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ORIGINAL ARTICLE

Efficacy and Tolerability of Amlodipine for Patients with Hypertension

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ABSTRACT

Introduction: For dealing with mild to moderate hypertension, Current hypertension recommendations recommend initial low-dose antihypertensive monotherapy.

Objectives: The main objective of this study is to find out if amlodipine is effective and safe for people with high blood pressure.

Material and methods: This cross-sectional research was done in Midcity hospital, Jail road Lahore between January 2021 to November 2021. The data was acquired by a non-probability consecutive sampling approach.

Results: The data was collected from 100 patients, genders equally. The average systolic and diastolic benefits are presented in Table 1, broken down by age and gender. The average systolic blood pressure was 124.2 15.0 mmHg, while the average diastolic blood pressure was 83.4 9.5 mmHg. Systolic and diastolic blood pressures increased at a rate that was greatest in the oldest age group of males studied.

Conclusion: It is concluded that Amlodipine reduces ambulatory blood pressure with the same tolerance as a low-dose first treatment. This strategy may be helpful in the treatment of blood pressure and, if implemented extensively in clinical practise, should result in an improvement in the percentage of patients whose hypertension is under control.

INTRODUCTION

For dealing with mild to moderate hypertension, Current hypertension recommendations recommend initial low-dose antihypertensive monotherapy. If low-dose monotherapy fails to attain the goal BP within a few weeks, the initial prescription may be raised or supplemented with another medication having a different mechanism of action [1]. First-line low-dose monotherapy reduces side effects [2]. If this strategy is used, the goal-attainment time may be extended, which may discourage patients from gaining blood pressure control and negatively affect their adherence to medication. Many countries' poor control rates might be explained in part by this [3].

For long-acting antihypertensive drugs like telmisartan, it is becoming increasingly usual practice to start therapy at the maximum advised dosage. Amlodipine, a long-acting calcium channel blocker, is commonly begun at 5 mg or 2.5 mg daily [4]. For those who are concerned, ankle edoema, for example, is a big source of concern. In a recent Chinese study, individuals with mild to moderate hypertension were given amlodipine enantiomers of the S-(-) and R-(+) enantiomers, and the results were compared. It is named S-(-)-amlodipine because it reduces blood pressure and has a high affinity for calcium channels. Racemic amlodipine is equivalent to 2.5 milligrams of S-(-)-amlodipine and 10 milligrams of racemic amlodipine [5].

In European standards, treating persons with hypertension to meet their blood pressure (BP) target is one of the most important ways to reduce the risk of cardiovascular disease (CV). It's likely that the office BP's limits make this goal unrealistic. As a matter of fact, the parameters of 24-hour ambulatory blood pressure monitoring (ABPM) may be more precise in this regard, offering more reliable indicators of cardiovascular disease risk [6]. Hypertension-related end-organ damage and the risk of cardiovascular events are strongly correlated with both mean 24-hour blood pressure and BP variability, suggesting that antihypertensive medications should provide stable blood pressure control throughout the course of the whole 24-hour dosing period [7]. Using ABPM, fixed-dose combination treatment with medicines with complementary mechanisms of action can enhance antihypertensive effectiveness and tolerance over a 24-hour period [8]. Olmesartan/amlodipine, one of the most recently licensed combination drugs, has been shown to be effective and safe for patients with mild to severe hypertension in several clinical trials. Olmesartan and amlodipine have been shown to have adequate antihypertensive efficacy in 24-hour ABPM studies, as have other recent treatment algorithms based on these two drugs [9]. This article summarises clinical information on the effectiveness and acceptability of fixed-dose Olmesartan/amlodipine combination therapy for mild-to-severe hypertension [10].

Objectives: The main objective of this study is to find out if amlodipine is effective and safe for people with high blood pressure.

MATERIAL AND METHODS

This cross-sectional research was done in Midcity hospital, Jail road Lahore between January 2021 to November 2021. The data was acquired by a non-probability consecutive sampling approach.

Sample Selection:

Inclusion criteria:

- At least 18 to 60 years old.
- Both sexes are included.
- In the case of hypertension, this includes patients.

Exclusion criteria:

- Those who have renal disease.
- The refusal of permission by patients who are unwilling to participate

Data Collection: 100 patients from Mid-city Hospital met the inclusion and exclusion criteria for the study after it was approved by the hospital's ethical committee. All relevant investigations were carried out to meet the inclusion and exclusion criteria for this study. After obtaining the information, the subject's consent was obtained. Patients were prescribed an amlodipine dosage based on their individual requirements when the diagnosis was established (2.5 mg, 5mg, 7.5 mg, or 10 mg daily). Each patient was advised to make changes to their lifestyle. SYSTOLIC AND DIASTOLIC BLOOD PRESSURE (BP) measurements were made when the patient was sitting and had rested for 10 minutes prior to each visit. Patients were explicitly advised not to smoke before having their blood pressure checked and were instead offered coffee to drink as an alternative. Serum creatinine, SGOT, SGPT, and arbitrary glucose levels were all tested on the first day of the trial and again after 12 weeks of follow-up, respectively.

Blood pressure changes measured efficacy. Clinic BP and systolic/diastolic BP control changed 140/90 mm Hg from baseline. Safety assessments evaluated adverse occurrences, serious adverse events, and clinically noteworthy abnormalities. Symptoms, severity, drug connection, treatment, and outcome were documented for each adverse event.

Data analysis will use "SPSS version 22." Gender is an example of a qualitative data set that will be represented using frequency and percentage calculations.

RESULTS

The data were collected from 100 patients, genders equally. The average systolic and diastolic benefits are presented in Table 1, broken down by age and gender. The average systolic blood pressure was 124.2 15.0 mmHg, while the average diastolic blood pressure was 83.4 9.5 mmHg. Systolic and diastolic blood pressures increased at a rate that was greatest in the oldest age group of males studied.

Table 1: Blood pressure readings in systolic and diastolic units (mm Hg) and prevalence (%) based on age and gender

Age groups (years)	N	Systolic BP (mean ± SD)			Diastolic BP (mean ± SD)		
		Male	Female	Total	Male	Female	Total
25–35	46	123.17 ± 8.54	114.81 ± 9.99	117.84 ± 10.44	82.92 ± 9.0	78.97 ± 7.46	80.59 ± 8.34
35–45	17	123.10 ± 10.77	121.71 ± 15.13	122.90 ± 13.07	85.70 ± 7.66	81.71 ± 9.30	83.75 ± 8.68
45–55	33	132.36 ± 13.21	127.16 ± 18.04	129.66 ± 16.05	89.23 ± 8.16	83.28 ± 10.22	86.14 ± 9.72
55–65	24	133..66 ± 19.53	127.27 ± 15.74	130.97 ± 18.05	86.42 ± 12.15	83.24 ± 9.32	84.83 ± 10.90
Total	120	127.49 ± 14.19	121.39 ± 15.26	124.25 ± 15.05	85.82 ± 9.43	81.34 ± 9.05	83.45 ± 9.49
Test of significance		F = 15.396	F = 15.611	F = 30.466	F = 5.801	F = 4.921	F = 11.174
		p = 0.001	p = 0.001	p = 0.001	p = 0.001	p = 0.002	p = 0.001

After 2, 4, 8, and 12 weeks of treatment, diastolic blood pressure dropped significantly in all groups (p 0.001).

Table 2: Systolic and diastolic blood pressure influences (mmHg)

Duration	Systolic BP (mean ±SD)
	Amlodipine n=100
Day 0	156.81±9.42
2 weeks	155.86±6.11
4 weeks	151.02±5.95
8 weeks	146.68±6.58
12 weeks	144±6.51

DISCUSSION

Hypertension affects both wealthy and underdeveloped nations. We studied the prevalence of hypertension in Pakistan's adult population [11]. There is currently no data that compares the prevalence of hypertension in different nations. Only one recent study on hypertension in Asian nations was found in both local and international literature searches [7]. Because of this, the results of contemporary meta-research may be used to meet current healthcare needs while also considering a wide population. Based on the results of this meta-analysis, it was possible to create an accurate prediction of hypertension's prevalence in Pakistan's general population [12].

As a result, our study on ambulatory blood pressure monitoring provides further insight into the effects of amlodipine over a 24-hour period. Blood pressure levels fluctuated from their respective baselines in a manner that was comparable for both the day and night. Both daytime and nocturnal blood pressure tests showed comparable changes between the two groups. Previous studies on the potential of amlodipine monotherapy to decrease ambulatory blood pressure in patients with mild or moderate hypertension agree with these findings [13]. In point of fact, 5-mg amlodipine monotherapy reduced ambulatory blood pressure by an average of 13/7 mm Hg and 12/7 mm Hg, respectively, in 23 patients with both clinic and ambulatory daytime hypertension (140/90 mm Hg and 120 mm Hg diastolic) [14]. Additionally, in 359 patients with both clinic and ambulatory daytime hypertension, it reduced ambulatory blood pressure by a mean of 17.6/8.9 Amlodipine treatment resulted in a reduction in blood pressure of 12/8 and 11/8 mm Hg, respectively, in 43 patients diagnosed with clinic hypertension (systolic and/or diastolic blood pressures of 140–200 mm Hg), type 2 diabetes, and overt nephropathy. The blood pressures of these 43 patients ranged from 140–200 mm Hg [15].

CONCLUSION

It is concluded that Amlodipine reduces ambulatory blood pressure with the same tolerance as a low-dose first treatment. This strategy may be helpful in the treatment of blood pressure and, if implemented extensively in clinical practice, should result in an improvement in the percentage of patients whose hypertension is under control.

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