensive argeșene ce vor permite optimizarea terapiei antihipertensive.

INTRODUCTION

In its double valence as both a disease and a risk factor, arterial hypertension represents a serious issue for all health systems around the world due to the unsatisfactory control (the failure to attain the target tension standards recommended by manuals) and due to the frequent association with other cardiovascular risk factors and comorbidities (smoking, dyslipidemia, diabetes mellitus, obesity). This reality is also valid for the Romanian health system due to the growing prevalence of arterial hypertension among adults.

The most efficient survey of estimating the prevalence and arterial hypertension control in Romania, SEPHAR, revealed the fact that 40,1% of the subjects of the study suffer from arterial hypertension, the most vulnerable age categories being between 55-64 years old and beyond 65 years old, whereas only 7% from the hypertensive patients were well-monitored therapeutically.

THE RESEARCH HYPOTHESIS

The influence of the type of society and, implicitly, of the eating habits, physical activity, alcohol consumption and level of education is obvious. Inadequate diet, the increased salt intake and the lack of physical activity lead to the growing prevalence of arterial hypertension, certain differences and the growth of blood pressure along with aging being recorded in certain regions of the country.

All these aspects apply to the population of the county

of Argeș. According to SEPHAR, the county of Argeș lies in the southern part of the country, being characterized by a rate of 46% regarding the prevalence of arterial hypertension (100 subjects), among whom 11,2% (45), women and 13,5% (55), men.

We considered useful the analysis of such a segment of population in order to point out the possible agreement between the significant data nationwide and to identify those features of the profile of the Argeș hypertensive population which will allow the optimization of hypertensive therapy.

This research hypothesis had certain amendments. The segment of population under analysis does not include all the cases of arterial hypertension that have been recorded in the county of Argeș due to two reasons:

- Not all the individuals that suffer from arterial hypertension resort to the medical services provided by this particular health unit, most of them resort to other units that are closer to their residence or to the primary care network which directs them to the outpatient integrated specialty; the survey has taken into consideration only the hospitalized patients, excluding those treated in the Emergency Room, or those within the outpatient integrated specialty or those seen in day hospital treatment.
- There is a possibility for a significant number of individuals not to be aware of suffering from arterial hypertension and consequently, not to appeal to a specialist advice and not to obey the control protocol of tensional

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values.

MATERIAL AND METHOD

The present survey is retrospective one and includes the patients hospitalized in the County Emergency Hospital Pitești between May 2007 and December 2010. The main data resources that have been used were the general clinical observation sheets of those patients hospitalized in the Department of Cardiology, as well as the database of Pitești County Emergency Hospital, a software provided by Hippocrates – an integrated management system of medical activity. Regarding the respective data, the following operational criteria have been applied: age, sex, area of origin, level of education, main pharmacological groups and MIC 10 code for identifying arterial hypertension and the associated pathology. The information has been centralized, processed and transposed in representative and interpreted tables and graphs.

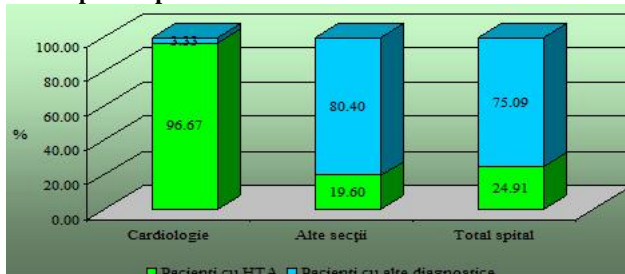
RESULTS AND DISCUSSIONS

The share of hypertensive patients from the Emergency Hospital of the county of Argeș

Table no. 1. Distribution of patients of the Emergency Hospital of the county of Argeș

	Total of patients	arterial hypertension patients	Of which with arterial hypertension:	
			primary	secondary
Cardiology	12235	11827	2044	9783
Other sections	165150	32368	1286	31082
Total hospital	177385	44195	3330	40865

Figure no. 1. The share of arterial hypertension patients per the hospital departments



The high share of patients suffering from severe blood pressure (arterial hypertension) in the department of cardiology (96.67%) along with a hospital-wide significant rate (25%) with an average annual of about 42 000 patients indicate the fact that arterial hypertension is a real public health problem.

Table no. 2. Distribution of patients in the department of cardiology

	arterial hypertension	Of which		Another primary diagnosis	Total cardiology
		Primary	Secondary		
Cardiology patients	11827	2044	9783	408	12235

The rate of 96.67% sustains the idea that arterial hypertension is the main cause of cardiovascular morbidity.

Arterial hypertension appears as secondary diagnosis in a rate of about five times higher than the primary diagnosis, as

hospitalization is caused by arterial hypertension complications, which are mainly mentioned as primary diagnosis. In the below chart, the rate of 17.28% includes especially the newly discovered cases of arterial hypertension, without complications or arterial hypertension upon onset.

Moreover, one can also consider the economic-financial aspect caused by the manner of funding a hospital that is the GRD system, which influences the coding option. Also, by developing primary care, unaltered arterial hypertension can be treated ambulatorily, such cases not being recorded in our statistics.

Figure no. 2. The share of hypertensive patients in the department of cardiology of the Emergency Hospital of the county of Argeș

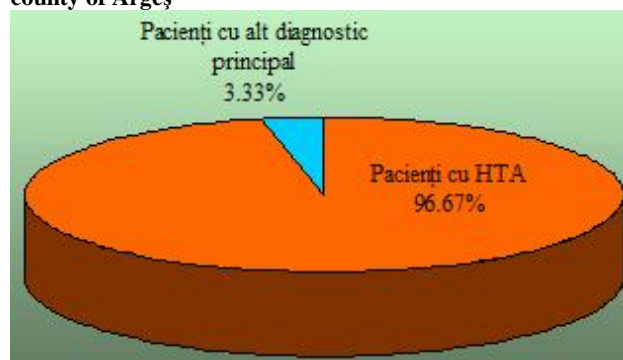


Figure no. 3. The arterial hypertension share as primary diagnosis for hospitalization in the department of cardiology of the Emergency Hospital of the county of Argeș

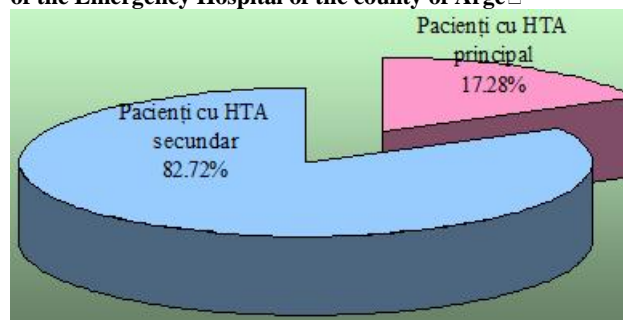
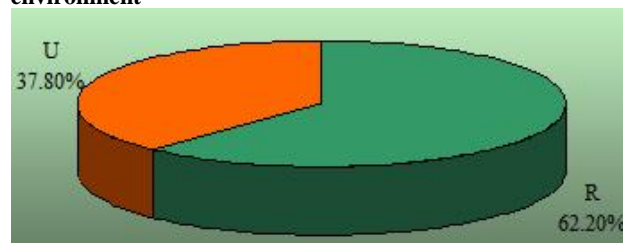


Figure no. 4. Structure of hypertensive patients in the department of cardiology depending on the origin environment



The patients in rural areas check their blood pressure less efficiently, which leads to frequent complications, causing hospitalization in a much higher rate than the urban patients. The latter are better informed, they have easier access to the primary care network, to specialized outpatient and even to university clinics (in the neighbourhood of the city of București) a fact which argues the lower position of these patients in the present statistics. Rural preponderance can also be explained by a low level of information in rural areas, insufficient health education, lack of awareness regarding the

suffering from arterial hypertension only when major complications occur and when hospitalization is imminent.

For all age categories, there have not been reported major differences, statistically speaking, ($p=0,063 > 0,01 - t$ tissue) between hypertensive men and hypertensive women although the rates indicate that for men under 60, arterial hypertension prevalence is higher, whereas the number of arterial hypertension women is larger over 60.

The frequency of arterial hypertension and its complications grows along with age, in a close relation with the patient's gender.

Table no. 3. Age distribution of the patients hospitalized in the department of cardiology

Age	Patients		Of whom		
	No	%	Men		Women
			Nor	%	No
Under 40	1375	11.63	806	12.84	426
40-60	5123	43.32	877	45.82	2304
over 60	5328	45.05	2595	41.34	2819
total	11827	100	6278	100	5549

Figure no. 5. Age distribution of the patients hospitalized in the department of cardiology

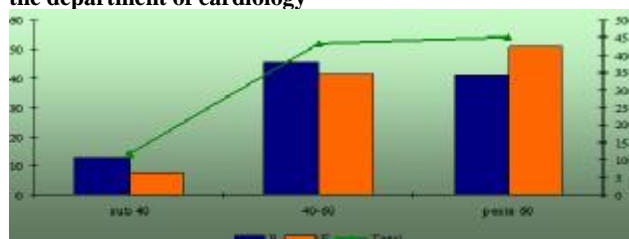
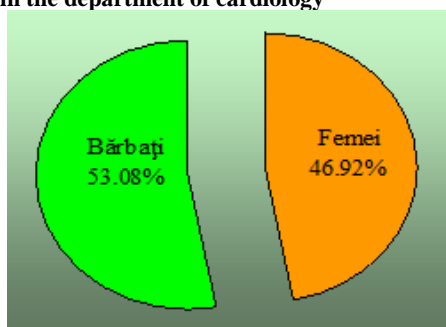


Table no. 4. Distribution of arterial hypertension patients in the department of cardiology by gender and residence environment

	Gender		Residence environment	
	Women	Men	Urban	Rural
arterial hypertension patients	5549	6278	4471	7356

Figure no. 6. Gender distribution of arterial hypertension patients in the department of cardiology



Although there are not any significant differences between the two categories of hypertensive patients, the higher rate of men confirms the data in medical literature. Hypertensive men with complications are more numerous than women with complications, the former being hospitalized more frequently. In reality, populations are sensitively equal but there intervenes

men's increased addressability because of severe complications. From a different perspective, men are more vulnerable to heart disease in the age range between 40 and 60 in comparison to women who strike manifestation of cardiac damage after menopause, arterial hypertension frequency and its complications being higher over 65.

It is to be noticed that those patients with low and average level of education implicitly had a low adherence to treatment, unsatisfactory control of blood pressure, which led to the growth of the number of hospitalization days because of unfavourable evolution and occurrence of complications. The higher level of training implies more information and care for health causing an increase of addressability towards other healthcare networks and fewer hospitalization stays.

Table no. 5. Distribution of arterial hypertension patients depending on the level of education

Level of education	Number of patients	%
Low	3977	33.63
Average	5586	47.23
High	2264	19.14
Total	11827	100

Figure no. 7. Distribution of arterial hypertension patients depending on the level of education

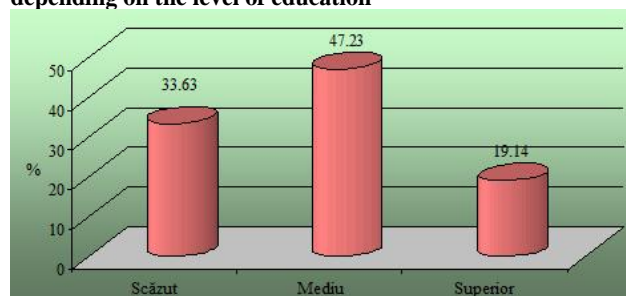
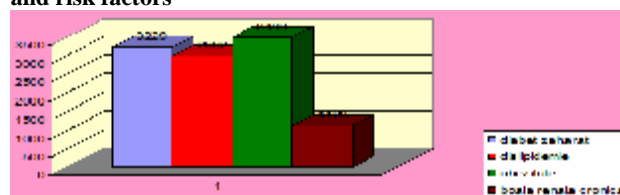


Table no. 6. Structuring of hypertensive patients in the department of cardiology depending on associated pathology and risk factors

Patients	Type II diabetes		Dyslipidemia		Obesity		Chronic kidney disease
	%	No. of patients	%	No. of patients	%	No. of patients	%
M	63.2	2041	54.6	1634	52.8	1842	54.3
W	36.8	1188	45.4	1358	47.2	1647	45.7
Total	27.3	3229	25.3	2992	29.5	3489	9.5

Figure no. 8. Structuring the hypertensive patients in the department of cardiology depending on associated pathology and risk factors



Arterial hypertension and type II diabetes coexist in a rate of 27,3%, both disease having mechanisms and interrelations which lead to endothelial dysfunction, occurrence of atherosclerosis and cardiovascular events. Also, obesity and dyslipidemia reached high levels, turning into cardiovascular risk factors. A rate of 29,5% of hypertensive patients were

associated with obesity, leading to a statistically significant difference from normal weight hypertensive patients. ($p = 0.00000412 < \alpha = 0.01$ z Test)

Structuring by gender the population which presented risk factors and comorbidities revealed a men's preponderance, the difference between the two genders having statistical significance (z test was applied; type II diabetes group - $p = 0.009971 < \alpha = 0.01$; dyslipidemia group - $p = 0.002044 < \alpha = 0.01$; obesity group - $p = 0.001417 < \alpha = 0.01$; chronic kidney disease group - $p = 0.001924 < \alpha = 0.01$).

Figure no. 9. Distribution of arterial hypertension men and women in the department of cardiology depending on cardiovascular risk factors and comorbidities

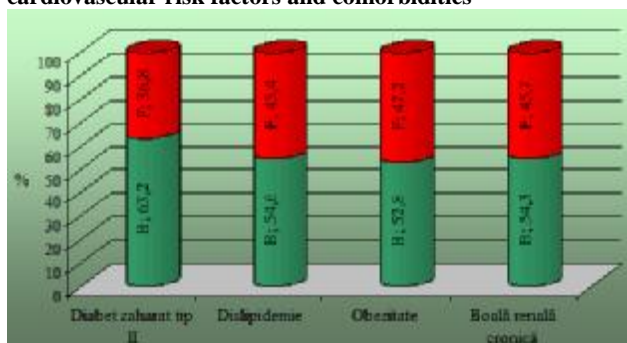
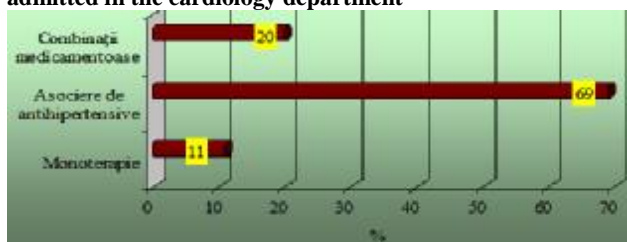


Table no. 7. Types of hypertensive therapy of patients admitted in the Cardiology Department

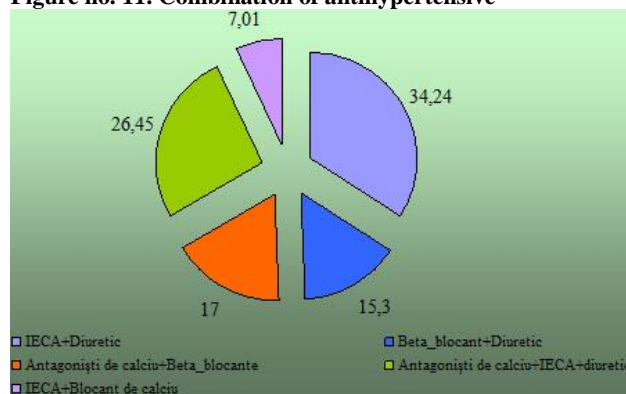
Patients	Monotherapy	Combination of antihypertensive	Drug combinations
Total: (%)	11%	69%	20%

Figure no. 10. Types of hypertensive therapy of patients admitted in the cardiology department



The rate of 11% include patients newly-diagnosed with arterial hypertension or those with arterial hypertension grade 1 and 2, while the combination of antihypertensive and drug combination have been used in severe and uncontrolled arterial hypertension, with multiple complications. Both in monotherapy and associated therapies, ACEI (angiotensin converting enzyme inhibitors) have been used in high rates due to their efficiency in decreasing systolic and diastolic blood pressure and cardiac and renal protection offered by this pharmacological group. Also, ACEI are recommended as being the best option for the hypertensive patients who also suffer from diabetes mellitus.

Figure no. 11. Combination of antihypertensive



CONCLUSIONS

Following the analysis made on the segment of hypertensive patients admitted to the Emergency Hospital of the county of Pitești, one may conclude that arterial hypertension is a real health problem for the county of Argeș as well, while the profile of Argeș hypertensive population is similar to that described by the medical literature and the therapeutic approach must follow the recommendations of the Guidelines for hypertension management 2007, with clear consequences in reducing cardiovascular morbidity and mortality in this area.

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