

Original Research Article

Nationwide surveillance for Telmisartan alone or with combination at real world therapy in Indian patients with hypertension (START)

Manoj B. Chopda¹, Sunil G. Gadkar², Yashwanth A. Lakshmaiah³, Ravi K. Lambata⁴,
Dharmadeep C. Dabhade^{5*}, Sanket R. Newale⁵

¹Department of Cardiology, Magnum Heart Institute, Nashik, Maharashtra, India

²Department of Cardiology, Global Speciality Hospital, Gwalior, Madhya Pradesh, India

³Department of Cardiology, RL Jalappa Narayana Heart Centre, Kolar, Karnataka, India

⁴Department of Cardiology, Parvati Seva Sadan, Cuttack, Odisha, India

⁵Department of Medical Services, Emcure Pharmaceuticals Ltd. Pune, Maharashtra, India

Received: 11 August 2021

Revised: 16 September 2021

Accepted: 17 September 2021

*Correspondence:

Dr. Dharmadeep C. Dabhade,

E-mail: dharmadeep.dabhade@emcure.co.in

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Angiotensin receptor blockers (ARBs) are amongst the most preferred class of antihypertensive as reported at various evidences or guidelines. However, choice amongst ARBs differs between practicing physicians in real-life scenario. This survey aimed to understand the usage preferences of telmisartan therapy alone and in combination for treating hypertension (HT) among practitioners at various clinical settings in real-life scenario in India.

Methods: A cross-sectional survey was conducted with a pre-validated survey questionnaire consisting of 15 questions pertaining to the telmisartan and its combination usage in HT management. Total 498 registered medical practitioners (mostly physicians and cardiologists) had participated in survey. They were approached for seeking their perception, opinions, and prescribing behaviour. Categorical data was summarized by number (n) and percentage (%) in each category. Data were summarised in frequency tables.

Results: Key findings from the data analysed were as follows: Around 20-40% of patients been reported to have co-morbid hypertension and diabetes as reported by majority of the physicians. Preferred class of drug in patients with hypertension with diabetes reported to be ARB. Around 90.36% of doctors reported that telmisartan was the most preferred ARB in patients with hypertension associated with high cardiovascular risk. Around 90.76% of doctors reported for their preference for telmisartan in patients with hypertension for 24-hr BP control. Around 82.93% of doctors preferred telmisartan in patients with hypertension and stroke/post-MI status.

Conclusions: Indian healthcare practitioners prefer telmisartan as the most preferred ARB either alone or in a combination in patients with hypertension, including those with comorbidities.

Keywords: Hypertension, Angiotensin receptor blockers, Telmisartan, Combination therapy

INTRODUCTION

Hypertension (HT) is a significant risk factor for various adverse cardiovascular events comprising stroke, myocardial infarction, heart failure and renal failure. It is a major public health problem globally and is a leading cause of mortality and morbidity in developing countries.

A high prevalence of this condition been reported by the studies from various parts of India along with a trend towards low awareness and poor blood pressure (BP) control.^{1,2}

Antihypertensive treatment is a common therapeutic intervention and plays an important role in order to achieve

the BP control and to reduce cardiovascular events.³ The selection of the most suitable antihypertensive monotherapy or combination therapy depends on careful evaluation of an individual patient and appropriate consideration of drug pharmacology.⁴

Angiotensin receptor blockers (ARBs) are one of the first-line drug classes recommended by various published HT guidelines or evidence. The use of ARBs as first-line therapy both as monotherapy and in combination with other antihypertensive drugs like calcium channel blockers (CCBs), and diuretics for the management of essential hypertension also been observed in India.^{4,5}

Although ARBs been used in Indian patients with hypertension, the choice of ARBs differs between practicing physicians. there is no clear consensus on which ARB to be preferred in HT with various comorbidities. Moreover, real-life data on physicians' preference towards usage of ARBs and specifically of telmsartan relative to published evidence is occasional. This survey aimed to understand the usage inclinations of ARB with an emphasize on telmisartan alone and in combination with other antihypertensives and its place in HT management among practitioners at various clinical settings in India.

METHODS

This was a cross sectional, observational, questionnaire-based survey conducted across India for 4 months from May 2020 to August 2020. All participants completed a specially designed survey questionnaire, based on their

prior clinical experience of usage pattern of telmisartan in hypertension.

The survey questionnaire consisting of 15 questions were prepared. The salient features of the questionnaire included information regarding patient pool of HTN alone and with diabetes, preferred therapy for these case scenarios and also in newly diagnosed young and elderly hypertensives, combination therapy preference in uncontrolled hypertension, preferred ARB for hypertension associated with high cardiovascular risk or stroke/post-MI status and for 24 hr BP control. Practicing general physicians and cardiologists were approached for seeking their perception, opinions, and prescribing behaviour. The physicians were explained about the purpose of the study; if interested and willing, they were requested to complete the validated questionnaire which was collected back and analysed. As this was a cross-sectional survey of practitioners and patients were not approached and patient data were not taken, Ethics Committee approval was not taken. The number of responses to each question was categorized. Categorical data was summarized by number (n) and percentage (%) in each category. Data were expressed in n (%).

RESULTS

A total of 498 physicians and cardiologists who were managing a considerable percentage of hypertensive patients in routine clinical practice were surveyed. Majority (53.21%) of doctors opined that 30 to 50% patients visiting to them usually suffers from hypertension.

Table 1: Antihypertensive agent preferred as a drug of choice in newly diagnosed young* patients with hypertension.

Antihypertensive agent preferred as a drug of choice in newly diagnosed young hypertensive	No. of doctors responded (n=498)	Percentage of doctors responded (%)
Diuretic	41	8.23
CCB	64	18.33
ACE Inhibitor	26	7.44
ARB	374	75.10
BB	44	12.60

*(age<55 years). CCB= Calcium channel blocker, ACE= Angiotensin-converting-enzyme, ARB= Angiotensin receptor blocker, BB= Beta blocker.

Table 2: Dual combination therapy preference in uncontrolled hypertension.

Dual combination therapy preference in uncontrolled hypertension	No. of doctors responded (n=493)	Percentage of doctors responded
ARB + CCB	324	65.06
ARB + Diuretic	121	24.30
ACE Inhibitor + CCB	10	2.01
ACE Inhibitor + Diuretic	22	4.42
BB + CCB	10	2.01
Any other	6	1.20

ARB= Angiotensin receptor blocker, CCB= Calcium channel blocker, ACE=Angiotensin-converting-enzyme, BB= Beta blocker.

Age group of 45-60 years is most commonly affected by the hypertension as reported by majority of the participants. 20-40% of patients been reported to have comorbid hypertension and diabetes. Majority (57.23%) of participants opined that, they prefer >140/90 as a BP cut-off value to initiate with pharmacotherapy. BP goal in patients with hypertension was reported to be <130/80 mmHg by majority of the participants, whereas, <140/90 mmHg was the next BP goal by 27.91% of participants. Majority of the participants opined that only <5% patients attains BP goal only with lifestyle modification. Calcium channel blocker been reported as the most preferred agent for initiation of therapy in patients with hypertension. ARBs been mostly preferred agent as a drug of choice in newly diagnosed young hypertensive (Table 1). Around 53.01% of doctors preferred ARBs as a drug of choice in newly diagnosed elderly hypertensive (age >55 years). ARB + CCB reported to be the most preferred dual combination therapy in uncontrolled hypertension (Table 2). ARB + CCB + Diuretic been reported as the most preferred triple combination therapy in uncontrolled hypertension. Preferred class of drug in patients with hypertension with diabetes reported to be ARB. Around 90.36% of doctors reported that telmisartan is the most preferred ARB in patients with hypertension associated with high cardiovascular risk. Around 90.76% of doctors reported for their preference for telmisartan in patients with hypertension for 24-hr BP control. Around 82.93% of doctors preferred telmisartan in patients with hypertension and stroke/post-MI status.

DISCUSSION

This cross-sectional survey provides useful information on physicians' preferences for the clinical management of patients with HTN. In this survey, telmisartan was preferred for 24-hour BP control by majority of the physicians (90.76%). With longest plasma elimination half-life of approximately 24 h as well as the highest affinity for the angiotensin II type 1 receptor, telmisartan provides long-lasting antihypertensive effects compared with other ARBs. Telmisartan has the highest volume of distribution being the most lipophilic ARBs, which facilitates greater tissue/organ penetration. Consequently, telmisartan has been recommended as a preferred ARB treatment option with a number of clinical advantages, such as long-lasting BP control and CV protection.

The renin-angiotensin-aldosterone system plays an important role in the pathophysiology of HTN and is closely related with cardio- and cerebrovascular events and CKD. Evaluating each ARB is important in the pharmacotherapy of HTN. Selection of a particular drug among the class of drug depends on various factors including patient profile, age, associated comorbidity, cost of therapy, and side effects. Recently a real-world data from 8 international databases (n= 22,97,881) reported that, ARBs are superior in terms of safety with similar efficacy versus ACEI. Regardless of being equally guideline-recommended first-line therapies for

hypertension, these results support preferentially starting ARBs rather than ACE inhibitors when initiating treatment for hypertension for physicians and patients considering renin-angiotensin system inhibition.⁶

Telmisartan, a long-acting ARB, is indicated for the treatment of HTN and for CV risk reduction and has a preferential pharmacodynamics profile compared with several other ARBs. The ONTARGET study demonstrated that telmisartan has ability to reduce CV morbidity in patients who manifest atherothrombotic CVD.⁷ Telmisartan treatment in the TRANSCEND trial was associated with a significant reduction in the number of myocardial infarction events in HTN patients compared with normotensive individuals. In addition, telmisartan provides better BP lowering to ACEIs in the entire 24-hour period – early morning, late morning, daytime as well as nighttime.⁸

The results of current survey are in full accordance to the recommendations made by the current hypertension guidelines with more preference being given to ARB in all age groups except for diuretics, which are still under prescribed. Although HTN guidelines do not recommend any specific ARB to be used in HTN patients with different comorbidities, real-life clinical practice experience of Indian physicians depicted in this study suggests that telmisartan is the most preferred ARB for all subsets of HTN patients and outscores other ARBs in terms of pleiotropic benefits.

Telmisartan is the only ARB with an indication for the prevention of CV disease progression, is available in various single-pill combination (SPC) formulations, like telmisartan/amlodipine. Clinical studies suggest that in CV high-risk patients and those with evidence of renal disease, the use of an ARB/CCB combination may be preferred to ARB/HCTZ combinations due to superior renoprotective and CV benefits and reduced metabolic side effects in patients with concomitant metabolic disorders.⁹ The limitation of this survey is that it was healthcare practitioner's opinion and practices with subjective responses; the actual prescription patterns were not analysed.

CONCLUSION

Indian healthcare practitioners prefer ARBs as the first choice in most hypertensive patients, which shows agreement with the recommendations by available hypertension guidelines followed worldwide. Telmisartan has emerged as the most preferred ARB among all, for most of the patients with hypertension including those with comorbidities like diabetes. ARB in combination with CCB seem to be the favourable option for dual antihypertensive therapy.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Tiruneh SA, Bukayaw YA, Yigizaw ST, Angaw DA. Prevalence of hypertension and its determinants in Ethiopia: A systematic review and meta-analysis. *PLoS One.* 2020;15(12):e0244642.
2. Gupta, R., Gaur, K. S. Ram, C.V. Emerging trends in hypertension epidemiology in India. *J Hum Hypertens.* 2019;33:575-87.
3. Musini VM, Gueyffier F, Puil L, Salzwedel DM, Wright JM. Pharmacotherapy for hypertension in adults aged 18 to 59 years. *Cochrane Database Syst Rev.* 2017;8(8):CD008276.
4. Ramakrishnan S, Ingole S, Dey A, Jain R. Management of hypertension: Insights into prescribing behavior with focus on angiotensin receptor blockers. *J Pract Cardiovasc Sci.* 2017;3:22-7.
5. Khan MY, Pandit S, Abdulkutty J, Navasundi G, Hazra PK, Phadke U et al. Effectiveness of Telmisartan on Blood Pressure Control in Hypertensive Patients in India: A Real-World Retrospective Study from Electronic Medical Records. *Cardiol Ther.* 2021;10:255-69.
6. Chen R, Suchard MA, Krumholz HM. Comparative First-Line effectiveness and safety of ACE (angiotensin-converting enzyme) inhibitors and angiotensin receptor blockers: A multinational cohort study. *Hypertension.* Published online. 2021.
7. Yusuf S, Teo KK, Pogue J. Telmisartan, ramipril, or both in patients at high risk for vascular events. *N Engl J Med.* 2008;358(15):1547-59.
8. S Yusuf, K Teo, C Anderson. Effects of the angiotensin-receptor blocker telmisartan on cardiovascular events in high-risk patients intolerant to angiotensin-converting enzyme inhibitors: a randomised controlled trial. *Lancet.* 2008;372(9644):1174-83.
9. Mallat SG. What is a preferred angiotensin II receptor blocker-based combination therapy for blood pressure control in hypertensive patients with diabetic and non-diabetic renal impairment? *Cardiovasc Diabetol.* 2012;11:32.

Cite this article as: Chopda MB, Gadkar SG, Lakshmaiah YA, Lambata RK, Dabhade DC, Newale SR. Nationwide surveillance for Telmisartan alone or with combination at real world therapy in Indian patients with Hypertension (START). *Int J Res Med Sci* 2021;9:3091-4.