



EXERCISES AND MANAGEMENT OF HYPERTENSION A REVIEW

Dr. Biswajit Bhunia

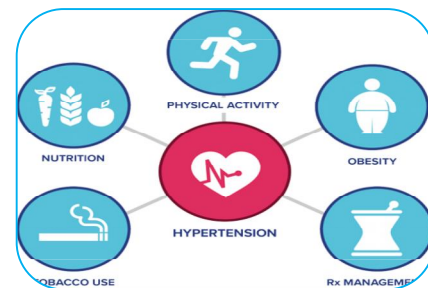
Associate Professor,

Government Physical Education College for Women
Chinsurah, Dist.-Hooghly, State- West Bengal.

ABSTRACT:

Hypertension is also known as high or raised blood pressure. It is the pressure that blood exerts against the walls of the arteries. It is a condition in which the blood vessels have persistently raised pressure as it is pumped by the heart. The higher the pressure, the harder the heart has to pump. Hypertension is measured by an instrument called a sphygmomanometer. It is a fatal medical condition and can increase the risk of heart, brain, kidney and other diseases. It is a major cause of premature death worldwide, with upwards of 1 in 4 men and 1 in 5 women-over a billion people-having the condition.

It has a strong connection to a lifestyle of inactivity. It has been demonstrated that engaging in physical activity and/or exercise can avert hypertension. Blood pressure can be effectively reduced through aerobic and resistance training. This kind of aerobic exercise can be recommended to people because it is simple, inexpensive, effective, and easy to do. In general, professional organizations and bodies of experts recommend doing at least 30 minutes of moderate-intensity aerobic exercise three times a week or resistance training two to three times a week. It is suggested that workouts can last for up to 30 minutes at a time or be broken up into at least 10 short workouts for a daily total of 30 minutes. Post-exercise hypotension refers to a drop in blood pressure that persists for a few minutes following an exercise session. With regular exercise, systolic BP can be reduced by 5 mmHg, resulting in a 9 percent reduction in coronary heart disease mortality, a 14 percent reduction in stroke mortality, and a 7 percent reduction in all-cause mortality. Therefore, regular exercise should be encouraged for all people, including those with normal blood pressure (BP 120/80 mmHg), prehypertension (BP 120/139/80-89 mmHg), and hypertension (BP 140/90 mmHg).



KEYWORDS: Exercise, Hypertension, High Blood Pressure.

INTRODUCTION:

The basic measurement of blood pressure consists of two numbers, such as 120/80. The first number refers to the systolic pressure, and the second number to the diastolic pressure. According to many doctors, when the reading greater than 150/95 for an adult indicates hypertension. There are many variety of hypertension. They range from mild to an extreme severe and often rapidly fatal-type called malignant hypertension. It is the leading cause of heart attacks, strokes and kidney failure. Many people of all ages suffer from hypertension. Strong emotion, such as anger or fear, may lead to a temporary blood pressure. Severe shock may cause a sharp fall in blood pressure. It is a major cause of

premature death worldwide, with upwards of 1 in 4 men and 1 in 5 women-over a billion people-having the condition. However, research work found out that it is closely associated with inactive lifestyle. Physical activity and/or exercise are shown to delay development of hypertension. Both aerobic and resistance exercise have been proven to reduce blood pressure effectively.

Aim and objectives of the study:

The main aim and objectives of the study is to discuss about the exercise and its impact on hypertension.

OBSERVATION:

There are many varieties of hypertension. They range from mild forms to an extremely severe-and often rapidly fatal-type called malignant hypertension. Blood pressure usually rises with age because of the decreased elasticity in the arteries and slows down the flow of blood. High blood pressure may cause heart failure, a stroke, or kidney failure. Physicians call high blood pressure essential hypertension when its cause is unknown. In 1957, scientist synthesized a substance in the blood believed to cause high blood pressure. Researchers use this substance, called angiotensin II, to study causes of hypertension. Low blood pressure is called hypotension. Generally hypotension need not be treated. In most cases, hypertension produces no symptoms until dangerous complication occur. The fact is that as people become older, their blood pressure usually rises because their arteries become less elastic and the blood flows more slowly. Some cases of hypertension result from other illness, such as kidney disease or overactive adrenal glands even it can cause an artery in the brain to burst, producing a stroke. High blood pressure also forces the heart to work harder, and so it may cause heart attack. The hypertension can cause kidney failure by reducing the flow of blood to the kidneys. In addition, high blood pressure is a major cause of arteriosclerosis. However, doctor cannot determine the real cause of high blood pressure in about 90 per cent of the cases. They call such cases essential hypertension. People whose parents have hypertension are much more likely to develop this ailment than those whose parents have normal blood pressure. Obesity, stress, smoking, or eating too much salt may trigger hypertension in people who have inherited tendency, and may also make the condition worse in people who already have it.

DISCUSSION:

Regular physical activity has also been shown to be effective in reducing the relative risk of developing hypertension by 19 to 30 percent. Similarly, a low cardio-respiratory fitness in middle age is associated with a 50 percent risk of developing hypertension. Results have been similar in both men and women. Prior to starting a new exercise program, individuals with known hypertension should obtain clearance from their family physician. It is important to remember that the key to a successful exercise program is consistency and continuity over a period of time. It is said that people should not try to conquer the world in first attempt. People should be patient, should start slowly and gradually increase frequency and duration. During the planning phase persons should carefully consider what barriers might stand in the way of consistency: then they should develop strategies and accountabilities to assist in eliminating these barriers. Endurance activities such as walking, swimming, cycling and low impact aerobics should be the core of the exercise program. Exercises that include an intense isometric component that can cause extreme and adverse fluctuations in blood pressure should be avoided. As aerobic conditioning improves, person should add low resistance high repetition weight training, circuit training is preferred over free weight. During weight training, holding one's breath should be avoided because it can result in large fluctuations in blood pressure and increase the potential of passing out or, in some individuals, possibly result in life threatening events such as abnormal heart rhythms. Ideally, hypertensive individuals should exercise five to six times per week depending on their initial fitness level. However, improvement can be achieved with as little as three sessions per week. The total exercises duration should be in the range of 30 to 60 minutes per session. People with lower levels of

fitness should start with shorter durations, 10 to 15 minutes and gradually 5 minute increments every 2 to 4 weeks increase to the 30 to 60 minute goal.

CONCLUSION:

The blood pressure is the driving force that moves blood through the circulatory system. Systolic pressure is reached when blood is put into the arteries whereas diastolic pressure is reached when the blood drains from the arteries.

People of all ages should have their blood pressure checked regularly. Many cases of mild hypertension can be controlled by weight reduction, reduce salt intake, smoking and drinking and taking part in physical Exercise. Meditation and many yogic exercises are helpful in controlling Blood Pressure. The more serious consequences of hyper-tension, such as heart attacks and strokes, can be prevented by prevented by treating blood pressure problems before it reaches dangerous levels.

Due to physical exercises or training particularly endurance or aerobic training arterial blood pressure changes very little during maximal workout. But resting blood pressure is lowered in individuals who are having high blood pressure. This reduction takes place in both systolic and diastolic blood pressure.

It has been demonstrated that engaging in physical activity and/or exercise can avert hypertension. Blood pressure can be effectively reduced through aerobic and resistance training. This form of aerobic exercise can be recommended to society because it is simple, inexpensive, easy, and effective. In general, professional organizations and bodies of experts recommend doing at least 30 minutes of moderate-intensity aerobic exercise three times a week or resistance training two to three times a week. It is suggested that workouts can last for up to 30 minutes at a time or be broken up into at least 10 short workouts for a daily total of 30 minutes. Post-exercise hypotension refers to a drop in blood pressure that persists for a few minutes following an exercise session. With regular exercise, systolic BP can be reduced by 5 mmHg, resulting in a 9 percent reduction in coronary heart disease mortality, a 14 percent reduction in stroke mortality, and a 7 percent reduction in all-cause mortality. Therefore, regular exercise should be encouraged for all people, normotensives, prehypertensives, and hypertensives included.

REFERENCES:

1. Brook RD, Appel LJ, Rubenfire M, et al. Beyond medications and diet: alternative approaches to lowering blood pressure: a scientific statement from the american heart association. *Hypertension* 2013; 61:1360.
2. Diaz KM, Shimbo D. Physical activity and the prevention of hypertension. *Curr Hypertens Rep* 2013; 15:659.
3. Pescatello LS, MacDonald HV, Ash GI, et al. Assessing the Existing Professional Exercise Recommendations for Hypertension: A Review and Recommendations for Future Research Priorities. *Mayo Clin Proc* 2015; 90:801.
4. Boutcher YN, Boutcher SH. Exercise intensity and hypertension: what's new? *J Hum Hypertens* 2017; 31:157.
5. Kraus WE, Bittner V, Appel L, et al. The National Physical Activity Plan: a call to action from the American Heart Association: a science advisory from the American Heart Association. *Circulation* 2015; 131:1932.
6. Vasan RS, Beiser A, Seshadri S, et al. Residual lifetime risk for developing hypertension in middle-aged women and men: The Framingham Heart Study. *JAMA* 2002; 287:1003.
7. Warburton DE, Charlesworth S, Ivey A, et al. A systematic review of the evidence for Canada's Physical Activity Guidelines for Adults. *Int J Behav Nutr Phys Act* 2010; 7:39.
8. Wen CP, Wai JP, Tsai MK, et al. Minimum amount of physical activity for reduced mortality and extended life expectancy: a prospective cohort study. *Lancet* 2011; 378:1244.
9. Riebe D, Franklin BA, Thompson PD, et al. Updating ACSM's Recommendations for Exercise Preparticipation Health Screening. *Med Sci Sports Exerc* 2015; 47:2473.

10. Barone Gibbs B, Hivert MF, Jerome GJ, et al. Physical Activity as a Critical Component of First-Line Treatment for Elevated Blood Pressure or Cholesterol: Who, What, and How?: A Scientific Statement From the American Heart Association. *Hypertension* 2021; 78:e26.
11. Whelton SP, Chin A, Xin X, He J. Effect of aerobic exercise on blood pressure: a meta-analysis of randomized, controlled trials. *Ann Intern Med* 2002; 136:493.