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HYPERTENSION: A SILENT KILLER, NEED FOR MANAGEMENT AND HOME REMEDIES

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ABSTRACT

Hypertension is also known as high blood pressure and is a condition where the force of the blood hitting against the artery wall is excessively high. Hypertension is a serious and major global health problem. The important reasons for occurring hypertension are inflammation, Atherosclerosis, Narrowing of the arteries and blood vessels. There are two types of hypertension, one is primary or essential and other is Secondary hypertension, 95% of the people have the essential hypertension. Usually people with essential hypertension have no symptoms, but clients may experience many signs and symptoms. The secondary hypertension caused by various associated diseases and gets many complications. Typically requiring pharmacology in combination with various methods of health promotion activities includes lifestyle modifications like Medication regularly, follow DASH diet recommendations and regular physical activities, Health educational programmes by health care professionals and regular monitoring of a blood pressure may prevent and control Hypertension.

Key words: Arteries, Blood pressure, Education, Health, Modification

INTRODUCTION

The blood is constantly circulating fluid impart the body with nutrition, oxygen and detach the waste products. It is mostly liquid, with many cells and proteins in the blood, making blood heavier than the pure water. The average adult normal person has about 5 liters of blood.[1] The blood vessels are in humans because of various diseases like, inflammation, atherosclerosis, those involves the collection of plaque

substances in the arterial endothelium which causes narrowing of the arterioles results increased blood volume.[2] High blood pressure or hypertension is when the blood pressure, the force of blood flowing through the blood vessels, is consistently too high.**[3]** High blood pressure is a very serious medical problem that significantly higher the risks of heart, kidney, brain and other diseases. [4]

MEANING OF HYPERTENSION

Abnormally increased blood pressure and a combination of high psychological stress are called as Hypertension or also known as increased blood pressure is a condition where the force of the blood hitting against the artery wall is excessively high. [5]

DEFINITIONS OF HYPERTENSION

- High blood pressure is hypertension. Blood pressure is the force of the blood running against the walls of the arteries as it flows through the arteries and these are the blood vessels that supply oxygenated blood from the heart to the entire body. [6]
- Hypertension is a chronic and long term medical disease that the blood pressure is constantly increased. [7]
- Hypertension is defined as the increased blood pressure that is 140/90 mmHg. [8]
- Blood pressure is a measurement of the force against the walls of arteries as heart pumps blood throughout the body. [9]
- A sustained elevation of the systolic arterial blood pressure above 140 mmHg and diastolic blood pressure above 90 mmHg is considered. [10]

TYPES OF HYPERTENSION

There are two types of hypertension, Primary hypertension is also called essential hypertension and it affect 95% of the people with increased blood pressure and Secondary hypertension will affects by the various disease conditions including too much of salt or Drugs can cause secondary hypertension.

Additional hypertension types are isolated systolic hypertension, malignant hypertension, and resistant hypertension are all recognized hypertension types with specific diagnostic criteria. [11]

INCIDENCE AND PREVALENCE OF HYPERTENSION

Estimates of Hypertension worldwide, overall, approximately 20% of the world's adults are estimated to have hypertension and the prevalence is dramatically increases in patients older than 60 years: In many countries, 50% of individuals of this age group have hypertension. [12] The prevalence of hypertension was high (60.4%) in the age group of 50-59 years and was increasing with age which was comparable with studies conducted in Coastal Karnataka in 2013[7] Currently, estimates put the incidence of hypertension to 20 to 40% in urban areas and 12 to 17% in rural areas of India. [13] Worldwide 972 million people (26%) of the world's population in the global has hypertension and the prevalence is expected to increased 29% by 2025. [14]

ETIOLOGICAL AND RISK FACTORS OF HYPERTENSION

- Being overweight or obese persons needs more blood flow, oxygen supply, and nutrients to these people. The volume of blood circulated through the blood vessels increases and automatically the pressure of the inside arteries increases.
- Too much salt (sodium) in the diet can cause the body to fluid and also constrict the arteries will cause increase the blood pressure.
- Too little potassium in the diet helps in balancing the amount of sodium and relaxes the smooth muscle cells, which lowers the blood pressure.
- Physically inactive people or lack of physical activity will chances to increases the risk of obesity or overweight
- Drinking too much alcohol may chances of activating the adrenergic nervous system can cause narrowing of the blood vessels which increase in blood flow and heart rate.
- The high level of Stress can chances to lead to a temporary, but dramatically increase the blood pressure. Meditation and relaxation techniques will effectively lowers the blood pressure.
- Non-steroidal Anti-inflammatory Drugs (NSAIDs) especially Ibuprofen can cause a marked worsening of the existing hypertension and will develop new high blood pressure. It can also cause heart failure, heart attack or stroke and it damages the kidneys.
- Cough and Cold Medications can cause narrowing of the blood vessels which increases the blood pressure and heart rate.
- Certain chronic conditions like diabetes, sleep apnea and kidney diseases chances to the risk of high blood pressure.
- A diet low in vitamin D will causes high blood pressure because it may affect an enzyme produced by the kidneys that affects blood pressure. [15]

PATHOPHYSIOLOGY OF HYPERTENSION

To understand the pathophysiology of hypertension and basic physiology of blood pressure are the determinants of blood pressure (BP) are cardiac output (CO) and total peripheral resistance (TPR). BP = CO X TPR. Cardiac output is amount of blood in the heart that is pumped out in 1 minute. It is in turn affected by stroke volume (SV) and heart rate (HR).CO = SV X HR. Stroke volume is the amount of blood delivered in each contraction. Its determinants are inotropism and cardiac preload (venous return). Total peripheral resistance on the other hand is called the cardiac afterload. It refers to the resistance of blood to flow. It is affected by the tone of the arterioles. To summarize BP = [SV X HR] X TPR. These three determinants are directly proportional to blood pressure that increase in each of them will result to high blood pressure. An increased SV is brought about by any venoconstriction and high fluid volume. Arteriolar constriction on the other hand increases total peripheral resistance. Arteriolar and venoconstriction may occur in the presence of angiotensin II. Angiotensin II also enhances the effect of norepinephrine that increases heart rate and stimulates the synthesis of aldosterone that increases fluid volume. [16]

CLINICAL MANIFESTATION OF HYPERTENSION

Hypertension is also called a "silent killer". Most people with hypertension are unaware of the problem because it may have no warning signs or symptoms. For this reason, it is essential that blood pressure is measured frequently. When symptoms do comes, they can include early morning headaches, irregular rhythms of heart nosebleeds, vision changes, and buzzing in the ears. Severe hypertension can cause fatigue, nausea, vomiting, anxiety, confusion, chest pain, and muscle tremors. [17]

DIAGNOSIS OF HYPERTENSION

- A thorough history of a client and conduct physical examination.
- 24 hours of monitoring a blood pressure as an ambulatory monitoring to confirm if the client have a high blood pressure.
- Electrocardiogram is painless and giving quick result of heart's electrical activity. [12]

MANAGEMENT

The clients can control and managing the hypertension by various ways like

- Medications
- Diet
- Physical activity

Eat a salt less diet with regular physical exercise, Maintaining a healthy weight or normal weight if overweight or have a less amount of alcohol may drink But sometimes lifestyle changes aren't sufficient. If these are not effective then the client may go and consult with the physician. [18]

DIET FOR HYPERTENSIVE PATIENTS

Avoid Salt (Sodium) - It should be less than 2300 milligrams or about 1 teaspoon of salt. Potassium, magnesium and fiber containing diets may help to control blood pressure. Fruits and vegetables are having a high potassium magnesium and fiber and these are having a less sodium. Dietary Approaches to Stop hypertension (DASH) is an eating plan rich in fruits, whole grains, vegetables, poultry, fish, nuts, legumes, and low-fat dairy. These foods are rich nutrients like potassium, magnesium, calcium, fiber, and protein. The DASH diet may reduce the blood pressure because it has a small amount of salt and sugar than others. The DASH diet is good, if the women who followed this diet for a several years surely reduce the risk of coronary artery disease and the stroke. The DASH diet contains Grains 7-8 daily servings, Vegetables 4-5 daily servings, Fruits 4-5 daily servings, Fat free dairy products 2-3 daily servings, Lean meat, Poultry and fish 2 or fewer servings a day, Nuts, seeds, Legumes 4-5 servings per week, Fats and Oils 2-3 daily servings and Sweets have a less than 5 servings per week. [19]

MEDICATIONS FOR HYPERTENSIVE PATIENTS

Diuretics are called water pills and these are helps kidneys to eliminate sodium and water from the body. These medications are tried to treat initially for high blood pressure. There are different types of diuretics such as thiazide, loop and potassium sparing. Angiotensin-converting enzyme (ACE) inhibitors

medications may help to relax blood vessels by blocking the formation of natural chemicals that narrows blood vessels. Angiotensin II receptor blockers (ARBs) are the medications relax blood vessels by blocking the action, not the formation of a natural chemical that narrows blood vessels. Calcium channel blockers are the medications helps to relax the muscles of the blood vessels and some slows the heart rate. Alpha blockers are the medications reduce nerve signals to blood vessels, lowering the effects of natural chemicals that narrow blood vessels. Alpha-beta blockers are blocks the nerve signals to blood vessels and slow the heartbeat to reduce the amount of blood that must be pumped through the vessels. Beta blockers are the medications to reduce workload on the heart and widen the blood vessels, causing the heart to beat slower and with less force. Aldosterone antagonists are the drugs also are considered as diuretics. These drugs block the effect of a natural chemical that can lead to salt and fluid buildup, which can contribute to high blood pressure. These may be used to treat resistant hypertension. Renin inhibitors are the medications like Aliskiren slows the production of renin, an enzyme produced by their kidneys that starts a chain of chemical steps that increases blood pressure and due to a risk of serious complications, such as stroke, shouldn't take aliskiren with ACE inhibitors or ARBs. Vasodilators are the medications helps in preventing the muscles from tightening and the arteries narrowing. Central-acting agents are the medications to prevent the brain from telling to nervous system to increase the heart rate and narrow your blood vessels. [20]

EXERCISES OR PHYSICAL ACTIVITY

The regular best physical activity may decreases the blood pressure are include –Cardiac exercises are the best for the cardiac clients to increase the blood flow. The cardiac exercises like Cycling, brisk walking, dancing, jumping ropes swimming and try jumping jacks. Strength training is a good for muscles and bones and also helps in burning of huge calories. The house hold works also helpful to client's burn calories and it increases client's movement's whole day. Climbing stairs is a super method to workout instead of using elevator. This best to keep blood pressure under control. Stretching exercises is good, it increases the flexibility, and by this method the clients are getting benefits in several ways. It basically improves blood flow to muscles and will relieve stress and back pain. [21]

DISCUSSION

Hypertension is another name for high blood pressure. It can lead to severe health complications and increase the risk of heart disease, stroke, and sometimes death. Blood pressure exerts against the walls of their blood vessels. Hypertension is one of major health problem in India and worldwide. To Prevention and control hypertension by lifestyle modifications such as eat less salt and follow DASH diet, Proper medications, Physical activities and relaxation therapy and meditation may helpful.

CONCLUSION

Hypertension is a major cause of morbidity and mortality and needs to be treated. It is an extremely common condition; however it is still under-diagnosed and undertreated. Hypertension is easy to diagnose and easy to treat. Aim of the management is to save the target organ from the deleterious effect. Besides

pharmacology we have other choices and one has to be acquainted with that choice. Life style modifications should always be encouraged in all Hypertensive patients.

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