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Efficacy & Acceptibility of Azilsartan as Antihypertensive: A Clinical Evaluation in Magadh Zone of Bihar

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Abstract
Introduction*: Better control of hypertension while maintaining good quality of life with least side effect has always been the aim of antihypertensive therapy. Search for newer drugs continues and azilsartan has come up with so claimed improved quality.*
Aims and Objectives: *To study the so claimed improved quality of azilsartanin terms of efficacy and acceptability.*
Material and Method: *2 doses of azilsartan (40 & 80 mg) is compared with 40 mg of olmesartan. 111 patients enrolled from the outdoor patients of Anugrah Narayan Medical College Hospital, Gaya randomized to three groups and clinic BP measurements recorded and analysed.*
Results: *Azilsartan showed more reduction of both systolic and diastolic BP compared to olmesartan .Safety profile was comparable. Quality of life appears slightly better with azilsartan.*
Discussion: *Many clinical trials also favours its superior efficacy. Azilsartan possesses very high affinity for angiotensin type II receptor (AT I R) with characteristically slow dissociation property Azilsartan also exhibits pleotropic effect making it better for cardio vascular and reno-protection.*
Conclusion: *Azilsartan is a novel angiotensin receptor blocker. It exhibits all the good quality of ARB with superior efficacy.*
 Keywords: *angiotensin receptor blocker. azilsartan .olmesartan. clinic blood pressure. Clinical trials*.

Introduction
Increased blood pressure remains one of the most important risk factor for overall cardo-vascular events[1,2]. Control to target still lacks in large number of patients, many a times on individual basis, achieving target blood pressure becomes difficult or treatment costs quality of life[3,4]. Formulation of best protocol and search for better drug continues[5]. Azilsartan has recently been added to the armamentarium of antihypertensive drugs and this is a novel angiotensin receptor blocker (ARB)[6]. In general, ARBs has become a

widely used drug because of its efficacy and better tolerability profile[7], azilsartan is claimed to be better on the basis of pharmacodynamic and pharmacokinetic property[8] and different clinical trials. Keeping this in view, the present study is undertaken to evaluate the usefulness of azilsartan in local population of Magadh zone of Bihar especially in regards of its efficacy and acceptability relating to quality of life.

Material & Method

111 patients of mild to moderate hypertension over the age of 18 years from outdoor of Anugrah Narayan Medical College Hospital, Gaya were included.

Patients with other significant disease or with severe hypertension or probable secondary hypertension and pregnancy were excluded from the study. Any other antihypertensive drug or any other drug known to affect BP were not allowed during the study.

Three separate measurements were taken to diagnose the hypertension. Clinic BP measurements are made with semi automated digital BP recorder after the patient is seated quietly for 5 minutes together with observing the standard protocol and precaution.

Azilsartan 40mg & 80 mg and olmesartan 40 mg started after diagnosis in randomized manner and asked to take the drug in the morning.

Post treatment measurement were taken about 24 hours after the previous dose of study drug at the end of 2nd, 4th and 6th week. 5 parameters of quality of life – sense of wellbeing, physical activity, intellectual activity, sexual dysfunction and sleep were assessed during every meeting by asking the patient to fill up the self-assessment form on a scale of 0 to 5, zero being the worst and 5 for the best feel and adverse effect were also queried without leading questions or recorded as and when complained.

Statistical analysis of the observed data is done with the help of Microsoft Excel 2016.

Results

218 patients were examined for the study, 111 enrolled, mean age of the enrolled patients was 54 years, 66 were male and 55 were female with mean base line BP of 163 to165/ 96 to 98.

37 patients were given 40 mg of azilsartan, 38 received azilsartan 80 mg and 36 were given 40 mg Olmesartan. 3 patients withdrew for not responding properly and 2 due to adverse effects. Analysis of post treatment change from baseline for both clinic systolic and clinic diastolic BP showed better response with both doses of azilsartan compared to olmesartan (table-1) .61 % patients on azilsartan 80 mg reached the goal BP of less than 140/90 mm Hg while 53% with azilsartan 40 mg and only 44% with olmesartan 40 mg achieved the target BP.

Table-1: Changes in clinic BP from baseline

DRUG	AZILSARTAN 40 mg		AZILSARTAN 80 mg		OLMESARTAN 40 mg	
	N=36		N=35		N=35	
	Systolic	Diastolic	Systolic	Diastolic	Systolic	diastolic
Baseline BP, mmHg	163.2	96.6	164.5	97.4	163.3	97.3
Change from baseline at week 2	-15.4	-4.2	-17.6	-5.3	-11.4	-3.2
Change from baseline at week 4	-18.5	-6.7	-20.2	-7.9	-14.7	-5.9
Change from baseline at week 6*	-19.8	--7.5	-20.9	-8.1	-16.5	-6.7

*P value for the difference achieved in systolic & diastolic BP at the 6th week-for AZL 80 vs olmesartan40 is 0.007 & 0.006 respectively and for AZL 40 vs olmesartan40 is 0.043 & 0. 049

Side effect profile were similar in all the groups with 8% of the patients complaining of side effects like-headache, dizziness, fatigue and cough. On the front of quality of life, all appeared better with slight superiority of azilsartan.

Table-2: Effect on Quality of Life-Scale:0 to 5; 0-worst, 5-best

DRUGS	AZL 40mg		AZL 80 mg		OLMESARTAN 40mg	
No of patients	36		35		35	
	Mean score		Mean score		Mean score	
Parameters	Pre-treat	Post-treat	Pre-teat	Post-treat	Pre-treat	Post-treat
Well being	2.1	3.5	2.2	3.7	2.1	3.3
Physical activity	2.4	3.3	2.1	3.9	2.3	3.1
Intellectual activity	3.1	3.8	3.1	4.1	2.9	3.6
Sexual activity	2.7	3.8	2.4	3.9	2.5	3.7
SLEEP	2.4	3.9	2.7	3.9	2.4	3.6

Discussion

80 mg azilsartan showed superior and statistically significant efficacy over 40mg olmesartan. 40mg azilsartan also was better than 40 mg olmesartan on the front of efficacy. Quality of life was improved with allthe group, azilsartan however appears superior.

Azilsartan is a novel orally active ARB developed by replacing candesartan's 5 member tetrazole ring with oxo-oxadiazole ring. Like other ARB, azilsartan also selectively blocks the Angiotensin II receptor type I (AT1 R) thereby blocking all known physiological action of angiotensin II like its vasoconstrictor effect and release of aldosterone which are relevant to hypertension. It is highly selective showing more than 10,000fold higher affinity for AT I R than for AT2 R[9]. It's dissociation from AT I R is characteristically slow making it good for better 24 hour B P control. Azilsartan has also been shown to posses pleiotropic effects thereby showing the possibility of better cardiovascular and reno protection[7,10]. Combination of azilsartan with chlorthalidon or amlodipine also promises better result[11,12].

The drug is well absorbed and its bioavailability is not influenced by food [6].

Different Clinical trials has also shown azilsartan to have better efficacy and better 24 hour control in patients of mild to moderate hypertension with near similar side effect profile [13,14,15].

Conclusion

Azilsartan is a new addition to the armamentarium of antihypertensive drugs and proved to be very effective and appears to have superior efficacy over other ARBs. It is well tolerated with beneficial effect on quality of life.

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