160 - PHYSICAL ACTIVITY AND HYPERTENSION: EXERCISE CIRCUIT MITIGATION OF DISEASE.

ESPINOZA MORALES, LISSETTE
SOTELO ARENAS, IGNACIO
FUNDACIÓN CREANDO FUTURO
SANTIAGO, RM, CHILE
lili_aspeck@hotmail.com

INTRODUCTION:

Hypertension (HT) is the most common diseases that affect the health of individuals and populations in all parts of the world. Represents by itself a disease, as well as a risk factor for ischemic heart disease, heart failure, cardiovascular disease, renal failure and contributes significantly to retinopathy. Numerous studies associate hypertension with fatal diseases, so control decreases morbidity and mortality from these. It has been shown that mortality from these complications has been increasing steadily in recent years: heart disease, stroke and kidney disease are among the leading causes of death.

Hypertension is one of the most prevalent chronic diseases in the world and despite having easy diagnosis and treatment very effective, remains the leading cause of death in developed countries, constituting a risk factor for virtually the first order all cardiovascular diseases ..

Its distribution in the world serves to factors of economic, political, social, cultural, environmental and ethnic diversity. The rising prevalence has been associated with inadequate dietary patterns, decreased physical activity and other behavioral issues related to toxic habits.

In the world it is estimated that 691 million people have it. Of the 15 million deaths from circulatory diseases, 7.2 are coronary heart disease and 4.6 for cardiovascular disease. Hypertension is present in most of them.

It is likely that many interrelated factors contribute to increased blood pressure in hypertensive patients their relative roles may differ among individuals. Among those who have been intensively studied are salt intake obesity and insulin resistance, the renin-angiotensin-aldosterone and sympathetic nervous system. In previous years, we have evaluated other factors such as genetics, endothelial dysfunction (manifested by changes in endothelin and nitric oxide), low birth weight, intrauterine nutrition and neurovascular abnormalities. And has been proven modern demonstrated the impact they have on this disease, stress and sedentary life style elements present in the lifestyle that characterizes contemporary society.

Perceived risk of developing hypertension means necessary to implement a strategy for education and promotion measures aimed at decreasing mean arterial pressure of the population, impact on other risk factors, mainly the lack of exercise inadequate levels of lipids , high salt intake, smoking and alcoholism, so that there is a strong component that affects the lifestyle and behavioral modification imposed.

The World Health Organization (WHO) has declared a sedentary lifestyle, public enemy of the inhabitants of the planet, which is associated with chronic non-communicable diseases, one of the risk factors of cardiovascular disease next to snuff, overweight, hypertension , lipoprotein disorders, diabetes and eating disorders. According to studies conducted by this organization, has been shown that exercise delays the onset of osteoporosis and even completely prevent its occurrence, as well as reversing its effects on those who have the disease. Similarly it has been also demonstrated rehabilitative and preventive action of exercise on obesity, hyperlipidemia, diabetes, stress, cancer, osteoporosis, mental illness, aging and addiction. This action is also manifested in hypertension.

The prevalence of hypertension in Cuba is 23.0 x 100 inhabitants in the population over 15 years. Known hypertensive patients with pharmacological treatment, do not reach the desired numbers of hypertensive compensated. The perception of risk for the disease means, necessary to implement a strategy for education and promotion measures aimed at reducing mean arterial pressure of the population, impact on other risk factors, mainly the lack of AF, which affect lifestyle and behavioral modification imposed. However, the affected population involves the use of drugs rather than a drug solution and determining the treatment of disease, as is exercise.

Physical activity and physiological fitness (benefits of physical activity) prolong the longevity and protect against the development of cardiovascular disease, heart attacks, hypertension, obesity, osteoporosis, colon cancer and depression. These statements are not mere hypotheses: the benefits to be protected from these diseases through physical activity, reside in the cause - effect through enzymatic alterations in physiological mechanisms that exercise has on our body.

Leading a physically active lifestyle leads to a direct action on our hearts, greatly reducing the risk of cardiovascular disease.

The increase in oxygen supply, improved myocardial contractility, decreased basal heart rate and blood pressure at rest and in daily activities, increase the diameter and capacity expansion of the coronary arteries and thus cause improved circulation.

The diseases associated with hypodynamy (obesity, heart disease, diabetes, hypercholesterolemia and hypertension) are compounded by a sedentary life style and can be treated with exercise without resorting to drugs. The exercise that builds strength and endurance decreases morbidity and mortality in the elderly.

Prevention is the most important, universal and less costly.

Studies at UCLA, the University of Norway, at the Cooper Institute and the Copenhagen male study, among others, found that a sedentary lifestyle increases to more than double the risk of developing cardiovascular disease and this decrease sequal proportion to the extent that increased physical activity and continuity. From this consideration does not escape the high blood pressure, as it has been shown to increase sedentary hypertensive individuals three times the risk of a heart attack that hypertensive assets.

Aerobic physical activity is one of the main pillars of non-pharmacological treatment in hypertensive patients. There is evidence that regular practice of aerobic exercises, such as 30 or 40 minute brisk walk, 3 or 4 times a week can lower blood pressure by significant reduction in systolic blood pressure values (SBP) and diastolic blood pressure (DBP). With isotonic physical activity, progressive and systematic than 20 minutes a day, there has been a decrease in mortality from cardiovascular causes by 30%. By contrast, sedentary normotensive individuals have a 20% and 50% increased risk of developing hypertension when compared with those who keep training

Hypertension is defined as-HTA-values the continued existence of systolic pressure 140 mm Hg or greater diastolic

pressure of 90 mm Hg or higher or under the administration of antihypertensive agents.

Arterial hypertension is a chronic elevation of blood pressure (BP) with normal limits can be defined from two perspectives:

Statistics. Hypertension is a continuous variable that fits a normal distribution. Consequently, we can define hypertension as blood pressure those who are above preset limits, using these limits usually twice the standard deviation or percentile 95.

Epidemiology. Blood pressure level above which increases the risk of cardiovascular disease and stroke. It is known that the risk is doubled when the diastolic blood pressure (DBP) rise above 90 mmHg compared with people with levels below 90 mmHg According to the WHO criteria of hypertension is classified as mild, moderate and severe when the values of diastolic blood pressure 90-104 mm Hg are among, 105-114 mm Hg and 115mm Hg, respectively.

With isotonic physical activity, progressive and systematic than 20 minutes a day, there has been a decrease in mortality from cardiovascular causes by 30%. By contrast, sedentary normotensive individuals have a 20% and 50% increased risk of developing hypertension when compared with those who keep training. Vigorous exercise raises powerfully isometric PAS while isotonic initially raises further reduced. Therefore, this is the type of exercise to recommend to the hypertension. According to studies by American College of Sports Medicine, aerobic exercise for people at high risk of developing hypertension, reduces the increase in BP that occurs over time, thus justifying the prescription as a strategy, without drug use, reduces the incidence of hypertension in susceptible people. Similarly, it has been found that this form of physical activity, produces an average reduction of 10 mm Hg systolic and diastolic BP of people with mild hypertension (BP 140 to 180/90 to 105 mmHg) and even higher BP reductions in patients with secondary hypertension caused by renal dysfunction. The benefit of exercise can not be attributed solely to lower blood pressure, since the practice of it favorably modifies blood lipids, heart rate decreases reflecting a lower sympathetic nerve activity increases vasodilator prostaglandins, renin activity decreases plasma and improves insulin sensitivity.

Sleep and relaxation are the main factors normalizing the PA, so the rest, together with other relaxation techniques can help lower the blood pressure.

Awareness of body care practitioners making physical exercises comply with proper diet, low alcohol and fat. In addition, the feeling of being attributed to increased exercise-induced endorphins, brings a better quality of life. It is then recommended the practice of aerobic physical activity in patients with mild to moderate hypertension. Only those with cardiovascular disease or other serious health problems need further evaluation before a workout, which in some cases should be medically supervised.

Physical activity has been understood only as "body movement". However, such an idea must overcome to realize that physical activity is intentional human movements a unit for the purpose of existential nature and potential to develop not only physical, but psychological and social in a historical context. (Girginov, 1990: 9). We believe that the practice of physical activity, both as a formative or agonistic game, has a preventive hygienic importance for the harmonious development of the subject (child, adolescent and adult) for maintaining the health of it. The practice of any sport (From French Desport, entertainment) always retains a playful "and could be a good preventive measure and treatment, as it involves social, recreational and even biochemical favor the development of the potentialities of the individual." These are just some of the benefits that exercise causes the circulatory system, and to modify the harmful effects of bad habits such as smoking, inadequate or unbalanced diet, high levels of LDL cholesterol, and obesity among other effects.

The experimental finding suggests that a continuous exercise program could reduce peripheral vascular resistance and increase aortic distensibility, thereby reducing blood pressure.

Methodology

Longitudinal study.

Sample

Participants in this research 30 people between 55 and 60 years.

Selection Criteria

Estimation of life between 55 and 60.
Do not carry a cardio-respiratory disease and / or locomotive
Comprehensive availability for the program.
Expected accomplishments of the program of physical activity:

- Slows the regression of atherosclerosis-preventing cardiovascular-respiratory involution and endocrine involution (especially of the adrenal with subsequent improvement of adaptation and resistance to stress).
- It is important in cardiac and respiratory rehabilitation verifying that post-myocardial infarction mortality is reduced by 20% among those who follow sports programs.
- Facilitates joint activity and prevents osteoporosis and bone fractures. It increases absorption of calcium and potassium.
- Increased oxidative enzyme activity thereby improving oxygen utilization and aerobic metabolism of fats and glucose.
- Improved mobilization of energy substrates.
- You lose fat weight.
- Reduce plasma cholesterol and triglyceride levels and improve cholesterol / HDL in the blood. Increases exercise tolerance by increasing aerobic and anaerobic thresholds.
- Increased stroke volume.
- Increase the volume of blood (plasma and red cells).
- Improved muscle capillarization.
- Increased VO2 max. and improves the respiratory system and improvement of vital capacity, use of oxygen supply and increased ventilation, diffusion and oxygen transport.
- Controls and reduces blood pressure at rest and during exercise.
- Promotes autonomic balance, psychophysical and psico-intelectual activity.
- Improves aesthetics.
- Stimulates optimism, vitality and the will (favoring the improvement of smoking and other unhealthy habits and

addictions).

- contributes to social integration.
- Improve the quality and enjoyment of life.

Exercise Program: Exercise System. Isotonic aerobic activity.
Walk

Make 3 to 4 times a week, walk into a spacious and well ventilated, if possible, with great interaction with the environment, extensive vegetation.

- Dosage: 3 to 4 times a week.
- low or moderate intensity without reaching medium intensity.
- Duration: 10 minutes 3 times: in walks for 10 minutes, make a break for 2 to 3 minutes of recovery with large breaths.

Step

- step is placed in front of the patient and perform 3 times of 6 minutes at a mild to moderate active rest for 2 minutes.
- This activity can be made 2 to 3 times per week.
- The only step is to make the ascent and descent without stopping for 6 minutes, including the movement of arms to go running this activity.

Swim

- It is recommended to swim 100 meters with a mild to moderate. The frequency of breathing should be breathing every 2 strokes.
- The effort to go swimming should be minimal, e without seeking to reduce the time, but simply enjoying the swim.
- Every 50 meters on 10 breaths in and out of water (bucitos, bubbles) if you feel any fatigue or tiredness.

Hiking

- Time-based dosing of up to 25 minutes at a frequency of voluntary and with rest of the same character.

Trot

- If you can do it, you should make a continuous trot mild to moderate over a period of 15 to 20 minutes.

Cycling

- Perform recreational cycling rather than sports.
- Avoid slopes.
- mild to moderate intensity.
- Running time 15 to 20 minutes.
- This cycle of above activities should be performed approximately 6 months and at least 3 months.

Conclusions:

- Physical activity is one of the main pillars of non-pharmacological treatment, since their regular practice, lowers blood pressure by significant reduction in the values of systolic and diastolic blood pressure.
- Physical activity and physiological fitness (benefits of physical activity) prolong the longevity and protect against the development of cardiovascular disease, heart attacks, hypertension, obesity, osteoporosis, colon cancer and depression.
- The quality of life of hypertensive patients as an expression of complete well-being related to different aspects that accompany life, raises combat obesity and a sedentary lifestyle with increased physical activity.

isometric Vigorous exercise raises powerfully the PAS while isotonic initially raises further reduced. Therefore, this is the type of exercise to recommend to the hypertension.

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PHYSICAL ACTIVITY AND HYPERTENSION: EXERCISE CIRCUIT MITIGATION OF DISEASE.

SUMMARY:

Aerobic physical activity is one of the main pillars of non-pharmacological treatment in hypertensive patients. There is evidence that regular practice of aerobic exercises, such as 30 or 40 minute brisk walk, 3 or 4 times a week can lower blood pressure. With isotonic physical activity, progressive and systematic than 20 minutes a day, there has been a decrease in mortality from cardiovascular causes by 30%. By contrast, sedentary normotensive individuals have a 20% and 50% increased risk of developing hypertension when compared with those who keep trained.

The benefit of exercise can not be attributed solely to lower blood pressure, since the practice of it favorably modifies blood lipids, heart rate decreases reflecting a lower sympathetic nerve activity increases vasodilator prostaglandins, renin activity decreases plasma and improves insulin sensitivity.

Awareness of body care practitioners making physical exercises comply with proper diet, low alcohol and fat. In addition, the feeling of being attributed to increased exercise-induced endorphins, brings a better quality of life.

For all of the prefix, there seems no reason to limit the practice of aerobic physical activity in patients with mild to moderate hypertension. Only those with cardiovascular disease or other serious health problems need further evaluation before a workout, which in some cases should be medically supervised.

KEYWORDS: blood pressure - physical activity - elderly

RÉSUMÉ:

Aerobic activité physique est l'un des principaux piliers du traitement non pharmacologique chez les patients hypertendus. Il est prouvé que la pratique régulière d'exercices aérobiques, comme 30 ou 40 minute marche rapide, 3 ou 4 fois par semaine peut réduire la tension artérielle. Avec l'activité physique isotonique, progressive et systématique de 20 minutes par jour, il ya eu une diminution de la mortalité d'origine cardiovasculaire de 30%. En revanche, les individus normotendus sédentaires ont un 20% et 50% un risque accru de développer une hypertension par rapport à ceux qui gardent formés.

Le bénéfice de l'exercice ne peut pas être attribuée uniquement à abaisser la pression artérielle, car la pratique de l'modifie favorablement les lipides sanguins, la fréquence cardiaque diminue reflétant une activité plus faible du nerf sympathique augmente prostaglandines vasodilatatrices, diminue l'activité rénine plasma et sensibilité à l'insuline améliore.

Sensibilisation des pratiquants de soins du corps faisant des exercices physiques se conformer avec une bonne alimentation, faible teneur en alcool et la graisse. En outre, le sentiment d'être attribué à l'augmentation induite par l'exercice des endorphines, apporte une meilleure qualité de vie.

Pour l'ensemble des préfixes, il n'y a aucune raison de limiter la pratique de l'activité physique aérobie chez les patients avec hypertension légère à modérée. Seuls ceux qui ont une maladie cardiovasculaire ou d'autres graves problèmes de santé nécessitent une évaluation plus approfondie avant une séance d'entraînement, qui dans certains cas doit être médicalement supervisé.

MOTS-CLÉS: la pression artérielle - activité physique - les personnes âgées

RESUMEN:

La actividad física aeróbica constituye uno de los principales pilares del tratamiento no farmacológico en pacientes hipertensos. Hay evidencias que demuestran que con la práctica regular de ejercicios aeróbicos, como por ejemplo 30 ó 40 minutos de caminata a paso vivo, 3 ó 4 veces por semana, se puede disminuir la presión sanguínea. Con la práctica de actividad física isotónica, progresiva y sistemática, de 20 minutos diarios, se ha observado una disminución de la mortalidad por causa cardiovascular de un 30%. Por el contrario, individuos sedentarios normotensos tienen entre un 20% y un 50% más de riesgo de desarrollar hipertensión arterial, cuando se los compara con aquellos que se mantienen entrenados.

El beneficio del ejercicio no puede atribuirse solamente a la disminución de la presión arterial, ya que la práctica del mismo modifica favorablemente los lípidos sanguíneos, disminuye la frecuencia cardíaca como reflejo de una menor actividad nerviosa simpática, aumenta las prostaglandinas vasodilatadoras, disminuye la actividad renínica plasmática y mejora la sensibilidad a la insulina.

La conciencia del cuidado corporal hace que quienes practican ejercicios físicos cumplan con un adecuado régimen alimentario, de bajo consumo de alcohol y grasas. Además, la sensación de bienestar atribuida al aumento de las endorfinas provocadas por el ejercicio, trae aparejado una mejor calidad de vida.

Por todo lo antepuesto, no parece haber razón para limitar la práctica de la actividad física aeróbica en pacientes con hipertensión arterial leve a moderada. Solamente aquellos con enfermedad cardiovascular u otros problemas serios de salud necesitan una evaluación más profunda antes de comenzar un entrenamiento, que en algunos casos debería estar supervisado médicamente.

PALABRAS CLAVES: hipertensión – actividad física - ancianos

ACTIVIDAD FISICA E HIPERTENSION ARTERIAL: CIRCUITO DE EJERCICIOS ATENUANTE DE LA PATOLOGÍA.

RESUMO:

Atividade física aeróbica é um dos principais pilares do tratamento não farmacológico em pacientes hipertensos. Há evidências de que a prática regular de exercícios aeróbicos, como 30 ou 40 minutos de caminhada rápida, 3 ou 4 vezes por semana pode reduzir a pressão arterial. Com a atividade física isotônica, progressiva e sistemática do que 20 minutos por dia, tem havido uma diminuição na mortalidade por causas cardiovasculares em 30%. Por outro lado, indivíduos sedentários e normotensos têm 20% e 50% maior risco de desenvolver hipertensão quando comparadas com aquelas que mantêm treinados.

O benefício do exercício não pode ser atribuída exclusivamente à pressão arterial mais baixa, uma vez que a prática de favoravelmente modifica os lipídios do sangue, freqüência cardíaca diminui refletindo uma menor atividade nervosa simpática aumenta prostaglandinas vasodilatadoras, atividade da renina diminui plasma e melhora a sensibilidade à insulina.

Conscientização dos profissionais de higiene corporal fazendo exercícios físicos cumprir com dieta adequada, de baixo teor alcoólico e gordura. Além disso, o sentimento de ser atribuído ao aumento induzido pelo exercício endorfinas, traz uma melhor qualidade de vida.

Para todos os prefixo, não parece haver nenhuma razão para limitar a prática de atividade física aeróbica em pacientes com hipertensão leve a moderada. Apenas aqueles com doença cardiovascular ou outros problemas graves de saúde necessitam de avaliação adicional antes de um treino, que em alguns casos, deve ser sob supervisão médica.

PALAVRAS CHAVE: pressão arterial - atividade física - idosos