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Evaluation of Patients Cooperation in Hypertension Control

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ABSTRACT

Introduction: Hypertension (high blood pressure) is one of the most widely spread diseases of our time and one of the leading risk factors for heart and vascular diseases, particularly stroke and coronary heart disease. According to the World Health Organization (WHO) cardiovascular diseases are the leading cause of death in the world of who dies each year about 17 million persons, of which 5 million in Europe. The World Health Organization estimates based on monitoring of demographic trends, trends in mortality and morbidity as economic models, further growth of cardiovascular diseases, especially in developing countries. **Goal:** Correlate the success of antihypertensive therapy and provoking factors, and to determine the degree of satisfaction with the effect of antihypertensive therapy of the patient. **Material and methods:** The study was conducted at the Primary Health Care Center Stari Grad - Sarajevo. Conducted is study that included 80 patients. Data for this study were collected by a questionnaire. The questionnaire was completed by the examiner using interviews with patients and their relatives (parents, guardians). After sorting, control and grouping the data were imported into the statistical software package SPSS 20.0, where after defining variables was performed statistical analysis. **Results:** The average age of male respondents was 60.80 ± 13.03 and 63.50 ± 7.48 years of female respondents. The average value of systolic blood pressure amounted to 148 mmHg (130-180), while the average value of diastolic blood pressure was 88.75 mmHg (70-120). Student's t test showed that the average value of systolic pressure was statistically significantly different from the reference value ($t=2.387$, $DF=19$, $p=0.028$), and also the average values of diastolic blood pressure were statistically significantly different compared to baseline ($p=3.561$, $DF=19$, $p=0.002$). Of the total number of subjects included in this study good blood pressure control had 58 participants, and the average value of systolic blood pressure was 122 mmHg and diastolic 74 mmHg. With poor regulation of blood pressure were 22 patients, with average values of systolic pressure of 155.5 mmHg and diastolic 92 mmHg. The most common additional factor influencing the increase in blood pressure of patients surveyed was stress is 65 % ($n=52$), followed by heat 20% ($n=16$), and salty foods was a provoking factor in 15% ($n=12$) subjects. By analyzing the frequency of controlling blood pressure has been determined that respondents on average control blood pressure once a week, and control frequency is in range from daily to monthly. The average value of the blood pressure of subjects who regularly used antihypertensive therapy amounted to 125/69 mmHg, while the respondents who did not regularly use the antihypertensive therapy that value was 157/96 mmHg.

Key words: patient, hypertension, therapy.

1. INTRODUCTION

Nowadays, cardiovascular diseases are the leading cause of death in the world and as such are the biggest problem in health systems due to the cost, which are allocated for the purpose of prevention and treatment. Today we speak openly about the epidemic of cardiovascular diseases. According to the World Health Organization (WHO) cardiovascular diseases are the leading cause of death in the world due to which die each year about 17 million people, of which 5 millions in Europe.

The World Health Organization estimates based on the observed demographic development trends, trends in mortality and morbidity as economic models, further increase in cardiovascular diseases, especially in developing countries.

The estimates for the 2020 predict that the ischemic heart disease in the world will be at the first place, and cerebrovascular

diseases ranked fourth of all patients. Of this number of patients, the highest number of those who are affected by cardiovascular disease are from developing countries, countries with low rates of education of the population and with a small gross national income GNI per capita (1, 2). Population studies conducted worldwide showed that between 15-37% of the adult population is affected by hypertension (3). It has been shown that the blood pressure in the population varies by gender and level of education. Many studies show that blood pressure tends to have lower values among people with higher education levels (4).

2. GOAL

Correlate the success of antihypertensive therapy and provoking factors, and to determine the degree of patient satisfaction with the effect of antihypertensive therapy.

3. MATERIAL AND METHODS

The study was conducted at the Primary Health Care Center Stari Grad-Sarajevo. Conducted study included 80 patients. Data for this study were collected by a questionnaire. The questionnaire was filled by the examiner using interviews with patients or accompanying persons (parents, guardians). After sorting, grouping and control the data were imported to the statistical software package SPSS 20.0, where after defining variables was performed statistical analysis. For analysis of the distribution was used Shapiro-Willk test. Qualitative variables were analyzed by chi square test, using the crosstabs and contingency tables. Quantifying variables were analyzed by ANOVA, and the level of significance was taken $p < 0.05$.

4. RESULTS

The average age of the surveyed patients in this study was 62.15 ± 10.43 years (Table 1). The average age of male respondents was 60.80 ± 13.03 , and of female respondents 63.50 ± 7.48 years. Analysis of variance showed that there was no statistically significant difference in age of patients in relation to gender $F = 0.323$, $p = 0.577$.

	N	X	SD	SEM	Minimum	Maximum
Male	40	60.80	13.03	4.12	34.00	80.00
Female	40	63.50	7.48	2.36	52.00	73.00
Total	80	62.15	10.43	2.33	34.00	80.00

Table 1. The age structure of the surveyed patients

Table 2 shows the average blood pressure of the patients. The average value of systolic pressure amounted to 148 mmHg (130-180), while the average value of diastolic blood pressure was 88.75 mmHg (70-120). Student's t test showed that the average value of systolic blood pressure were statistically significantly different from the reference value ($t = 2.387$, $DF = 19$, $p = 0.028$), and also the average values of diastolic blood pressure were statistically significantly different compared to baseline ($p = 3.561$, $DF = 19$, $p = 0.002$).

		N	X	SD	SEM	Min	Max
Systolic	Male	40	142.00	9.18	2.90	130.00	160.00
	Female	40	154.00	17.60	5.56	130.00	180.00
Diastolic	Male	40	85.50	7.61	2.40	75.00	100.00
	Female	40	92.00	13.16	4.16	70.00	120.00

Table 2. Average values of blood pressure

From the total number of subjects included in this study good blood pressure control had 58 participants, and the average value of systolic blood pressure in this group were 122 mmHg and diastolic 74 mmHg. With poor regulation of blood pressure was 22 patients, with average values of systolic pressure of 155.5 mmHg and diastolic 92 mmHg (Table 3).

		N	X	SD	SEM	Min	Max
Good regulation	Systolic	58	122.00	11.18	1.90	100.00	140.00
	Diastolic		74.00	10.02	4.06	70.00	85.00
Poor regulation	Systolic	22	155.50	17.61	2.05	135.00	180.00
	Diastolic		92.00	18.08	4.42	90.00	120.00

Table 3. The frequency of good and poor regulation of blood pressure among the surveyed respondents

The most common additional factor influencing the increase in blood pressure was stress is 65% ($n = 52$), followed by heat 20% ($n = 16$), and salty foods was a provoking factor in 15% ($n = 12$)

Figure 1. The frequency of additional factors affecting the blood pressure increase

of patients (Figure 1). Chi square test showed a statistically significant difference in the incidence of additional factors, and stress as the dominant factor that causes deterioration of blood pressure control, $\chi^2 = 9.100$, $DF = 2$, $p = 0.011$.

By analyzing the frequency of blood pressure measurements has been determined that respondents on average control blood pressure once a week, and measurements range from daily to once a month (Table 4).

	N	X	SD	SEM	Minimum	Maximum
Male	40	6.00	5.45	1.72	2.00	15.00
Female	40	9.30	9.10	2.87	1.00	30.00
Total	80	7.65	7.49	1.67	1.00	30.00

Table 4. Frequency of blood pressure measurements

The average duration of hypertension in the sample was 10.08 ± 5.94 years and ranged from 1 to 19 years, as shown in Table 5.

	N	X	SD	SEM	Minimum	Maximum
Male	40	6.60	4.76	1.50	1.00	14.00
Female	40	9.60	6.85	2.16	4.00	19.00
Total	80	8.10	5.94	1.32	1.00	19.00

Table 5. The hypertension duration

Among all respondents 90% of patients ($n = 72$) regularly take antihypertensive medication, while only 10% ($n = 8$) of patients do not take medication regularly (Figure 2). The average value of the blood pressure of respondents who regularly used antihypertensive therapy amounted to 125/69 mmHg, while among the respondents who did not regularly use the antihypertensive therapy the average value of BP was 157/96 mmHg (Table 6).

Figure 2. The frequency of regular antihypertensives use

Regular therapy		N	X	SD	SEM	Min	Max
Yes	Systolic	72	125.00	9.42	1.55	100.00	145.00
	Diastolic		69.00	8.87	3.52	65.00	90.00
No	Systolic	8	157.00	11.10	3.05	142.00	180.00
	Diastolic		96.00	14.35	2.56	90.00	125.00

Table 6. The values of blood pressure in case of regular therapy use

5. DISCUSSION

Arterial hypertension is a major independent factor of morbidity and mortality, and this was confirmed by the results of Murray and Lopez (1997) where it is, in the countries of the former socialist economies, listed as the third risk factor for lost years of life, just after smoking and alcohol. According to the World Health Organization and the International Society of Hypertension is defined as elevated blood pressure when the level of systolic blood pressure is 140mmHg or more, and/or the level of diastolic blood pressure is 90mmHg or more, in repeated measurements (5). Public health significance of hypertension stems from the fact that it was an independent risk factor for cardiovascular disease (5). Risk increases continuously with the increase in blood pressure value above the level which is considered to be within the normal range (6). Higher values of blood pressure increase the likelihood of myocardial infarction, heart failure, stroke, and kidney disease (6). For individuals aged 40-70 years, any increase in systolic blood pressure of 20mmHg or diastolic blood pressure increase of 10mmHg doubles the risk of developing cardiovascular disease (7). By the individual measurements 15-25 % of the adult population has high blood pressure (>160/90mmHg). In half of them, hypertension persisted at follow-up. The prevalence of hypertension increases with age of 40 years (7). Surveyed respondents of this study belonged to a group of elderly (>60 years) or a group in which the incidence of hypertension is extremely high. With the use of antihypertensive therapy average blood pressure is located in the upper range of normal values. Over the centuries the health risks substantially changed, and the most pervasive health risks changes have occurred in the second half of the twentieth century. There have been changes in lifestyle and habits of the people, especially in nutrition, physical activity, consumption of cigarettes and alcohol, the incidence of stress and stressful situations. These lifestyle changes are of the critical importance for the general health in the 21st century and pose a health risk transition that has caused an alarming increase in risk factors in the developing and underdeveloped countries (8). Sedentary lifestyle with unhealthy habits—smoking, meals rich in calories and excessive salt consumption slowly leads to heart

failure (9). Subjects covered in this study most often cited as an additional factor the stress that causes an increase in blood pressure. They also mentioned that blood pressure also affect heat and salty foods.

6. CONCLUSION

After analysis of the survey we came to the conclusion that patients with diagnosis of hypertension, are mainly older, and that the regular intake of therapy and disciplined approach to the disease, mainly reduce blood pressure to physiological values. However, there are additional provoking factors causing an imbalance between the therapy that is used and the values of systolic and diastolic blood pressure.

Conflict of interest: NONE DECLARED.

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