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Review Article

Hypertension best treatment options 2023

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ABSTRACT

Systemic arterial hypertension is main cause of cerebrovascular events and coronary disease. Therefore, treatment and control of this disease is of great importance in public health. Arterial hypertension is a common disease that is defined as the persistent elevation of blood pressure more than 130/80 mm HG by the American college of cardiology (ACC)/American heart association (AHA), and by 8th joint national committee (JNC 8) criteria specify≥140/90 mmHg. The treatment of hypertension is based on non-pharmacological strategies and pharmacological. The best treatment for arterial hypertension is the combination of non-pharmacological strategies and pharmacological. We think that the most important step in a plan for primary care providers should be non-pharmacological strategies, principally the change of the diet of the patient, and encouraging them to lose weight and do physical activity daily. In the case of pharmacological strategies, as we saw in different studies and guidelines, all support the use of a combination of different medications. Because this way patients had better responses to treatment and decreased the rate of complications.

Keywords: Hypertension, Treatment, Guidelines, Combination

INTRODUCTION

Systemic arterial hypertension is main cause of cerebrovascular events and coronary disease. Therefore, the treatment and control of this disease is of great importance in public health. In this review article, we will check the most indicated treatments for the control of systemic arterial hypertension.

Arterial hypertension is a common disease that is defined as the persistent elevation of blood pressure more than 130/80 mmHg by the ACC/ AHA, and by the eighth JNC criteria specify≥ 140/90 mmHg.

It can be classified as primary and secondary hypertension. The primary is the most common type corresponding the 90% of people diagnosed and rest of 10% correspond to secondary hypertension, although secondary hypertension is caused by specific underlying condition. Typical underlying conditions include renal, endocrine, and vascular diseases.[1,2]

In the case for primary hypertension there is not and specific cause, but there are associated risk factors.

Non-modifiable risk factors

Non-modifiable risk factors were like positive family history, race and ethnicity and advanced age.

Modifiable risk factors

Modifiable risk factors were like-overweight and obesity (greatest modifiable risk factor), uncontrolled diabetes,

smoking, excessive alcohol intake, diet high in sodium and low in potassium, physical inactivity and psychological stress.[1,2]

Hypertension is usually asymptomatic, until complications of end-organ damage mainly the brain, retina, and kidneys. Secondary hypertension usually manifests with symptoms of the underlying disease. Since hypertension is often asymptomatic, regular screening is necessary to prevent end-organ damage.

The diagnosis is made with the measure of the blood pressure that could be taken in the office or the house patient.

If elevated, measurements should be repeated on both arms. Elevated average blood pressure on at least two readings obtained on at least two separate visits supports a diagnosis of hypertension.

Table 1: Classification.

Classification of hypertension in adults	2017 ACC/AHA guideline[2]	2014 JNC 8 guideline[3]
Normal BP (mmHg)	SBP<120, and DBP<80	SBP <120 and DBP<80
Elevated BP (mmHg)	SBP 120-129 and DBP <80	SBP 120-139 or DBP 80-89
Stage 1 hypertension (mmHg)	SBP 130-139 or DBP 80-89	SBP 140-159 or DBP 90-99
Stege 2 hypertension (mmHg)	SBP ≥140 or DBP ≥90	SBP ≥ 160 or DBP ≥ 100

Treatment is based on the characteristics of each patient, lifestyle changes for managing hypertension: for all patients with SBP >120 mmHg or DBP >80 mmHg.

Lifestyle measures alone may be trialed for 3-6 months in patients with: Elevated blood pressure, stage 1 hypertension and 10-year ASCVD risk <10 %.

The thresholds for pharmacological treatment are controversial and vary depending on age; the following recommendations are based on the 2017 ACC/AHA guidelines.[2-4]

Adults with SBP≥130 mm Hg or DBP≥80 mm Hg and ≥1 of the following: Clinical ASCVD (e.g., ischemic heart disease, peripheral artery disease, or previous stroke) or congestive heart failure (CHF).10-year ASCVD risk ≥10% (based on the ACC/AHA pooled Cohort equations; includes age≥65 years and diabetes mellitus). All adults with SBP≥140 mmHg or DBP ≥90 mmHg.

First-line options for hypertension are angiotensin-converting enzyme inhibitors and angiotensin receptor blockers for patients with diabetes mellitus/ renal diseases.

Thiazide diuretics and dihydropyridine calcium channel blockers, as one of the initial antihypertensive medications in black patients and in patients with isolated systolic hypertension.

DISCUSSION

The treatment of hypertension is based on non-pharmacological strategies and pharmacological. The article that made a review of the most actual guidelines mentioned that the most important non-pharmacological strategy is changing the patient's diet. The diet refers is the DASH pattern, which consists of a diet rich in fruits, vegetables, whole grains, and low-fat dairy products, with reduced content of saturated and total fat. This type of diet causes the reduction of systolic by 11 mmHg mean.[5] The second most important non-pharmacological are the loss of weight in the patient and aerobic physical activity, both reduce the systolic approximately 5-8 mmHg mean.[5]

The case of pharmacological strategy is different for each ethnic group, due to every group having better to different treatments.

In the same article mentioned above, the African-American population has a better response to the combination of thiazide-type diuretics and calcium blocker channels in lowering systolic blood pressure and stroke risk. In comparison with monotherapy.[5]

For the Asian population, we found a study that mentioned that the best pharmacological intervention is the combination of angiotensin 2 receptor and amlodipine. Because this type of combination reduces the risk of presenting end organ damage. In this study, they compared the combination of the medication mentioned before versus monotherapy in a total of 1198 patients.[6]

Another important factor in the choice of the best pharmacological options is the comorbidities that patients have. In the case of pre-existing hypertension and one of the following pathologies like ischemic heart disease, heart failure, atrial fibrillation, thoracic aortic disease, thyrotoxicosis, migraine, or essential tremor the best option of medication are the beta blockers.[2]

Patients with diabetes mellitus or chronic kidney disease always should have one of the next medications Angiotensin-converting enzyme inhibitors, Angiotensin receptor blockers, or thiazide diuretics for the treatment of hypertension for protection of kidney function.[2,7]

Loop diuretics are the preferred choice in patients with symptomatic heart failure and chronic kidney disease if the GFR<30 ml/min. Potassium-sparing diuretics are preferred in hypertension due to primary hyperaldosteronism and resistant hypertension.[2]

In patient adults, older than 60 years the only that is different in comparison with younger patients is that beta blockers should avoid because this type of medication raises the risk of cardiovascular disease. The other groups to avoid are alpha-blockers and loop diuretics because they can cause this type of patient's orthostatic hypotension and falls.[8]

We found an article that was the new option of treatment aldosterone synthase inhibitors, this type of medication is in phase 3 trials. They have been shown safely and effectively reduce blood pressure compared to a placebo. But the difference with the other medication already on the market is that it reduces the level of aldosterone in blood and has a better response in a patient with resistant hypertension. This reduction of aldosterone levels had shown the reduction of endothelial damage and this could help the prevention of complications like strokes or vascular diseases.[9]

CONCLUSION

In the view of above, the best treatment for arterial hypertension is a combination of non-pharmacological strategies and pharmacological ones. We think that the most important step in the plan for primary care providers should be non-pharmacological strategies, principally the change of the diet of the patient, and encouraging them to lose weight and do physical activity daily. We think that these lifestyle changes should be promoted by authorities in charge of public health. Thus, from an early age you prevent hypertension and in the case in which the patient becomes ill, have a better prognosis and management from the beginning of the diagnosis. In the case of pharmacological strategies, as we saw in different studies and guidelines, all support the use of a combination of different medications. Because this way patients had better responses to treatment and decreased the rate of complications. Therefore, we suggest stopping monotherapy as the first option; when it is decided to start pharmacological treatment. Talking about which is the better combination of medications, we thought that decision should be taken on the characteristics of each patient. In the end, we believed that is a need to investigate new medications for better management of resistant hypertension and more medications made for the prevention of vascular complications like stroke or cardiovascular diseases.

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