Original Research Paper

Volume -10 | Issue - 5 | May - 2020 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Cardiovascular

SAFETY AND EFFICACY OF FIMASARTAN IN PATIENTS WITH ARTERIAL HYPERTENSION COMPARED WITH TELMISARTAN

Dr Nirmal Garabadu — Senior Medicine specialist, Health Care Institute & Research Centre, Cuttack, Odisha

Dr Satya Narayan Routray* — Professor, Department of Cardiology, SCB Medical College, Cuttack, Odisha
*Corresponding Author

ABSTRACT

OBJECTIVE: Angiotensin receptor blockers (ARBs) are most widely prescribed antihypertensive drugs at present. This study was under taken to compare the efficacy and safety of the ninth ARB Fimarsartan with the most widely prescribed ARB Telmisartan.

MATERIAL AND METHODS: Newly diagnosed stage 1 and 2 essential hypertension patients in the age group of 18 to 65 years of either sex were included in the study. Patients with hypersensitivity to ARBs, secondary hypertension, pregnant women, history of Drug/ Alcohol abuse, cardiac arrhythmias were excluded from the study. Patients who gave consent for the study were divided into 2 random groups 1 and 2 – the first received Fimasartan and the second received Telmisartan. Point of control was defined as blood pressure<140/90 mm of Hg.

RESULTS: 120 patients were randomized into two groups. Out of 60 patients in group 1 who received Fimasartan, 3 lost for follow up. Out of 60 patients in group 2 who received Telmisartan, 4 lost for follow up. 75% patients in Fimasartan group and 78.33% in Telmisartan group had control of blood pressure. There was no significant difference between the two drugs in both mean systolic and diastolic blood pressure at 7 days, 1 month, 2 months and 6 months. Adverse effects encountered in 6% of the patients in Fimasartan group while it occurred in 5% of them in Telmisartan group.

CONCLUSION: Fimasartan is an effective blood pressure lowering drug with efficacy and safety similar to that of Telmisartan.

KEYWORDS :

INTRODUCTION

Hypertension is the most common risk factor for Cardio Vascular Disease in India and World wide. The prevalence of hypertension is rapidly increasing in India. A recent survey reported hypertension in 25.3% (27.4% in men and 20% in women) of persons above 18 years of age[1]. In the treatment guidelines of hypertension, Angiotensin Receptor Blocker (ARB) has confirmed its place in step 1. All the ARBs are similar but each one of them is distinct as regarding their potency and additional metabolic actions. Physicians in India prefer ARBs as their first choice in treatement of hypertension [2].

Fimasartan , the ninth ARB is formed by replacement of imidazole part of Losartan with Pyrimidin – 4(3H) and claimed to be of higher potency and stronger efficacy then Losartan[3,4] and exhibited a quick onset of anti hypertensive effect during initial phase II and phase III clinical trials [5].

The safety, efficacy and compliance of fimasartan were found to the execellent in a large patient population in South Korea, which had patients potentially at higher risk for adverse events[(6)]. Further more similar results were noticed in a study conducted on a low to medium risk hypertensive patients in Mexico.[(7,8)] Fimasartan has also been found to be of benefit in patients with blood pressure variability. [(9)]

Efficacy study of Fimasartan for prevention of cardiovascular events in patients with metabolic syndrome is underway. [(10)] Fimasartan has been found to be beneficial in patients with diabetes and chronic kidney disease. [(11,12)]

The present study was undertaken to compare the safety and efficacy of fimasartan with telmisartan in hypertensive adults where the drugs were prescribed for at least 3 months.

MATERIAL AND METHODS

This Prospective, randomized open labeled parallel study was carried out in patients attending the Out-Patient Department of S C B Medical College and Health Care Institute & Research Centre,Cuttack, Odisha.

Inclusion criteria:

Patients newly diagnosed with stage I & II essential hypertension of either sex within the age group of 18–65 years with blood pressure of ≥140/90 mmHg were included in the study.

The upper limit of blood pressure in both groups was 179/109 mmHg. Only newly diagnosed hypertensive patients without prior anti hypertensive treatment and without any associated diseases were included.

Exclusion criteria :

Severe hypertension ≥ 180/110 mm of Hg, hypersensitivity to ARBs, secondary hypertension with any other etiology, history of Drug/Alcohol abuse, cardiac arrhythmias (atrial flutter, atrial fibrillation, ventricular tachycardia), patients with sinus bradycardia, sick sinus syndrome, Prinzmetal's angina, heart block, chronic heart failure, myocardial infarction, peripheral vascular disease, pregnant and lactating women, patients with impaired kidney function test confirmed by serum creatinine level >2 mg/dl, patients with impaired liver function test such as SGPT or SGOT >2 times than normal limit, patients with asthma were excluded from the study.

120 patients who were willing to participate and gave informed consent and fulfilled inclusion and exclusion criteria were enrolled in the study. Patients were randomly divided into 2 groups by computer generated numbers. Group 1 received Fimasartan 60 mg or 120 mg daily and Group 2 received Telmisartan 40 mg or 80 mg daily depending on the initial blood pressure and up titrated where ever necessary.

Standard Conventional sphygmomanometer was used for BP measurement. Two recordings of blood pressure were taken at an interval of 15 min in sitting position. After initial screening, the demographic data, past medical history, family history, findings of physical examination, and clinical examination were recorded in the case report form and following investigations were done. ECG, X-ray chest PA view, CBC, Blood urea,creatinine, LFT, FBS, 2 hr PPBS, Serum electrolytes, urine RM & micral exam.

Selection of patients was restricted to those who had a BP of ≥140/90 mm of Hg to <180/110 mm of Hg (stage I and stage II hypertension).

Fimasartan was started at a dose of 60 or 120mg daily while Telmisartan was started at a dose of 40 or 80 mg daily depending on the blood pressure.

Point of control was defined as blood pressure<140/90 mm of Hg after initiation of therapy. They were followed up at the end of 7days 1,2 & 6 months.

Adverse Drug reaction(ADR) monitoring :

The ADRs related to Fimasartan and Telmisartan were monitored and

documented in suitably designed ADR documentation form after initial notification of the suspected ADR by physicians.

Causality of the ADRs were assessed by using Naranjo's Algorithm.

Statistical analyses:-
The primary end point for assessing efficacy was the change from baseline in mean systolic and diastolic BP after 8 weeks of treatment.

Data were entered in MS excel 2007, same were exported into STATA (version 10). For normally distributed continuous data, comparison for significance of difference were done by using 1) Student's paired t test for within group before and after treatment. 2) Student's unpaired t test was used for comparison of normally distributed continuous data between the two treatment groups. P value<0.05 was considered statistically significant.

RESULTS:-
This study was carried in the 120 patients, who were randomized and divided into two groups of 60 each. Group 1 received 40 to 80 mg of Fimasartan and Group 2 received 40 to 80mg of Telmisartan. 3 patients in Group 1 and 4 patients in Group 2 lost to follow up and finally 57 patients in Gr 1 and 56 patients in Gr 2 completed the study.

In Fimasartan group, mean systolic blood pressure at baseline was 165.91±12.38, and at the end of the study mean systolic blood pressure was 128.82±8.27(systolic blood pressure was decreased by 37.09±4.92 mm of Hg). Mean diastolic blood pressure at baseline was 96.31±8.63 and mean diastolic blood pressure at the end of the study was 84.16±5.32(diastolic blood pressure decreased by 12.15±3.27). There was a significant reduction in blood pressure.(P value<0.001) (figure-1).

In Telmisartan group, at baseline mean systolic blood pressure was 166.62±13.35, and at the end of the study mean systolic blood pressure was 128.36±9.31 (systolic blood pressure was reduced by 38.26±4.12mm of Hg). Mean diastolic blood pressure was decreased from 96.8 ± to 9.82 to 84.51± 8.52 (diastolic blood pressure was reduced by 12.29±2.058 mm of Hg). There was a significant reduction in both systolic and diastolic blood pressure (P value<0.001) (figure 2).

Mono-therapy with Fimasartan 60 or 120mg daily has been compared with Telmisartan 40 or 80mg daily. There was no significant difference between the two drugs in both mean systolic and diastolic blood pressure at 7 days, 1 month, 2 month and 6 month

The most common adverse effects occurring in 6% of the patients in the Fimasartan group were rashes, and hypotension related events (dizziness, dizziness postural, syncope, vertigo and vertigo positional), whereas in Telmisartan group dizziness, postural syncope and vertigo were observed in nearly 5%.

DISCUSSION:-
Fimasartan a newer angiotensin receptor blocker has shown cardiovascular benefits of lowering blood pressure in preclinical as well as clinical trials. These benefits are due to its property of high affinity to and slow dissociation from AT1 receptor. In clinical trials, antihypertensive therapy has been associated with reductions in (1) stroke incidence, averaging 35-40%; (2) myocardial infarction (MI), averaging 20-25%; and (3) HF, averaging >50%[15].

In the present study we observed that monotherapy with Fimasartan is equally efficacious to Telmisartan given once daily in reducing mean blood pressure, by using mean systolic BP and mean diastolic BP monitoring at 8 weeks as primary efficacy end point. Telmisartan has shown slightly greater reduction in diastolic blood pressure at 7 days and latter.

Other studies have demonstrated efficacy and safety of Fimasartan in large number of patients South Korea and Mexico.

There were no remarkable findings of clinical concern in laboratory test results, vital signs, body weight and 12-lead electrocardiogram findings.

CONCLUSION:-
Fimasartan, a newer angiotensin receptor blocker is an effective and safe blood pressure lowering drug and is comparable to that of Telmisartan.

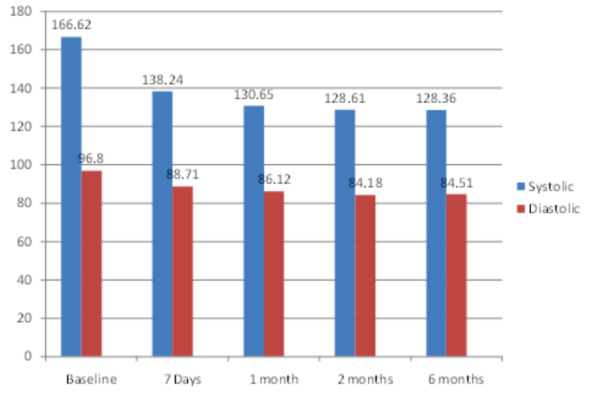

Figure 1—Effect of Fimasartan on Blood Pressure (Systolic and Diastolic)

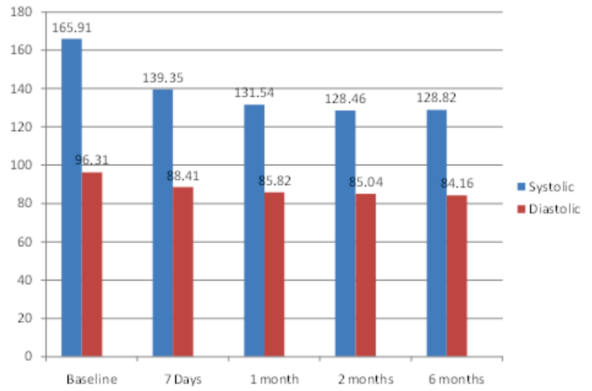

Figure 2—Effect of Telmisartan on Blood Pressure (Systolic and Diastolic)

REFERENCES

1. Gupta R, Gaur K, S Ram CV: Emerging trend in hypertension epidemiology in India. J Hum Hypertension 2019;33(8):575-587.
2. Ramakrishnan S, Ingole S, Deyeta l. Management of hypertension; insight into prescribing behavior with focus on angiotensin receptor blocker.Jpract cardiovascular science 2017;3:22-27.
3. Yi S, Kim TE , Yoon Sit et al. Pharcokinetic interaction of fimasartan. J Cardiovascular Pharmacology 2011;57:682-9.
4. Fimasartan. Am J Cardiovasc Drugs 2011;11:249-52.
5. Lee SE, Kim YJ, Lee HY, et al. Efficacy and tolerability of fimasartan, a new angiotensin receptorblocker, compared with losartan (50/100mg): A 12- week, Phase III, multicenter, protion clinical trialwith an optimal 12-week extension phase in adult Korean patients with mild-to-moderate hypertension.ClinTher. 2012;34(3):552-68.
6. Park JB, Sung KC, Kong SM et al. Safety and efficacy of fimasartan in patients with arterial hypertension(Safe-Ken Arb study):an open label observational study. Am J Cardiovascular Drugs.2013;13(1):47-56
7. Cardona-Munoz EG, Lopez-Alvardo A, Conde-Carmona I et al. Safety and efficacy of fimasartan in Mexican patients with grade 1-2 essential hypertension. Arch Cardiol Mex 2017;87:316-25.
8. Conde-Carmona I, Cordona E. Open label study of the efficacy and safety of fimasartan 60 mg alone as initial treatment and its randomized escation in Maxican patients with essential hypertension grade 1 or 2.J American Journal of Cardiology.2015;65(10-5).
9. Shim MS , Kang DR , Kim C etal. Fimasartan for independent reduction of blood pressure variability in mild to moderate hypertension . Drug Design development & Therapy .2016 : (10) 1573-1580.
10. Kim C , Kim MY , Kang DR etal. The efficacy of Fimasartan for Cardiovascular events and metabolic syndrome : Pulse 2013; 1: 177-185.
11. Kim JY , San JW, Park S etal. Fimasartan proteinuria sustained reduction in comparison with Losartan in diabetic Chronic Kidney Disease . Trials. 2017:18:632.
12. Duran AM, Corcuera JO. Antihypertensive efficacy of fimasartan and additional benefits in patients with renal dysfunction. Ann Clin Exp Hypertension 2017;5:1046.