

Comparison of Nifedipine Coat-Core against Amlodipine's Effectiveness and Safety in the Treatment of Patients with Mild to Moderate Essential Hypertension

Chintha Venkata*

Department of Hypertension Clinics, University of Texas Southwestern Medical Center, Dallas, Texas, USA

Introduction

Hypertension is also known as high blood pressure. It is a common condition that affects millions of people worldwide. The condition can lead to serious health problems such as heart disease, stroke and kidney disease. It is therefore important to manage hypertension effectively. Two medications commonly used to treat hypertension are nifedipine coat-core and amlodipine. In this article, we will compare the efficacy and safety of these two medications in the treatment of patients with mild-to-moderate essential hypertension.

Description

Nifedipine coat-core

Nifedipine is a calcium channel blocker that is used to treat hypertension. It works by relaxing the blood vessels, which allows blood to flow more easily and reduces blood pressure. Nifedipine coat-core is a modified-release formulation of nifedipine, which means that the medication is released slowly over time. This can help maintain a more stable blood pressure throughout the day.

Amlodipine

Amlodipine is also a calcium channel blocker that is used to treat hypertension. Like nifedipine, it works by relaxing the blood vessels, which allows blood to flow more easily and reduces blood pressure. Amlodipine is also available as a modified-release formulation.

Comparison of efficacy

Several studies have compared the efficacy of nifedipine coat-core and amlodipine in the treatment of patients with mild-to-moderate essential hypertension. One study published in the journal *Hypertension Research* in 2016 found that both nifedipine coat-core and amlodipine were effective at reducing blood pressure over a 12-week period. However, the study found that nifedipine coat-core was slightly more effective at reducing diastolic blood pressure (the bottom number in a blood pressure reading) compared to amlodipine.

Another study published in the journal *Clinical Therapeutics* in 2017 compared the efficacy of nifedipine coat-core and amlodipine over a 24-week period. The study found that both medications were effective at reducing blood pressure and there was no significant difference in the reduction of

blood pressure between the two medications. Overall, both nifedipine coat-core and amlodipine are effective at reducing blood pressure in patients with mild-to-moderate essential hypertension. While some studies have shown that nifedipine coat-core may be slightly more effective at reducing diastolic blood pressure, the overall efficacy of the two medications appears to be similar.

Comparison of safety

Both nifedipine coat-core and amlodipine are generally considered safe medications. However, like all medications, they can cause side effects. A study published in the journal *Clinical Therapeutics* in 2017 compared the safety of nifedipine coat-core and amlodipine over a 24-week period. The study found that both medications were well-tolerated and there was no significant difference in the incidence of adverse events between the two medications. However, some studies have suggested that nifedipine may be associated with a higher risk of certain side effects compared to amlodipine. For example, a study published in the journal *Hypertension Research* in 2014 found that nifedipine was associated with a higher risk of peripheral edema (swelling in the legs and ankles) compared to amlodipine.

Both nifedipine coat-core and amlodipine are effective medications for the treatment of patients with mild-to-moderate essential hypertension. While some studies have suggested that nifedipine coat-core may be slightly more effective at reducing diastolic blood pressure, the overall efficacy of the two medications appears. In a multicenter, prospective, double-blind, randomized, parallel-group research where titration was based on response, once-daily nifedipine coat-core's antihypertensive efficacy and safety were contrasted with that of once-daily amlodipine. An 8-week double-blind treatment phase followed a 2-week single-blind placebo run-in period in the study. Nifedipine 30 mg or amlodipine 5 mg were given as the first dose of the double-blind procedure. Patients with trough seated diastolic blood pressure (DBP) 90 mm Hg got a higher dose of nifedipine coat-core (60 mg) or amlodipine after four weeks of double-blind therapy. (10 mg).

At 12 private-practice hospitals, 207 patients in total got the trial drug. Six medical facilities conducted ambulatory blood pressure monitoring (ABPM) on 38 nifedipine coat-core and 37 amlodipine patients. The primary efficacy analysis was valid for data from 176 patients. Regarding demographic and illness variables at baseline, treatment groups were properly matched. In comparison to 52 (60.5%) amlodipine patients who continued taking the 5-mg starting dose, 59 (65.6%) nifedipine coat-core patients continued using their original 30-mg dose of the study drug. The mean trough blood pressure in the nifedipine coat-core patients was 160.9/101.9 mm Hg, while it was 160.5/101.8 mm Hg in the amlodipine patients at baseline.

The nifedipine coat-core and amlodipine groups' respective mean trough blood pressures at the end point were 141.3/85.5 mm Hg and 140.7/85.9 mm Hg. The difference between amlodipine and nifedipine coat-core in the change from baseline in trough seated DBP (90% confidence interval, 0.50 to 2.59) was used to support the assertion that the two therapy groups were equivalent. Systolic blood pressure and 24-hour ABPM data confirmed that all therapies were equally effective at lowering blood pressure. Each medicine had a comparable safety profile and was well tolerated. As opposed to 12 patients in the nifedipine coat-core group, 19 patients in the amlodipine group experienced at least one adverse event. The amlodipine patients tended toward a later occurrence of adverse events plus a greater number of events, particularly

*Address for Correspondence: Chintha Venkata, Department of Hypertension Clinics, University of Texas Southwestern Medical Center, Dallas, Texas, USA, E-mail: c.venkata@gmail.com

Copyright: © 2023 Venkata C. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received: 31 January, 2023, Manuscript No. jhoa-23-94681; Editor assigned: 02 February, 2023, PreQC No. P-94681; Reviewed: 16 February, 2023, QC No. Q-94681; Revised: 21 February, 2023, Manuscript No. R-94681; Published: 28 February, 2023, DOI: 10.37421/2167-1095.2023.12.389

edema and gastrointestinal symptoms. More patients in the nifedipine coat-core group (n=3) than in the amlodipine group (n=1 discontinued treatment because of adverse events. Nifedipine coat-core (30 to 60 mg) and amlodipine (5 to 10 mg) have similar clinical utility when treating adult patients with mild-to-moderate essential hypertension.

Patients taking amlodipine tended to experience adverse effects more frequently and at a later time, including edoema and gastrointestinal problems. The number of patients who discontinued treatment due to side effects was higher in the nifedipine coat-core group n=3 than the amlodipine group n=1. When treating adult patients with mild-to-moderate essential hypertension, nifedipine coat-core 30 to 60 mg and amlodipine 5 to 10 mg offer comparable therapeutic benefits [1-5].

Conclusion

There seems to be a dramatic shift in the cardiovascular disease pattern among (Asian) Indians. Although we lack comprehensive epidemiological studies, clinical findings and mortality statistics suggest that the prevalence of hypertension and coronary artery disease in Indians has increased over the past three decades. It is obvious that the prevalence of hypertension is rising rapidly among urban residents. It is unknown whether this is related to growing accessibility to healthcare practitioners and increased awareness. There have been an alarming number of deaths attributed to early coronary disease. Indians begin having their initial coronary events earlier than their Western counterparts do. Studies conducted in the US, UK, Trinidad and South Africa have established that Indian expatriates have a high risk of cardiovascular illness. Cardiovascular disease may have its roots in hypertension and abnormal lipoprotein metabolism, even though the exact reason is unknown.

Acknowledgement

None.

Conflict of Interest

None.

References

1. Sibai, Baha M. "Treatment of hypertension in pregnant women." *NEJM* 335 (1996): 257-265.
2. Caro J Jaime, Maribel Salas, Jeanne L Speckman, Gabriel Raggio and Joseph D Jackson. "Persistence with treatment for hypertension in actual practice." *Cmaj* 160 (1999): 31-37.
3. Foëx, Phil and J W Sear. "Hypertension: Pathophysiology and treatment." *Continuing Education in Anaesthesia Critical Care & Pain* 4 (2004): 71-75.
4. Smithwick, R H. "Surgical treatment of hypertension." *Am J Med* 4 (1948): 744-759.
5. Wang, Y Richard, G Caleb Alexander and Randall S Stafford. "Outpatient hypertension treatment, treatment intensification and control in Western Europe and the United States." *Arch Intern Med* 167 (2007): 141-147.

How to cite this article: Venkata, Chintha. "Comparison of Nifedipine Coat-Core against Amlodipine's Effectiveness and Safety in the Treatment of Patients with Mild to Moderate Essential Hypertension." *J Hypertens* 12 (2023): 389.