AMERICAN Journal of Language, Literacy and Learning in STEM Education
Volume 01, Issue 06, 2023 ISSN (E): 2993-2769

The Advantage of the Drug Nifedipine in the Treatment of Arterial Hypertension

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Abstract

Arterial hypertension is an increase in blood pressure. Older, obese people often suffer from this disease. Arterial hypertension is primary and secondary. Primary hypertension This is a type of hypertension that is not related to other systems and is not caused by secondary factors. There are no specific causes, but there are risk factors that can cause it (breeding, age, ace, hypodynamia, obesity, high consumption of NaCl, alcoholism, smoking, hyperlipidemia, stress). Secondary hypertension. This is a type of hypertension associated with other systems and drugs. These are: kidney, heart, lung, endocrine system, nervous system, and there are types found in pregnant women.

Key words: Arterial hypertension, blood pressure, primary, secondary, kidney, supraglomular, atherosclerosis

The purpose of the study: The pathogenesis of primary hypertension takes place on the basis of 4 different mechanisms. An increase in the amount of adrenaline/noradrenaline due to an increase in the activity of the sympathoadrenal system. Heart rate and minute volume increase. Vascular spasm is observed. The amount of renin in the kidney increases. Due to this, an increase in pressure is observed. Due to the increase in the activity of the renin-angiotensin-aldosterone system, the synthesis of renin in the kidneys also increases, and accordingly, an increase in blood pressure is observed. In the reabsorption of sodium, the blood volume increases by absorbing water, and blood pressure increases accordingly. Age-related hypertension. In this, the amount of elastin in blood vessels decreases and the amount of collagen increases. Blood pressure increases due to a decrease in the elasticity of blood vessels. Secondary hypertension Renal related Renal vascular related – Renovascular.It is mostly caused by atherosclerosis in older men. Atherosclerotic plaque is formed in the blood vessels of the kidney. Blood supply to the kidney decreases, which leads to activation of the hyperglomerular system. The YuGA apparatus increases renin synthesis, thereby increasing blood pressure. Fibromuscular dysplasia often occurs in women in their 20s and 30s. In this case, the blood supply to the kidney decreases due to changes in the vascular structure. Diabetic nephropathy, polycystosis, and glomerulonephritis related to the kidney parenchyma reduce the rate of glomerular filtration. In this case, the amount of blood decreases as above and the amount of renin increases.

Secondary hypertension related to the endocrine system Hyperaldosteronism, Cushing's syndrome, Pheochromocytoma, Hyperthyroidism, Hypothyroidism, Hyperparathyroidism Target organs that change in arterial hypertension: brain, blood vessels, kidney, heart, As a result of the constant elevation of blood pressure in blood vessels of the retina-retina, atherosclerosis occurs due to the hypertrophy of the middle layer of blood vessels and, due to this, aneurysms in other blood vessels. Changes such as subarachnoid hemorrhages, hemorrhagic ischemic stroke, discirculatory encephalopathy, aneurysm are observed in the brain. Cases of heart ischemia, hypertrophy (in the left ventricular compartment) and ventricular fibrillation occur as a result of increased blood pressure. Hypertrophy of the heart causes swelling in the lungs. Increased blood pressure in the kidney initially leads to atherosclerosis, ischemia, fibrosis, atrophy, and finally kidney failure.

Methods of examination: Nifedipine, a drug that blocks calcium channels, is used in arterial hypertension. Calcium channels are special structures in cell membranes in which calcium ions move. These channels are located in various body tissues and smooth muscles. Blockage of these channels by nifedipine changes the concentration of calcium inside and outside the cell and causes the following. It leads to the expansion of arterial vessels, thereby lowering blood pressure, contraction of smooth muscles, improvement of blood supply and nutrition of tissues. This drug is stable in heart ischemia, vasospastic and chronic, in addition to arterial hypertension. It is used in the management of angina pectoris, Raynaud's phenomenon, premature birth. The drug is taken orally. It should be taken without chewing with a small amount of water. The drug is prescribed 2 tablets (40 mg 1 day) 2 times a day. Metabolism is carried out through the gastrointestinal tract and liver. The half-life is 2-5 hours. The maximum concentration in blood plasma is determined within 1-3 hours. 50% is excreted through the kidneys, and 5-15% through the liver and biliary tract. Inactive metabolites are mainly excreted through urine. The medical effect is felt in 20 minutes when taken orally, in 5 minutes when taken sublingually. Nifedipine tablets were used sublingually in hypertensive crises. But it was considered dangerous, that is, administration under the tongue has a hypotensive effect through peripheral vasodilation. This leads to an uncontrollable decrease in blood pressure and reflex tachycardia. Also, nifedipine is an antagonist of mineralocorticoid receptors or has an anti-mineralocorticoid effect. In addition to the heart and blood vessels, the smooth muscles affected by the nifedipine drug are also located in the gastrointestinal tract, bronchi, and even the uterus. Nifedipine cannot be used before the 20th week of pregnancy, as it may cause bad consequences. It is used in cases of increased blood pressure in pregnant women over 20 weeks when other drugs cannot be used. This drug affects blood pressure in pregnant women and prevents the risk of abortion and premature birth. This drug can be administered intravenously together with magnesium sulfate. When using nifedipine, blood pressure is monitored very carefully. Because this drug can suddenly lower blood pressure. If such a situation is observed, it can pose a danger to the life of the mother and the fetus. Nifedipine passes through breast milk. Breastfeeding women are prohibited from using this drug as its effect on the child has not been fully studied. In pregnant women, nifedipine is prescribed 10 mg 4 times a day. This medicine is taken orally with plenty of liquid before meals. Nifedipine is not used in children (under 18 years). The drug is used in a minimum dose sufficient to achieve the required metabolic control. In cases where there is a violation in taking Nifedipine, for example, skipping a key dose, it should not be supplemented by increasing the dose of the drug. The doctor should give the necessary instructions to the patient about this situation.

Summary. Thus, the drug nifedipine is intended for long-term treatment of hypertension and angina pectoris. In hypertension, based on recent clinical studies, diuretics and APF inhibitors are generally considered appropriate, but calcium channel antagonists along with thiazide diuretics are still preferred as primary treatment for patients over 55 years of age. Oral nifedipine It acts through

peripheral vasodilatation. In addition, nifedipine is one of the main methods in the treatment of pulmonary edema, angina pectoris due to its vasodilating effect on coronary arteries.

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