

RECOVERY OF HYPERTENSION THROUGH PHYSICAL THERAPY, DIET AND MOVEMENT

Liviu Alexandru TRĂILĂ¹

Abstract: *Hypertension can have on long term consequences of several organs causing severe complications: retinopathy, hypertensive encephalopathy hypertensive, renal, aorta dissecting it or can cause death through powerful complications: myocardial heartattack, cerebral accident, etc. The aim of this work was recovering through physiotherapy, diet and movement for maintaining functional capacity, in parallel with the decrease of the blood pressure value. In the range 15.09.2015-15.12.2015 we conducted a study in a group of 26 patients with hypertension. The results were good in patients who meet strict guidelines, requiring drug therapy to be reduced as dosage. The study showed the importance of physiotherapy treatment, diet and motion, beside the one medication. Early detection of the disease is very important to prevent serious complications of hypertension.*

Key-words: *hypertension, pressure, factors.*

1. Introduction

Hypertension is a disease etiology and pathogenesis incompletely understood, characterized by increased pressure values under circulating blood into the aortic.

Normal blood pressure values are between 100-140 mm Hg for systolic (SBP) voltage and between 60 to 90 mm Hg diastolic voltage (TAD).

It is considered pathological values equal to or greater than 160 mm Hg for TAS and greater than or equal to 95 mm Hg for TAD. The boundary between the normal and pathological lies between 140/90 mmHg and 160/95 mmHg [1].

The HTA represents a major cardiovascular risk factor, with a steadily increasing incidence in ageing conditions population (Guidelines for the management of arterial hypertension, European Heart Journal, 2007, 28, p.1458).

In Romania, the HTA was present in 40% of the subjects (51% male, 49% female). Over 50% of them were not diagnosed or did not know that they have high blood arterial. From 42% people who are hypertensive, knew only the correct treatment of GAAP 17.8% [2].

As shown from the above statistics, the disease is asymptomatic for a long period. Symptoms of the disease may express variations in blood pressure or suffering

¹ University of Craiova, Faculty of Physical Education and Sport, talexandra1995@yahoo.com

the various organs and tissues that appear in the critical form [3].

Hypertension results from the interaction of numerous factors endogenous and exogenous. Endogenous factors are heredity, age, sex, race, obesity, blood group. Exogenous factors are represented by: psychosocial stress, salt intake, excessive caloric intake, altitude, smoking, alcohol consumption, drinking coffee.

2. Objectives

To reduce systolic blood pressure below 140 mmHg and diastolic under 90 mmHg was a kinetic recovery program differed depending on the stage of evolution of the disease, the patient's age, the reaction to the effort and associated diseases.

Physical therapy has the following objectives:

- balancing the nervous system and influence of positive vasomotors;
- fostering decongestion of vasodilatation peripheral and some segments of the body;
- achieving and maintaining an optimal body weight;
- prevent the phenomena of atherosclerosis;
- getting vasodilatation and decreasing peripheral resistance local;
- muscle relaxation and neuro-psychic.

3. Material and Methods

It was set up by a group comprising 26 adult patients the diagnosis of hypertension. The consignment was studied over a period of three months, within the 15th September - 15th december 2015 in Dr. Tr. Severin, through the offices of family doctors. Patients studied were chosen at random from among those diagnosed with hypertension stage I and stage II disease without severe forms or organic disease.

Evaluation of epidemiological data

The distribution by sex of the cases studied is presented below.

Table 1
Group distribution according to sex

| Sex | Number of cases | Frequency [%] |
|--------|-----------------|---------------|
| Female | 24 | 61,54 |
| Male | 15 | 38,46 |
| Total | 26 | 100 |

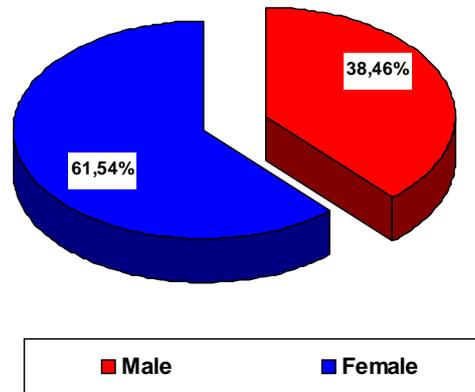


Fig. 1. *Group distribution according to sex*

Fig. 1 and Table 1 data highlight the fact that hypertension occurs in a proportion of 61,54 % men, while in women the percentage was 38,46 %.

The members of the study group within the following age groups:

Table 2
The distribution by age group

| Age groups | Number of cases | Frequency [%] |
|---------------|-----------------|---------------|
| 31 – 40 years | 2 | 7,69 |
| 41 – 50 years | 4 | 15,38 |
| 51 – 60 years | 8 | 30,77 |
| 61 - 70 years | 12 | 46,16 |
| Total | 26 | 100 |

Studying figure no. 2 and table 2 observed that the incidence of the disease increases with age, the highest percentage recorded for patients aged over 60 years (46,16%).

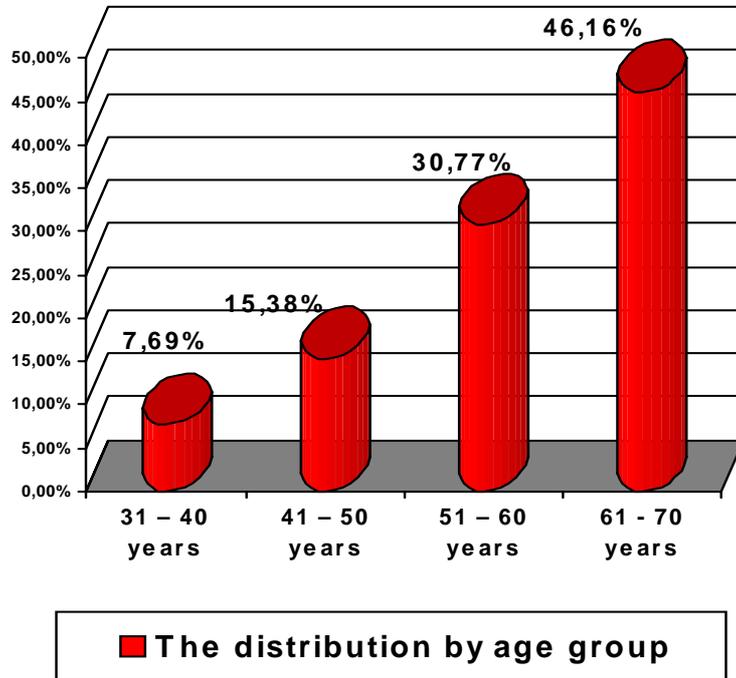


Fig. 2. The distribution by age of the study group

The area of origin of the patients in the study group is presented below.

Table 3

The distribution by area of origin of the patients in the study group

| Area of origin | Number of cases | Frequency [%] |
|----------------|-----------------|---------------|
| Urban | 15 | 57,69 |
| Rural | 11 | 42,31 |
| Total | 26 | 100 |

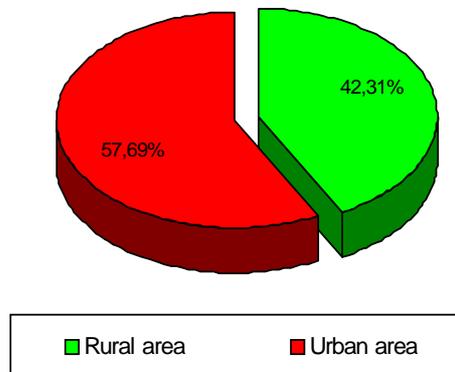


Fig. nr. 3. The distribution by area of origin of the patients in the study group

From Fig. 3 and Table 3 is observed in the studied group, the incidence of patients is dominant in urban area (57,69 %) than rural (42,31 %).

Increased incidence the urban area was due to exogenous factors: psychosocial

stress, excessive intake of salt and calorie intake, reduced physical exercises.

The influence of risk factors meet the study group is shown below.

The influence of risk factors

Table 4

| Risk factors | Number of cases | Frequency [%] |
|--|-----------------|---------------|
| Heredity | 18 | 69,23 |
| Age | 18 | 69,23 |
| Obesity | 20 | 76,92 |
| Psychosocial stress | 18 | 69,23 |
| Excessive salt intake | 18 | 69,23 |
| Current consumption of alcohol, coffee, cigarettes | 12 | 46,15 |

First among risk factors are obesity, seen in 76,92 % of the cases. Immediately next heredity, age, psychosocial stress and excessive salt intake each of them in 69,23%, as seen from the data in Table 4 .

Patients from the studied received the proposed further treatment and dietetic (fighting obesity, reducing the consumption of salt and convulsive).

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In the first 2 weeks, because the subjects of the study were not physical efforts outside of everyday activities, have been recommended for beginning the most affordable treatment methods to the effort, the HTA: progressive gymnastics in the morning; climbing stairs and slopes; sport therapy and respiratory exercises.

Still, for two and a half months gradually intensified actions above, and physical therapy in hypertension: leg exercises, exercises for the trunk in the form of circumductions, upper limb exercises for derivation of the thoracic mobilization exercises all segments analytical,

analytical isometric muscle contractions or "intermediate" relaxation exercises: balancing of the limbs, snatches shall occur by the patient or member of the snatches shall occur conducted by passive physical therapist, twisting trunk or some positions with twisting the torso.

Training, controlled and sustained, reduce your values with 10-20 mm Hg hypertension. Training for endurance effort achieves the most significant decrease, both in value and in time. Subjects performed 3 weekly sessions of 20 minutes. It started with simple exercises, and after reaching a certain capacity of effort have introduced exercises analytical outreach to all segments, running, cycling. Before and after training sessions FC and blood pressure were measured.

Patients were recommended continuing medication treatment prescribed by doctor cardiologists. It was recommended that non pharmacological treatment treatment consisting of:

- moderate salt restriction, recommending the exclusion of foods that contain a lot of salt (some canned meat, sausage, etc.);

- fighting obesity by low-calorie diet, normoproteic, hipolipidic, hipoglucidic. In the diet were predominantly recommended fruits, vegetables, meat, fish, poultry, beef, dairy products with low fat, wholemeal bread;

- gymnastics 10 minutes each morning and walks 30 minutes daily. Patients were encouraged to make more movement, sport;

- kinetic treatment was individualised according to the stage of evolution of the disease, the patient's age, the reaction to the effort and associated conditions.

The exercises were used to reinforce the moderate metabolism all muscle groups, vasodilation and decreased peripheral local resistance. Or also used as muscle relaxation exercises your neurophysical.

Physical therapy program has been run daily or 3-4 times a week, depending on the clinical and functional peculiarities of the patient. During training, the COR should not exceed 180 mm Hg [1].

Patients with hypertension had a low effort capacity due to previous sedentary life, recommendations for reducing the physical effort and the fact that patients felt physical activity producing factor of suffering. The HTA has been an essential

pillar of the physical condition of the patient assessment. The test was performed both original and one month after starting the treatment, being absolutely necessary for admission the patient in the phase of recovery.

Phase II includes the totality of measures that aim at maintaining long-lasting benefits obtained in the previous stage. At this stage the patient has a sufficient capacity for the conduct of an aerobic normal lives, both professionally and socially. Patients, in order to maintain their physical condition and even ordinary to improve training programmes were held, checked periodically for physical therapies.

In phase III is shown riding a daily 30-60 minutes, with an average speed of 5 km/h. Jogging it indicated but should be carried out gradually, initially alternating with periods of walking, treadmill speed making it according to the respiratory control (the ability to maintain a conversation and cardiac response).

4. Results and Discussions

Evolution of the patients studied group is shown in Fig. 4 and Table 5.

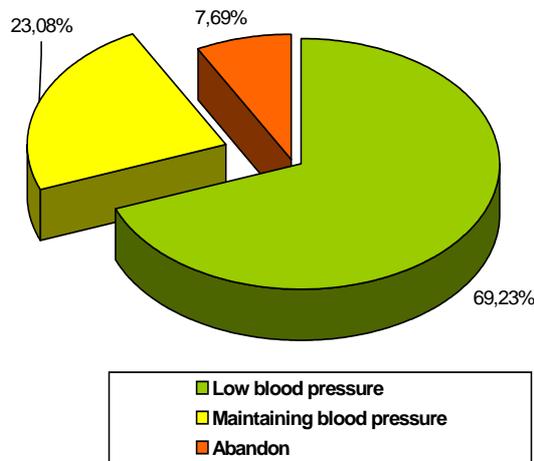


Fig. 4. *The results obtained from the kinetic HBP treatment*

Table 5

The results obtained from the kinetic treatment

| Evolution | Number of cases | Frequency [%] |
|----------------------------|-----------------|---------------|
| Low blood pressure | 18 | 69,23 |
| Maintaining blood pressure | 6 | 23,08 |
| Abandon | 2 | 7,69 |
| Total | 26 | 100 |

In the study conducted for 3 months, have achieved the following results:

18 cases in the study group were obtained decreases in average 25 mmHg to TAS and with 20 mm Hg to TAD; 2 persons dropped out of the study; 6 persons have maintained the same values of blood pressure.

5. Conclusions

- High blood pressure (HBP) is a public health issue, both through increased frequency in the population, as well as powerful complications (stroke, myocardial heart attack).
- The frequency of hypertension increases with age, having the maximum incidence in people aged over 60 years (46,16%). The risk increases with age, whereas the blood vessels become more rigid as we move forward in the age.
- Measures for prevention of hypertension, health education of the population can result in lowering the incidence of this disease.
- Living arrangements of patient with HBP must be ordered with somatic stress avoidance (States of exhaustion, cold, heat) and mentally (anxiety, fear, aggression).

- Risk factors the most encounter were: obesity, heredity, stress, improper diet.
- Early detection of the disease is very important to prevent serious complications.
- The study showed the importance of hypertension treatment by physical therapy, diet and movement along with drug therapy.

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