Original Article

Herbal Medicine in Hypertension

Clinical Evaluation of Coded Herbal Medicine (Hypoess) and Angiotensin Receptor Blocker (Candesartan) in Essential Hypertensive Patients

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ABSTRACT

Objective: The basic aim of this research study was to determine the comparative effect of herbal treatment in comparison with standard allopathic medicine in control and treatment of essential hypertensive patients.

Study Design: Prospective and comparative study

Place and Duration of Study: This study was carried out in Department of Pharmacology, HCM&D, FH&MS, Hamdard University, Karachi, from January 2014 to July 2014.

Materials and Methods: A total of 200 patients were enrolled in study and were given Hypoess in one hundred patients while remaining one hundred patients received allopathic medicine Candesartan.

Results: In test group one hundred patients were treated with herbal drug (Hypoess) and it decreased mean systolic blood pressure of study patients with a decrease of 15.17% whereas a reduction of 20.56% was found with allopathic medicine Candesartan Cilexetil. Similarly a decrease of 18.07% was found in mean diastolic blood pressure with herbal medicine in test group patients and a decrease of 21.65% was observed in case of allopathic drug in mean diastolic blood pressure of control group patients.

Conclusion: The effects of herbal medicine were found statistically significant in controlling blood pressure and it has been found as an alternative option to treat essential hypertensive patients with its cost-effectiveness.

Key Words: Hypoess, Angiotensin Receptor Blocker (Candesartan) Systolic & Diastolic Blood Pressure

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INTRODUCTION

According to latest research updates 17 million deaths have been reported because of cardiovascular problems worldwide which is about one third of total deaths[1] among all cardiac manifestations. Whereas 9.4 million deaths have been documented as complications and issues related to high blood pressure[2]. Among all heart diseases 45% of deaths reported because of increased blood pressure. Fig-1. shows IHD, mortality rates[3]. A large number of people with high blood pressure have been observed and their number was increased from 600 million in 1980 to 1 billion in 2008[4]. The percentage of high blood pressure was recorded more in African region with a percentage of 46% in comparison with a low prevalence in case of American region with a population of 35% respectively. Moreover a low prevalence was observed in high-income countries 35% in comparison to low-income countries 40% of patients suffered from hypertension[5]. In Pakistan high blood pressure affects 18% of adults over 15 years of age and 33% of adults over 45 years only 50% of all hypertensive patients are diagnosed and half of them are being treated to manage their disease. According to literature prevalence of hypertension in Pakistan estimated as 29, 26432 millions in an estimated population of 160, 19633 millions[6]. High blood pressure involves the interplay of multiple neural, hormonal, renal and environmental factors. Despite effective treatment regimens the mortality among hypertensive subjects is much higher than that of normal individuals. Although reduction in clinic BP is an important and a major determinant in mortality reduction, several other factors influence survival in hypertensive patients[7]. Essential hypertension is the most prevalent form of high blood pressure in all cases of hypertension. It is also known as primary hypertension in which other causes of high blood pressure like; Reno-vascular disease, adrenal

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medulla tumor (Pheochromocytoma), increase in the release of aldosterone secretion, and other associated causes of hypertension of secondary reason shall be excluded[8].

MATERIALS AND METHODS

This research clinical study was completed in pharmacology department of HCM&D, Hamdard University. The patients were enrolled from medical OPD of J.P.MC and herbal centres of Karachi.

The study period was consisted of six months duration. The test group patients received Tab. Hypoess 500 mg two times a day for 90 days, while control group study subjects were given allopathic drug Candesartan 16 mg one time every day for 90 days. One hundred patients (aged 25-75 years) were randomized to receive Hypoess comprised of (Dorema ammoniacum (Daroonaj Aqrabi) =3g, Nepeta hindostana (badranj boya) =3g, Rauwolfia serpentina (Asrol) =2g, and Bombyx mori (Abresham) =2g) in the double-blind, parallel group trial. The effect of both drug groups was seen in systolic and diastolic blood pressure.

Statistical Analysis: The statistical analysis was done with the help of excel software students' test was applied for paired data. Interquartile range test was used to show the normal distribution of data. One way ANOVA and Wilcoxon rank sum test were applied to further reinforce the results. A ($p < 0.05$) was considered as level.

RESULTS

Table 1 and figure 1 shows the variation in the levels of systolic blood pressure for the patients treated with Hypoess and Candesartan at day 0, day 45 and day 90. Both drug groups Hypoess and Candesartan had decreased systolic blood pressure. In Hypoess group patients the mean systolic blood pressure decreased from 161.5± 9.14 mmHg on day 0 to 149.8 ± 6.47 mmHg on day 45 and 137 ± 6.11 mmHg was found at day 90. However, the mean systolic blood pressure in case of Candesartan group on day 0 was 162.45 ± 8.60 mmHg which decreased to 139.5 ± 11.94 mmHg on day 45 and to 129.05 ± 6.92 mmHg on day 90. This effect on B.P was observed highly significant ($p < 0.001$) when compared between day 0, 45 and 90 in both drug groups. The average percentage decrease in systolic blood pressure was observed as 15.17 percent from day 0 to day 90 in test group while; a 20.56 percent reduction in systolic blood pressure was observed in case of control group patients.

Table No.1: Changes in systolic blood pressure from day 0, 45 and 90 of treatment with Hypoess and Candesartan in patients with essential hypertension.

Groups	Day 0	Day 45	Day 90	P – value			% Change
				D 0–45	D 45–90	D 0–90	
Hypoess	161.5 ± 9.14	149.8 ± 6.47	137 ± 6.11	t = 16.13 p < 0.001	t = 18.85 p < 0.001	t = 23.3 p < 0.001	↓15.17
Candesartan	162.45 ± 8.60	139.5 ± 11.94	129.05 ± 6.92	t = 13.7 p< 0.001	t = 8.11 p< 0.001	t = 30.8 p < 0.001	↓20.56
Candesartan vs. Hypoess				t = -7.58 p < 0.001		t = -8.62 p < 0.001	

Key: Hypoess (test drug), Candesartan (control drug), ↓ Indicates decrease in percentage

Table No.2: Changes in mean diastolic blood pressure from day 0, 45, 90, of treatment with Hypoess and Candesartan in essential hypertensive patients.

Groups	Day 0	Day 45	Day 90	P – value			% Change
				D 0–45	D 45–90	D 0–90	
Hypoess	94.1 ± 11.31	85.9 ± 8.74	77.1 ± 6.12	t = 17.7 p < 0.001	t = 17.32 p < 0.001	t = 22.91 p< 0.001	↓18.07
Candesartan	103.7 ± 8.63	89.25 ± 7.76	81.25 ± 7.05	t = 13.07 p < 0.001	t = 17.58 p < 0.001	t = 21.08 p < 0.001	↓21.65
Candesartan vs. Hypoess				t = 2.86 p=0.0046		t = 4.45 p < 0.001	

Table 2 and figure 2 shows the variation in the levels of diastolic blood pressure for the patients treated with Hypoess and Candesartan. Both Hypoess and Candesartan reduced the diastolic blood pressure. The mean diastolic blood pressure of patients of Hypoess group decreased from 94.1± 11.31 mmHg on day 0 to 85.9 ± 8.74 mmHg on day 45 and 77.1 ± 6.12 mmHg on day 90. This effect was found highly significant with a ($P < 0.001$) when compared between day 0, 45, and 90. The average percentage reduction was 18.07 percent from day 0 to day 90. The mean diastolic blood pressure of Candesartan group patients was 103.7 ± 8.63 on day 0, which reduced to 89.25 ± 7.76 mmHg on day 45 and to 81.25 ± 7.05 mmHg on day 90. A 21.65 % decrease was observed from day 0 to 90 in case of control drug group patients.

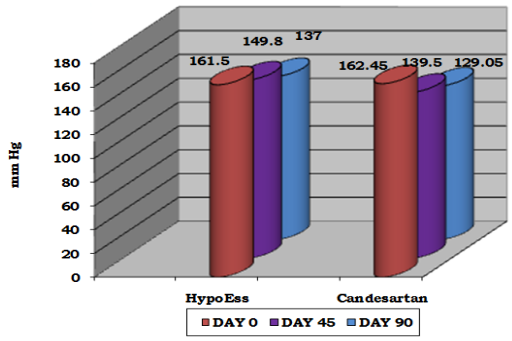

Figure No.1: Changes in systolic blood pressure from day 0, 45, and 90, of treatment with Hypoess and Candesartan in study patients.

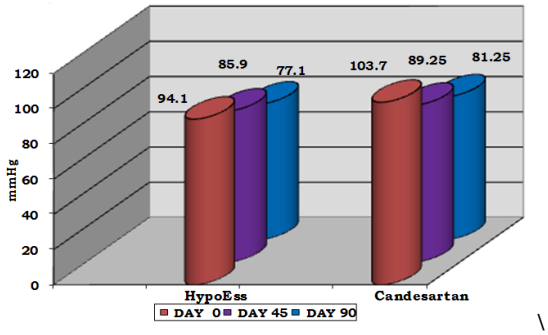

Figure No.2: Changes in diastolic blood pressure from day 0, 45, and 90, of treatment with Hypoess and Candesartan in study participants.

DISCUSSION

High blood pressure is no doubt a disease with great financial and social consequences affecting the population irrespective of any discretion of gender and nation. It is the main cause of progression of cardiovascular disease worldwide. It increases the incidence of stroke, coronary artery disease and problems of cardiac failure globally. Inspite of progress in medical sciences the prevalence of hypertension does not decreased accordingly. In the present study we have compared the effects of standard allopathic drug Candesartan Cilexetil as control and coded-herbal formulation (Hypoess) as test drug in essential hypertensive patients. The ARBS are a new approach to treat hypertension[9]. Candesartan is indicated for the treatment of high blood pressure and cardiac failure[10,11]. Several clinical and basic research studies with Candesartan in healthy volunteers and diagnosed essential hypertensive patients have reported a significant and long lasting decrease in both parameters of blood pressure. The present study reveals the changing effects of Candesartan and Hypoess. The results of present study may also be correlated with the results of research clinical trial of[12] who have observed a reduction of 19% in systolic and 18% decrease in diastolic blood pressure with Candesartan Cilexetil after 4 weeks treatment. Similarly[13] reported a decrease of 15 mmHg in case of systolic blood pressure and a decrease of 5-10 mm Hg in mean diastolic blood pressure with a significant ($p<0.001$) after 8 days treatment, the clinical research study of[14] also found a decrease of 10.8 mmHg in systolic and 7.3 mmHg in diastolic blood pressure with a significant p (<0.001) after 6 weeks of Candesartan treatment. The research findings of researchers like[15,16] differ from our findings in regard of decrease in percentage and magnitude of response; this may be because of difference in drug dosage and duration of study. The decrease of systolic and diastolic blood pressure with test group patients have also been reported and found in literature with research studies of[17,18,19,20]. The antihypertensive effect of herbal medicine has also been reported by[21,22,23] in their studies.

CONCLUSION

In the present study, we have observed the comparative effects of Candesartan Cilexetil with coded unani medicine Hypoess in essential hypertensive patients. Our main objective was to evaluate the antihypertensive effect of coded herbal medicine with a standard established allopathic medicine. We have observed a 15.17% reduction in mean systolic blood pressure while, 18.07 % decrease was observed in case of diastolic blood pressure. This effect on blood pressure was observed to be statistically highly significant.

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