

OBESITY RISK FACTOR FOR MULTIPLE DISEASES HIGH BLOOD PRESSURE

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Abstract: The aim of this study is to design an effective physical therapy program based on the procedures and means of exercise, along with a proper diet, leading to the elimination of immediate and late complications of obesity. I guess if we apply an early physiotherapy program, respectively exercise and an adequate diet, we will obtain an improvement of the health, helping to eliminate the immediate and late complications of obesity.

The study was performed at the USV Swimming and Physiotherapy Complex, having at its disposal specific endowments for the development as efficiently as possible and in favorable conditions for the patient.

The research stages are the following:

In the first stage – we have established the existing specialized literature that deals with the topic proposed for the study and the case studies of the last years, as well as the way of solving it. Based on the information gathered, we prepared the recovery program.

In the second stage – we selected the subject for the study. Also at this stage we chose the necessary tools for evaluation. We prepared the individual file with the data necessary to establish the clinical-functional diagnosis. This sheet was the decision-making basis for setting the goals and treatment program.

In the third stage – we applied the kinetotherapeutic treatment programs, specific to the case.

In the final stage – I made the final evaluation of the subject and based on the results I appreciated the individual evolution, materialized in the graphic presentation.

Introduction: Obesity is a widespread nutritional-metabolic disorder in the current era, which is characterized by an excess weight

due to the accumulation of adipose tissue that exceeds by more than 30% of the ideal weight. [4]

I. Safta stated that “an excess weight of 10% increases mortality by 10%, and an excess of 30-40% by approx. 30-40% .

Obesity sets in when a person consumes more calories than his or her body can burn. [2]

Obesity increases the risk of various diseases, especially heart disease, type 2 diabetes, obstructive sleep apnea, certain types of cancer, osteoarthritis and asthma. Experts say that obesity, high blood pressure (HTA) and cardiovascular disease make up the three sides of a vicious triangle.[7]

The World Health Organization has defined obesity as corresponding to a BMI ≥ 30 kg / m²: grade I, BMI between 30-34.9 kg / m²; grade II, BMI between 35-39.9 kg / m²; grade, III BMI ≥ 40 kg / m².

Classification	BMI (kg / m²)	Risk
Underweight	<18,5	-
Normal	18,5-24,9	-
Overweight (Preobez)	25-29,9	Moderately increased
Obese	≥ 30	Grown
Grade I	30-34,9	Moderate obesity
Grade II	35-39,9	Severe obesity
Grade III	≥ 40	Massive obesity or morbid

According to the WHO definition 1996, JNC VI, VII (2003), European Guide to High Blood Pressure 2003, hypertension in adults is defined as a chronic increase in blood pressure greater than 140/90 mmHg, regardless of age and sex.

Cardiovascular complications of obesity are the most common and important. There is much evidence that being overweight is a cause of high blood pressure. [3]

Weight loss in obese people is followed by a decrease in blood pressure, especially diastolic BP. The relationship between weight and hypertension varies by sex, race and age. The link between BP and obesity has existed throughout life, starting in childhood, but is gradually attenuated in the elderly. Under the age of 55, the risk of hypertension increases from 1.6 for overweight to 2.5-3.2 for people

with grade I obesity and to 3.9-5.5 for people with grade II or III obesity. [8]

Physical activity is essential for keeping blood pressure under control, due to the fact that it improves the functioning of the heart, which is able to pump more blood with less effort. The less effort the heart makes to pump blood, the less force is exerted on the walls of the arteries. [1]

Following a very low-fat diet, physical activity plays the most important role in modern complex obesity therapy.

Increased physical activity lowers insulin and proinsulin levels, improves oxidation, and burns fat, and decreases mortality from cardiovascular disease. Exercise can be a preventive or curative, recovering sanogenetic factor, carried out within certain limits and under certain conditions, even under medical supervision. [5]

The treatment of obesity leads to the decrease of the associated risk factors, in relation to the degree of weight reduction, through the action on some predisposing factors. Losing weight, keeping the former obese within the limits of normal body weight, are imperatives of utmost importance. By realizing them, not only does a patient recover, but especially the life-threatening cardiovascular complications are prevented.[6]

The aim of this study is to design an effective physical therapy program based on the procedures and means of exercise, along with a proper diet, which leads to the elimination of immediate and late complications of obesity.

Applying a physical therapy program as effective as possible for the prevention and treatment of obesity and associated diseases, with the help of exercise, accompanied by adequate caloric intake, can stimulate a person to prevent and treat to some extent obesity along with associated diseases, in especially high blood pressure.

The means used in this paper prove to be effective in the framework due to the results obtained from the research.

Material-method: The study was performed within the USV Swimming and Physiotherapy Complex, for a period of 8 months, having at its disposal specific equipment for the most efficient and favorable conditions for the patient. The subject included in the case study is R.G. male, aged 27, by profession driver, presenting a diagnosis of grade II obesity and hypertension.

The patient is recommended a diet low in fat, sweets and high in fiber, associated with a well-established program of regular exercise, under the guidance of a physiotherapist. Initially, measurements and tests were made to determine the best physical therapy program, tailored to the needs and requirements of the patient.

Anthropometric data:

Height: 185 m

Body weight: 132 kg

Abdominal perimeter: 129 cm

Abdominal skin fold: 50 cm

Body mass index: 38.6 kg / m²

Normal weight: 66-86 kg

Ideal weight: 77 kg

Percentage of body fat: 32.13%

Ergophysiological parameters:

Heart rate: 97 beats / min

Blood pressure: 140/90 mmHg

Therapeutic plan

Ojectives:

1. Stimulation of metabolic processes;
2. Improving respiratory parameters and vascular circulation;
3. Increased muscle strength and endurance;
4. Improving the capacity of effort;
5. Induction of an active lifestyle.

Stage program

1. Active physiotherapy:

- Medical gymnastics for reducing body weight;
- Exercises with portable objects of medium weight;
- Active mobilizations;
- Corectarea tulburărilor statice sau posturale;
- Respiratory gymnastics and gymnastics for the

abdominal muscles.

2. Anti-cellulite massage - positive role in rheumatic diseases and atonic constipation.

3. Hydrokinetic therapy - analytical exercises in water to increase strength and muscle toning.

4. Pedaling the exercise bike - improves oxygenation and tissue circulation.

Exercise program included in recovery

1. Standing away from the position, facing the fixed ladder, with the hands on the ladder at shoulder level, raising one leg on the ladder and bending the knee by pulling the body back. - 10 times with each lower limb.
2. From the standing position, with your hands on your hips, bend the torso to the left with inspiration, return to the initial position with exhalation and continue to the right. - 10 times.
3. Standing away from the position, facing the fixed ladder, with the hands on the ladder at the level of the shoulders, lifting on tops with deep inspiration and returning with slow inspiration. - 10 times.
4. From a standing position, with the cane at the nape of the neck, gripped by the ends, bring the cane above the head and return. - 10 times.
5. From the supine position, one lower limb is flexed, the other lower limb performs the "bicycle". - 10 times with each lower limb.
6. From the supine position, the subject alternately performs the triple flexion of the lower limbs. - 10 times with each lower limb.
7. From the supine position, abduction and adduction of the lower limbs. - 10 times with each lower limb.
8. Din poziția decubit lateral stâng, membrul inferior homolateral este flexat, subiectul execută abducția și adducția membrului inferior heterolateral. - de 10 ori.
9. From the right lateral decubitus position, the ipsilateral lower limb is flexed, the subject performs the abduction and adduction of the heterolateral lower limb. - 10 times.
10. From the sitting position, with support back on the palms, raise the lower limbs stretched vertically, with small shears and lower them with shears. - 10 times.
11. From the sitting position, with support back on the palms, raise the lower limbs to 45 °, move them away and closer and then return. - 10 times.
12. From the sitting position, with the medicine ball (Bobath) between the ankles, raise and lower the lower limbs with the knees outstretched. - 10 times.
13. Standing with the legs close together, alternately bending the legs forward, with small dumbbells held in the hand - 10 times on each leg;
14. Sitting with legs outstretched with support back on the palms: bending the knees to the chest and back - 10 times.

15. Sitting with support back on the palms: lifting the lower limbs stretched vertically and back - 10 times.
16. Sitting with support back on the palms: raising the lower limbs to 45 °, their distance, approach and return - 10 times.
17. Sitting, with the tips of the legs fixed under the last slat of the fixed ladder, arms outstretched sideways: wide turns to the left and right - 10 times.
18. From supine position, arms next to the body, palms on the ground: lifting the limbs, close, at 45 ° and return - 10 times.
19. From supine position, on an inclined plane, with the head towards the inclined side, the tips of the legs under a slat of the fixed ladder: lifting the torso vertically and returning - 15 times.
20. Mers cu mișcări de respirație. - 5 minute.
21. Energetic pedaling with medium weight on the exercise bike. - 5 minutes.

Results and discussions: The value of the ideal BMI and the BMI values at the initial, intermediate and final test of the R.G. patient, who has grade II obesity, are presented in the table below:

BMI (kg / m2)	NAME AND SURNAME
	R.G.
Initial evaluation	38,60
Interim evaluation	33,60
Final evaluation	29,22
Ideal	22,50

Table no.1

The graph below shows the BMI values, in the case of the patient diagnosed with grade II obesity:

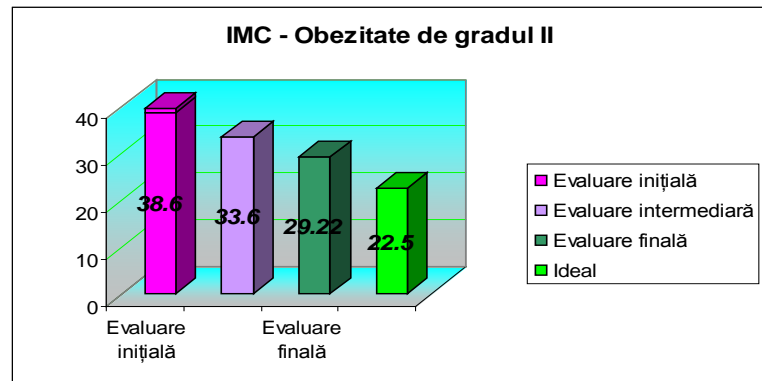


Table no.2

In the case of patient R.G., who has grade II obesity, we note that at the initial assessment he recorded a BMI of 38.60 kg / m², during the kinetotherapeutic program at the intermediate evaluation registered a BMI of 33.60 kg / m² and following the kinetotherapeutic program performed for a total of 8 months, the patient manages to lower the BMI to 29.22 kg / m². At the end of the recovery period, the patient's progress proved to be beneficial.

The physiotherapeutic program improved his capacity for effort, increased his strength and muscle tone, as well as improved his respiratory and vascular circulation parameters. The patient strictly followed a low-calorie diet, which together with daily exercise, led to a significant decrease in body weight. The patient will continue the physiotherapy session at home, with the guidance of the physiotherapist.

Conclusions: Following this study, we reached the following conclusions:

- obesity requires special attention, given that it is often accompanied by multiple conditions.
- the elaboration of an effective kinetotherapeutic program consists in the selection of the most adequate physical exercises and their

development in optimal conditions, accompanied by encouragements, which should contribute to the treatment of obesity.

- the physiotherapist has the role of imprinting a state of mental relaxation to the patient, through suggestion and self-suggestion, the physical exercises being adapted to each patient, depending on the degree of obesity, being performed in a harmonized environment.

- rigorous combination of means, with increased attention to body hygiene, by hardening the body with the help of natural environmental factors, anti-cellulite massage and an adequate caloric intake, have positively influenced: weight loss, improving the cardiovascular parameters and increasing the efficiency in performing the exercises included in the physiotherapy program.

- the results obtained from the study show that the proposed hypothesis proved to be valid: the application of an early kinetotherapeutic program, respectively exercise and an adequate diet contributed to improving health and eliminating immediate and late complications of obesity.

- once the purpose of the physical therapy program has been fulfilled, it is necessary that the patient does not give up performing the exercise, because maintaining weight is the most difficult part of treatment and this is possible only with the help of the patient's will, a will that is strengthened by family, friends and the physiotherapist.

1. References:

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OBEZITATEA FACTOR DE RISC PENTRU MULTIPLE AFECȚIUNI HIPERTENSIUNEA ARTERIALĂ

Cuvinte cheie: obezitate, hipertensiune arterială, tratament, activitate fizică, exercițiu fizic

Rezumat: Scopul acestui studiu este de a concepe un program kinetoterapeutic eficient bazat pe procedeele și mijloacele exercițiului fizic, alături de o alimentație corespunzătoare, care să ducă la înlăturarea complicațiilor imediate și tardive ale obezității. Presupunem că dacă vom aplica un program kinetoterapeutic precoce, respectiv exercițiul fizic și o alimentație adecvată, vom obține o îmbunătățire a sănătății, contribuind la înlăturarea complicațiilor imediate și tardive ale obezității.

Studiul s-a efectuat în cadrul Complexului de Natație și Kinetoterapie USV, având la dispoziție dotări specifice pentru desfășurarea cât mai eficientă și în condiții favorabile pentru pacient.

Etapile cercetării sunt următoarele:

În prima etapă – am stabilit literatura de specialitate existentă ce tratează tema propusă pentru studiu și cazistica din ultimii ani, precum și modul de rezolvare. Pe baza informațiilor adunate am întocmit programul de recuperare.

În etapa a doua – am selecționat subiectul destinat studiului. Tot în această etapă am ales instrumentele necesare evaluării. Am întocmit fișa individuală cu datele necesare fixării diagnosticului clinico-funcțional. Această fișă a constituit baza decizională stabilirii obiectivelor și programului de tratament.

În etapa a treia – am aplicat programele kinetoterapeutice de tratament, specific cazului.

În etapa finală – am făcut evaluarea finală a subiectului și pe baza rezultatelor am apreciat evoluția individuală, concretizată în prezentarea grafică.