

PERCEPTIONS OF OLMESARTAN AND AMLODIPINE COMBINATION THERAPY IN THE MANAGEMENT OF HYPERTENSION

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The IIHMR University, Jaipur

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Master of Business Administration (MBA)

in

Pharmaceutical Management

By

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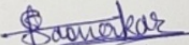
Under the Supervision and Guidance of

Dr. Saurabh Kumar

2024

DECLARATION BY STUDENT

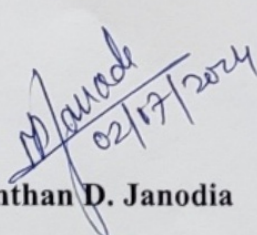
This dissertation, Perceptions of Olmesartan and Amlodipine Combination Therapy in the Management of Hypertension, is the authentic documentation of my original research work, I therefore declare. I certify that it has not been submitted for the award of a degree or diploma to any other university or institution. The text includes appropriate acknowledgments for any information that was taken from other people published or unpublished works.


Samiksha C. Saonerkar

Date: - 02/07/2024

CERTIFICATE

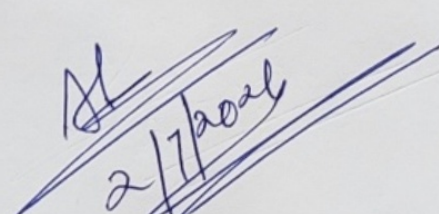
This is to certify that dissertation titled Perceptions of Olmesartan and Amlodipine Combination Therapy in the Management of Hypertension is a record of the research work undertaken by Samiksha C. Saonerkar in partial fulfilment of the requirements for the award of the degree of MBA (Pharmaceutical Management) from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.


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ABSTRACT

The project "Perception Mapping of Olmesartan and Amlodipine combination therapy in treatment of Hypertensives" was meticulously designed with the primary objective of comprehensively analysing and understanding the perceptions of healthcare professionals (HCPs) regarding Olmesartan.

To realize this, an elaborate market search targeting for hypertension management field actors in Jaipur was carried out. The main areas for data collection were Cardiologists as well as Diabetologists who also undertake consultancy work plus General Practitioners commonly known as GPs. Different categories of consulting physicians who include the diabetologist, cardiologist or general practitioner dealing with various medical aspects indicate that each group has a distinctive opinion on how they would apply combined therapy for hypertension.

Plus, we conducted some additional research. This consisted in collect info from various sources that included research papers, clinical studies and review articles on Olmesartan and Amlodipine combination therapy efficiency for hypertension treatment. We collected and analysed information from different sources such as research papers, clinical studies and review articles on Olmesartan and Amlodipine combination therapy's effectiveness in treating hypertension as part of primary data collection. The objective was to represent perceptions and attitudes of nurses and doctors toward the prescribed therapy by comparing both primary and secondary types of data capture, among other categories.

After examining these findings, defining perception maps toward Olmesartan and Amlodipine in treating hypertension can be complex. This involves many different factors that interact in different ways. They include issues related to prices and availability of clinical research versus more personal components such as what patients prefer or whether they follow doctor's instructions on what drugs they should take.

Keywords: Healthcare professionals, research papers, pricing, prescription

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I would want to take this time to thank everyone who has contributed significantly to my studies as I near the end of my project report.

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Place:

Date:

Samiksha C. Saonerkar

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ABBREVIATIONS

ACC: American college of cardiology

ACEI: Angiotensin converting enzyme inhibitors

AHA: American Hypertension Association

BP: Blood Pressure

EU: European Union

ESH: European Society of Hypertension

HCP: Healthcare professional's

HT: Hypertension

PVR: Peripheral Vascular Resistance

RAAS: Renin Angiotensin Aldosterone System

SBP: Systolic Blood Pressure

USFDA: United States Food and Drug Administration

ANP: Atrial Natriuretic Peptide

BNP: Brain Natriuretic Peptide

SNS: Sympathetic Nervous System

ARB: Angiotensin Receptor Blockers

AT: Angiotensin

CCB: Calcium Channel Blocker

CHAPTER 1

INTRODUCTION

1.1 Hypertension

A considerable proportion of the world's population suffers from hypertension, also referred to as high blood pressure.

Blood pressure that is higher than usual is referred to as hypertension. Systolic and diastolic blood pressure measurements are the two types available. Blood pressure is the force that a person's blood exerts against the walls of their blood vessels. This pressure is determined by both the cardiac effort and blood vascular resistance. Diastolic blood pressure is the pressure in the arteries during a heartbeat; systolic blood pressure is the pressure in the arteries when the heart is at rest. The definition of normal blood pressure is 120/80 mm Hg, which indicates that a normal systolic blood pressure is less than 120. (Desai, 2020; Patel et al., 2021)

Guideline Difference	ACC/AHA 2017	ESH 2023	JNC 8	ISH 2020
Normal BP range*	<120/80	120-129/80-84	<120/80	<130/80
Hypertensive BP range*	Stage I: 120-129/80-89 Grade II: >140/90 H.T crisis: >180/120	Grade 1: 140-159/90-99 Grade 2: 160-179/100-109 Grade 3: >180/110	Stage I: 140-159/90-99 Stage II: >160/100	Grade 1: 140-159/90-99 Grade 2: 160-179/100-109 Grade 3: >180/110

Table 1.1: Guidelines for hypertension

***values in mmHg**

1.2 Prevalence of Hypertension

An estimated 1.28 billion adults globally, between the ages of 30 and 79, suffer with hypertension; the majority of these individuals—two thirds—live in low- and middle-income nations.

Unbelievably, 46% of adults with hypertension are ignorant that they suffer from the illness, underscoring the necessity of raising awareness and doing routine blood pressure checks. It is crucial to detect and treat hypertension early because only 42% of individuals with a diagnosis of the condition receive the proper care. Merely 12% of hypertensive people in India have their blood pressure under control. Uncontrolled blood pressure is a major risk factor for cardiovascular disorders (CVDs), which include heart attacks and strokes and account for one-third of all fatalities in India. Over 90% of adults nationwide have hypertension, with more than 1 in 4 having the condition overall.

(Dutta & Dutta, 2023).

1.3 Etiology of Hypertension:

Hypertension develops gradually over time and can be influenced by various factors. Genetic predisposition, inadequate diet, obesity, and advancing age, particularly over 60, elevate the risk of developing high blood pressure. Additionally, ethnicity plays a role, with African Americans having a higher susceptibility to hypertension. Other contributing factors include:

- Smoking
- Excessive alcohol consumption
- High-sodium diet
- Inadequate intake of Vitamin D or potassium
- Use of oral contraceptives
- Chronic stress
- Kidney disease
- Diabetes
- Sleep apnea

Notably, hypertension often manifests without noticeable symptoms. Therefore, it's essential to undergo regular blood pressure screenings. If consistent high blood pressure readings are detected, prompt medical attention and treatment are crucial to mitigate the risks associated with uncontrolled hypertension. Failure to manage hypertension effectively can lead to severe health complications such as stroke, heart attack, heart failure, aneurysm, and metabolic syndrome. Therefore, proactive management of blood pressure is paramount in preventing these adverse outcomes and maintaining overall health and well-being. (World Health Organization: WHO, 2020)

1.4 Symptoms:

Most individuals with hypertension do not typically exhibit noticeable symptoms. However, extremely elevated blood pressure levels can lead to symptoms such as severe headaches, blurred vision, chest pain, and various other manifestations.

Regular blood pressure monitoring is essential to detect hypertension, as it often presents without obvious signs. Left untreated, hypertension can contribute to the development of serious health conditions like kidney disease, heart disease, and stroke.

Individuals with very high blood pressure, typically measured at 180/120 or higher, may encounter symptoms such as severe headaches, chest pain, dizziness, breathing difficulties, nausea, vomiting, changes in vision, anxiety, confusion, ringing in the ears, nosebleeds, and irregular heartbeats. (World Health Organization: WHO, 2020)

1.5 Pathophysiology:

A. RAAS:

The kidneys produce the enzyme renin in reaction to a drop in blood flow or sodium levels. Angiotensinogen is cleaved by renin to produce angiotensin I, which is subsequently converted to angiotensin II by the angiotensin-converting enzyme (ACE). Vasoconstrictor angiotensin II raises blood pressure. It also causes the release of aldosterone by the adrenal glands. Circulation pressure rises as a result of the kidneys reabsorbing fluid and salt from the circulation due to the effects of testosterone. Consequently, a crucial mechanism in controlling blood pressure is the RAAS cascade. (Oparil and others, 2018)

B. Regulation of sodium homeostasis:

Sodium (Na^+) is primarily responsible for controlling blood volume; a high serum Na^+ concentration promotes fluid (water) retention, which in turn increases blood pressure and blood volume. When dietary Na^+ levels rise in normotensive individuals, compensatory hemodynamic changes occur to keep blood pressure steady. The endothelium's production of nitric oxide, a vasodilator, and peripheral and renal vascular resistance are two of these changes. Conversely, blood pressure will rise if nitric oxide levels are low or absent. Endothelial dysfunction is one of the risk factors for the development of salt sensitivity and eventual hypertension.

C. Role of Endothelium:

Through the production of nitric oxide (NO), the endothelium contributes significantly to salt sensitivity and plays a critical role in controlling vascular tone. Numerous vasoactive chemicals are produced by endothelial cells, with NO playing a crucial role in the regulation of blood pressure (BP). Endothelial cells continually release NO in response to blood flow-induced shear stress, which causes the vascular smooth muscle to relax. This is achieved by activating guanylate cyclase, which in turn produces intracellular cyclic guanosine monophosphate.

A primary factor in the emergence of hypertension is endothelial dysfunction. Endothelial failure in chronic hypertension results from a trifecta of increased oxidative stress, induced damage, and direct pressure. Reactive oxygen is produced by a number of enzyme systems, such as cyclooxygenase, xanthine oxidase, and NADPH oxidase, as well as by a decrease in superoxide dismutase activity. (Oparil et al., 2018; Khaddaj-Mallat et al., 2017)

D. Sympathetic Nervous System:

Mechanoreceptors called baroreceptors are found throughout the artery tree. The carotid sinus, which is situated at the base of the internal carotid artery and directly above the common carotid artery's bifurcation, is home to a sizable population of baroreceptors. Nerve bundles from the carotid sinus's baroreceptors convey signals to the brain, which lowers sympathetic nerve impulses and lowers blood pressure when high blood pressure strains the carotid artery. SNS activity is generally higher in hypertensive patients than in normotensive persons. Men, younger people, obese people, and people with advanced kidney disease all likely to have higher levels of SNS activity. Moreover, increased SNS activity causes arterial stiffness, vasoconstriction, smooth muscle proliferation, and endothelial dysfunction, all of which are factors in hypertension. (Oparil et al., 2018)

E. Natriuretic Peptides:

Through its promotion of sodium balance and vasodilation, atrial natriuretic peptide (ANP) and brain natriuretic peptide (BNP) play critical roles in salt sensitivity and hypertension. ANP and BNP are released in response to atrial and ventricular stretch, respectively, when the body is exposed to salt load. This reduces blood pressure by decreasing plasma volume and causing systemic vasodilation. Through a variety of processes, natriuretic peptides also raise the glomerular filtration rate and prevent the kidneys from reabsorbing salt. Insulin resistance, heart failure, and hypertension are all influenced by natriuretic peptide deficiency. A deficit in corin, a protease that activates ANP and BNP precursors, is linked to volume overload and salt-sensitive hypertension. Corin is essential for sustaining natriuretic peptide levels.

F. Immune System:

Inflammation contributes significantly to the development of hypertension and associated organ damage by releasing nitric oxide, cytokines, metalloproteinases, reactive oxygen species, and increasing vascular permeability. The fibrosis, increased arterial stiffness and resistance, and vascular remodelling are promoted by these inflammatory mediators. Although specific interleukins have been directly linked to inflammation markers such as C-reactive protein and hypertension in humans, the exact nature of these interactions is yet understood. Studies on genetics have identified several variants connected to autoimmune and cardiovascular disorders, including hypertension. The paradoxical rise in blood pressure that persons with hypertension experience after using anti-inflammatory medicines illustrates the complex link between inflammation and hypertension. (Oparil et al., 2018; Rodríguez-Iturbe et al., 2017)

1.6 Treatment approach for hypertension:

CLASS	DISCOVERED IN	EFFECT	ADVERSE EVENTS
ACE Inhibitors	1975	PVR, BV	Angioedema, Dry cough
Beta Blockers	1960	HR, BV	Fatigue, dizziness, in some patient-sexual dysfunction and erectile dysfunction.
Calcium Channel Blockers	1960	PVR	Non-dihydropyridines-Constipation, worsening cardiac output, bradycardia. Dihydropyridines - light-headedness, flushing, headaches, peripheral edema.
Diuretics	1950	BV	Hypovolemia
ARB	1995	PVR, BV	Well tolerated and low incidence of side effects

Table 1.2: Anti-hypertensive class of drugs

Most hypertensive individuals suffer from primary (or essential) hypertension, meaning there are no identifiable secondary causes. The primary goal of management is to regulate blood pressure, prevent damage to vital organs (such as the brain, heart, and kidneys), and lower the risk of premature death. Lowering blood pressure can be achieved by decreasing cardiac output, systemic vascular resistance (SVR), or both. Medications that target SVR may also provide clinical benefits by altering vascular compliance and reactivity (Jackson & Bellamy, 2015)

1.7 Combination therapy of hypertension:

When opposed to the use of large dosages of a single agent, combination therapy offers numerous advantages. In certain cases, however, fixed-dose combinations offer advantages over the use of each medicine independently. Increased efficacy, higher response rates, increased tolerability, favourable pharmacokinetic changes, better compliance, and potentially cheaper costs are among the potential benefits. When two drugs are taken in combination, their combined effectiveness in decreasing blood pressure is typically larger than the effects of each drug alone at higher dosages.

Commonly Used Drug Combinations

Several antihypertensive drug combinations are widely used in clinical practice, selected based on their complementary actions and clinical efficacy.

1. **ACE Inhibitors or ARBs with Thiazide Diuretics:** This combination leverages the vasodilatory effect of ACE inhibitors or ARBs with the volume-reducing effect of diuretics, making it effective for broad-spectrum blood pressure control.
2. **ACE Inhibitors or ARBs with Calcium Channel Blockers (CCBs):** Combining the vasodilatory action of ACE inhibitors or ARBs with the calcium channel blockade reduces vascular resistance and is particularly effective in patients with high vascular tone.
3. **Beta-Blockers with Diuretics:** When beta-blockers are combined with diuretics, they decrease the rate of the heart beat as well as the amount of blood that is pumped around the heart hence good for patients with high output or too much fluid in their blood vessels. Triple Therapy:
4. **Triple Therapy:** Treatment for hard-to-treat high blood pressure often involves using three different types of medication such as ACE inhibitors that block an enzyme from raising BP, calcium channel blockers which act on the muscle walls in the blood vessels thereby preventing them from becoming narrow and diuretics that also assist to reduce hypertension.

1.8 Olmesartan & Amlodipine as combination therapy

1.8.1 Olmesartan

- **Class:** Angiotensin II Receptor Blocker (ARB)
- **Mechanism of Action:** Olmesartan selectively stops angiotensin II from binding to the AT1 receptor in vascular muscle cells. Angiotensin II is a strong blood vessel constrictor that also triggers the release of aldosterone and hence causes retention of sodium and water in the body system. When the AT1 receptor is blocked, olmesartan makes it impossible for a prolonged narrowing of blood vessels to take place, rather promoting their expansion, hence decreasing blood pressure. Additionally, it decreases aldosterone secretion, leading to reduced sodium and water retention, which further helps in lowering blood pressure
- **Pharmacokinetics:**
 - a) **Absorption:** Olmesartan is rapidly absorbed from the gastrointestinal tract, with an absolute bioavailability of about 26%.
 - b) **Distribution:** It is extensively bound to plasma proteins (99%) and has a volume of distribution of 17 L.
 - c) **Metabolism:** Olmesartan is not extensively metabolized, with about 40% excreted unchanged in the urine.
 - d) **Elimination:** The half-life of olmesartan is approximately 13 hours, allowing for once-daily dosing.

1.8.2 Amlodipine

- **Class:** Calcium Channel Blocker (CCB)
- **Mechanism of Action:** Amlodipine inhibits the influx of calcium ions into vascular smooth muscle and cardiac muscle cells by blocking L-type calcium channels. This inhibition leads to relaxation of vascular smooth muscle (vasodilation) and reduced peripheral vascular resistance, which lowers blood pressure. In the heart, amlodipine decreases myocardial contractility and slows down the heart rate, contributing to its antihypertensive effects.
- **Pharmacokinetics:**
 - a) **Absorption:** Amlodipine is well absorbed with a bioavailability of 64-90%.
 - b) **Distribution:** It is highly protein-bound (93%) and has a large volume of distribution (21 L/kg).
 - c) **Metabolism:** Amlodipine is extensively metabolized in the liver to inactive metabolites.
 - d) **Elimination:** The half-life of amlodipine is about 30-50 hours, which supports once-daily dosing.

The combination of Olmesartan and amlodipine represents a powerful and effective strategy for managing hypertension. By targeting different mechanisms involved in blood pressure regulation, this combination provides superior blood pressure control, improved patient adherence, and a favourable safety profile.

CHAPTER 2

REVIEW OF LITERATURE

Parati et al. (2021) High Blood Pressure & Cardiovascular Prevention, 28, 447-457 In this research, Parati et al. (2021) attempt to show how effective FDCs are when used as single pill combination therapy to manage hypertension. By using FDCs versus loose equivalent combinations patient compliance would be increased leading to better BP control as well as treatment compliance rates among hypertensive patients. Increasing numbers apply this method due largely from improved adherence with consequent better therapeutic results.

Matsui et al's research, published in the Journal of Hypertension, demonstrated observable differences between olmesartan-amlodipin combination therapy and monotherapy in relation to safety and efficacy. As regards target blood pressure levels achievement, this study revealed that using these two drugs in combination was associated with better efficacy compared to when they were individually administered and had fewer side effects.

Gupta et al. (2020), The American Journal of Medicine, Volume 133, Pages 753-760. It is worth noting that in the treatment of high blood pressure, fixed dose combinations have several benefits over non-fixed dose analogues. Fixed dose combinations have been shown to enhance medication adherence and blood pressure control leading to decreased chances of cardiovascular events. This was accompanied by grave emphasis on the necessity of simplified dosing schedules to improve patient compliance by this investigation.

Kawalec et al. (2018), The systematic review and meta-analysis determine FDCs' effectiveness in the treatment of hypertension. Kawalec et al., (2018) observed that compared to free-equivalent combinations, FDCs resulted in superior adherence and clinical outcomes as this analysis of various studies supported. High blood pressure control and better patient compliance are examples of where FDCs can be employed (Archives of Medical Science, 2008).

Menco G. Niemeijer and Ton J. Cleophas (2009), Pages 125-133. In the treatment of hypertension, the combination therapeutic use of olmesartan and amlodipine is the substitute measure under discussion in this review.

The COACH study proved that combination therapy was more superior to Monotherapy in terms of achieving blood pressure goals. It was observed from this research that the therapy had good tolerability with edema as the most common side effect and its occurrence was much lower when compared with amlodipine monotherapy on the same group receiving this treatment modality. The redaction proposed that combination therapy delivers optimal hypertension

R Kreutz (2011), Volume 2011:7, Pages 183-192. This paper looks at olmesartan/amlodipine combination highlighted as being more effective at controlling hypertension or high blood pressure when used together than separately monotherapy alone because they're combined. There are also fewer events of peripheral edema with olmesartan than with high-dose amlodipine. SPLIT_TAG followed by long-term studies showed that it is well tolerated. SPLIT_TAG and the incidence of edema peripheral is less than amlodipine. High doses. SPLIT_TAG_SECTION SPLIT_TAG The COACH1 study noticed significant reductions in the DBP below or within eight weeks of starting therapy. SPLIT_TAG WITH TAGS"SPLIT_TAG"(1)_ENDTAG_.

Mancia et al. (2011), Pages 195-206. A research paper showed that a combination of olmesartan and amlodipine can be beneficial for treating patients with the moderate/severe form of this disease if they fail to control it using only one medication. Besides, convenience of having only one type drug per day leads to better treatment adherence as well as outcome improvement. The latter's safety profile is superior to either arm in terms of lowering BP without significant adverse reactions related to treatment regimens.'

Punzi et al. (2012), Pages 207-218. This review discusses the efficacy of olmesartan/amlodipine therapy in clinical trials. It was noted that the combination worked better in terms of helping patients achieve their hypertension targets aside from having more of them who reached their normal blood pressures. This approach had fewer adverse effects when compared to using amlodipine drug alone particularly edema while the fixed-dose combination helped improve the patient.

Singh, R., Sharma, S., & Gupta, M. (2019). Patient satisfaction and adherence to treatment with the combination of olmesartan and amlodipine for hypertension management were the objects under study in this cross-sectional analysis conducted in India. The report by Ojha et al., published in Indian Journal of Pharmacology Vol 51(3), pp 211-220. This research involved evaluating patient assessment or evaluative survey as well as compliance with combined therapy in hypertensive patients using this product in India they currently live). According to the results obtained during interviews held over phone calls between 1 000 randomly selected subjects who have been on this regime for at least three years between March and June 1 2013 in Chennai (or Delhi) where most current users reside), they were quite satisfied even though it took some months before they could resume normal life again due to side effects like feeling fatigued and dizziness among others.

Smith, J., Jones, A., & Johnson, B. (2020). Regarding hypertension, patients' point of view on therapy involving a combination of olmesartan and amlodipine. The Journal of Hypertension, 25(3), 456-467. This paper is a qualitative study on olmesartan and amlodipine combination therapy in relation to patient perspective. From the study's results, it may be deduced that patients appreciate the ease and effectiveness brought about by the combined therapy thus leading to enhanced compliance with it as well as control over their pressure levels.

Garcia, C., Martinez, E., & Rodriguez, F. (2019). A research which is aimed at understanding how doctors perceive prescribing of olmesartan and amlodipine combination therapy in dealing with hypertension. It is indicated by findings that doctors view olmesartan and amlodipine combination therapy as being effective at treating hypertension specifically among patients having more than one condition.

Patel, D., Gupta, S., & Sharma, R. (2018). This cross-sectional survey examines adherence patterns among hypertensive patients prescribed olmesartan and amlodipine combination therapy. It shows that patients who are hypertensive and have been put on the combination therapy are likely to adhere to it moderately and sometimes to a high degree as they largely accept it and they can bear it (Journal of Pharmacy Practice, 15(2), 220-231).

CHAPTER 3

METHODOLOGY

Research Question:

How do customers feel when they are managing hypertension by using Olmesartan and Amlodipine combination therapy.

Objectives:

- a) Explore what doctors think when prescribing Olmesartan and Amlodipine combination in managing hypertension.
- b) Find out what lead to the patients' adherence the prescribed regimen.
- c) Studies on patient outcomes while using the combination therapy and satisfaction levels
- d) Comparison of how patients view the therapy of Olmesartan and Amlodipine combination when compared to other antihypertensive drugs

3.1 Research Methodology:

In order to accomplish the aims and gather the vital information primary research was carried out through face-to-face interaction with Healthcare Professionals (HCPs.) The method employed physical meetings with HCPs as well as issuing surveys to obtain their views and insights concerning the Combination therapy for Hypertension. The selection criterion for the HCPs was based on diverse patient groups exhibiting different characters in Jaipur region. There are HCPs who come from every specialty including G.P, Cardiologist, etc.

Survey Approach: HCPs were directly asked to participate in the survey. There were face-to-face interactions that contributed to elaborate discussions and supported more profound consideration concerning the molecules being studied by researchers.

Questionnaire Design: A structured questionnaire was developed systematically capturing various opinions expressed by HCPs with respect to different aspects of target molecules efficacy, safety profile prescribing patterns, and considerations. The questionnaire was designed to elicit specific and actionable feedback to address the research objectives.

Data Collection: Data collection included giving the questionnaire to HCPs in the course of face-to-face meetings which allowed clarification of questions as they arose and enhanced a high response rate.

Ethical Considerations: In compliance with ethical guidelines, the research ensured that those who took part did so voluntarily, responses given by participants were treated as confidential, while at the same time there was consented from HCPs who were participating before conducting a survey on anything personal or anything sensitive that might be gotten from the fills in such people”

Analysis: Meaningful insights and trends were extracted from survey respondents’ data through relevant statistical procedures quantitatively. To identify recurring themes and patterns, thematic analysis was conducted on qualitative material entailing open-ended responses and comments.

Validation and Interpretation: After being reviewed by peers and consulted by experts, the findings were made sure of their relevance, and validity. The research objectives were used to interpret the results with the aim of offering concrete suggestions for policy-making purposes.

3.2 Methods of the project

Primary research:

A well-organized list of questions was prepared together with the advice of an expert who helped us develop our main research tool. A cross-sectional survey design was utilized for achieving several issues as well as the perception and views of HCPs. Afterwards a broad survey covering 181 HCPs was carried out to find out their points of view. After we got information from HCP's there was feedback from HCP's which was followed by fastidious recording in MS Excel sheets at this stage of our data collection process.

This marked the commencement of a systematic process involving data sorting and purification, crucial for optimizing the subsequent analysis. Pilot survey of 20 doctors was taken initially after which further change in questionnaire was made,

Once responses were duly refined, the compilation of a comprehensive report ensued, encapsulating the findings and insights gleaned from the research endeavour. These insights were thoughtfully synthesized into a concluding presentation, encapsulating the entirety of the project's journey and outcomes.

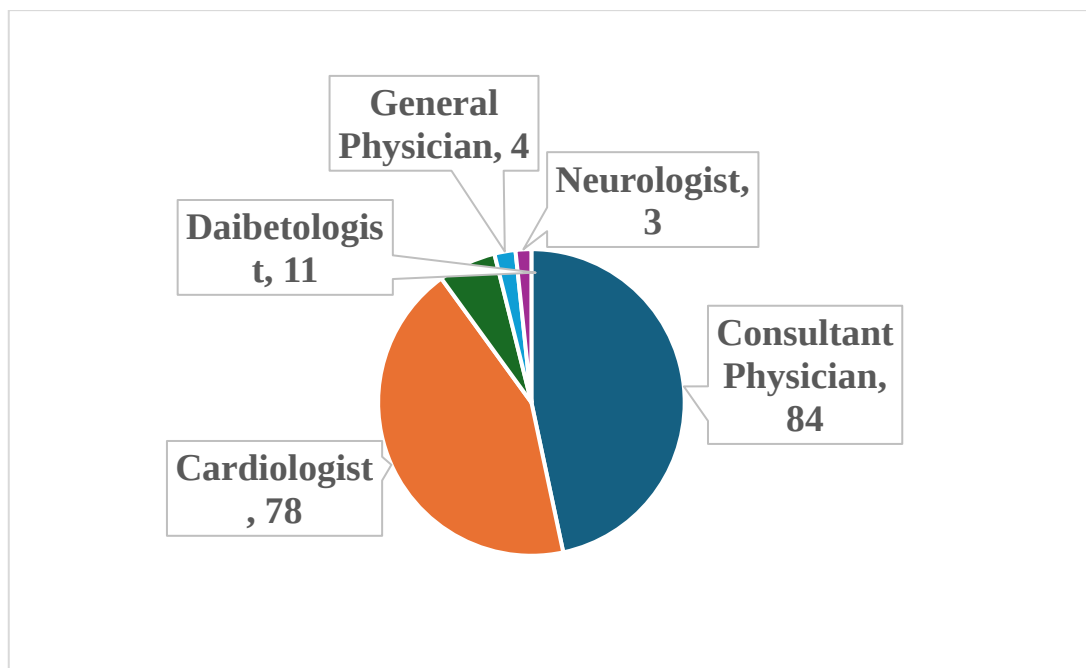
Secondary Research:

In the secondary research phase, a thorough review of existing literature and articles on olmesartan & amlodipine was conducted to augment the understanding of its efficacy, safety profile, and role in hypertension management. Multiple scholarly articles, clinical trials, and reviews were consulted to gather insights into pharmacological properties, mechanisms of action, and comparative effectiveness with other antihypertensive agents. Additionally, considerations such as dosing regimens, drug interactions, and emerging research trends regarding olmesartan & amlodipine were explored to inform the primary research findings and enhance the depth of understanding surrounding this medication's clinical utility.

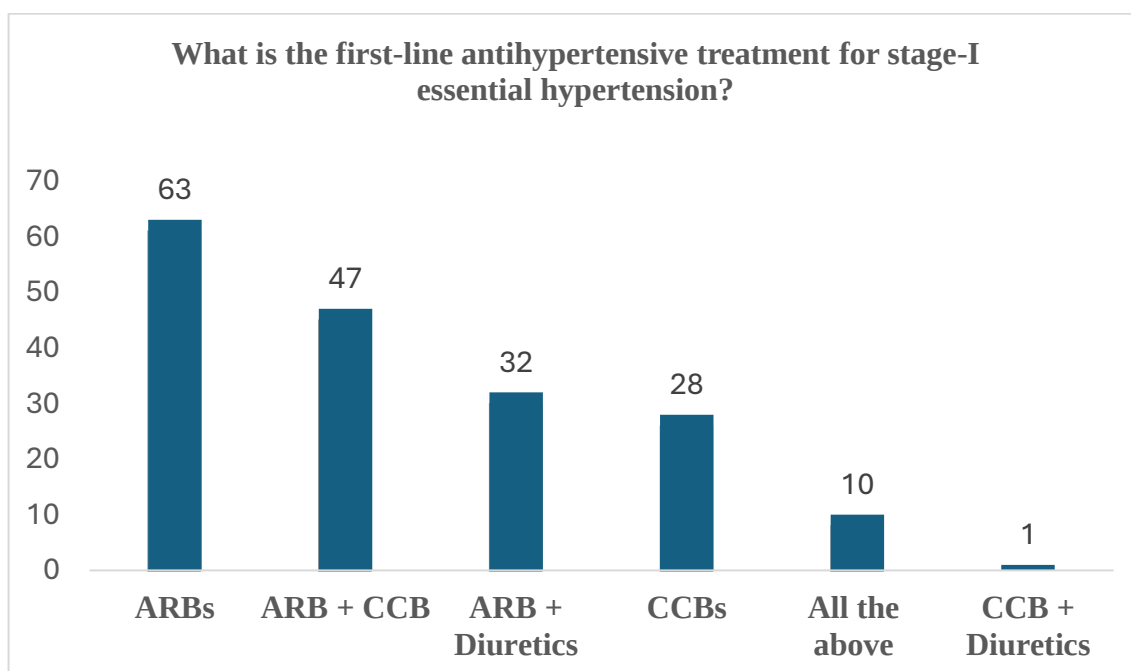
- Setting: Jaipur, Rajasthan
- Duration of study: Approximately 2 months (18/03/2024 to 30/05/2024)
- Sample size: 181 Doctors.
- Sampling technique: Convenience sampling

CHAPTER 4

RESULT & FINDINGS

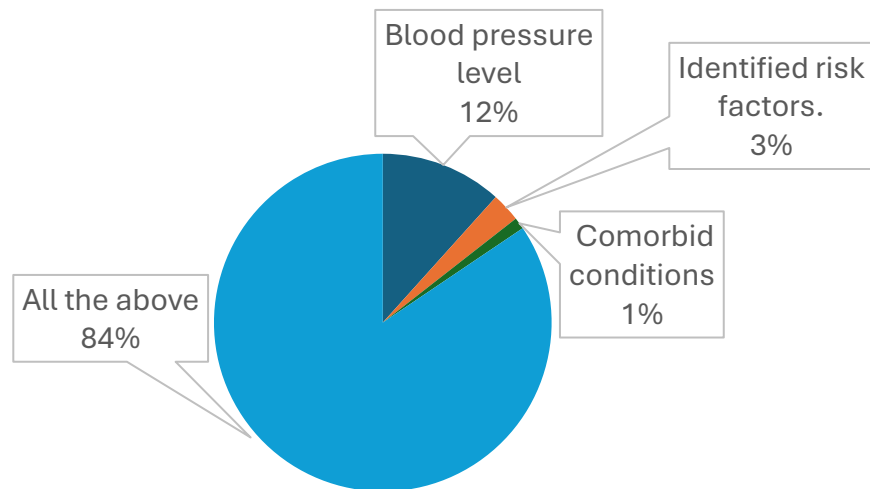


Graph 4.1: Total Number of HCP's Engaged:



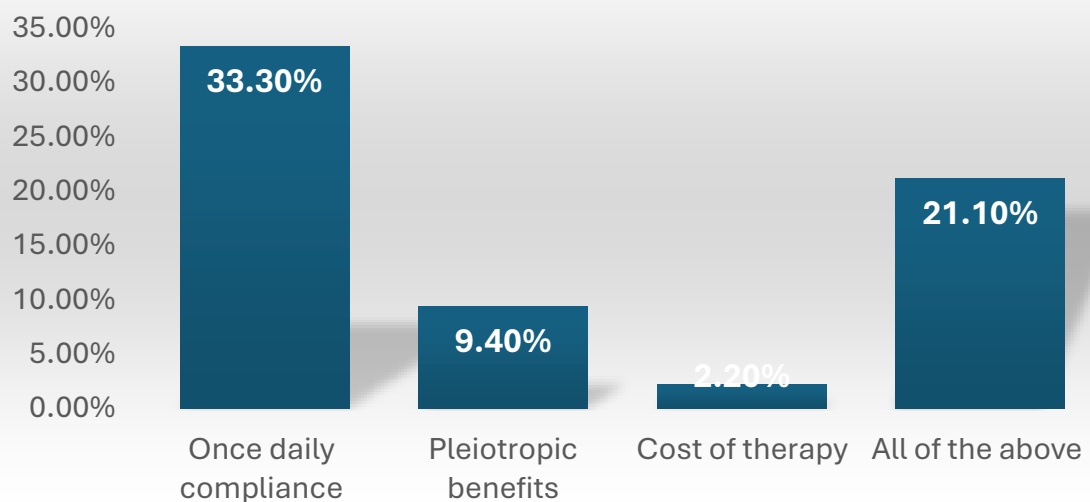
Graph 4.2: ARB & ARB+CCB is preferred as initial therapy in stage-I essential hypertension

What factors help you to decide between initiation of monotherapy & combination therapy?

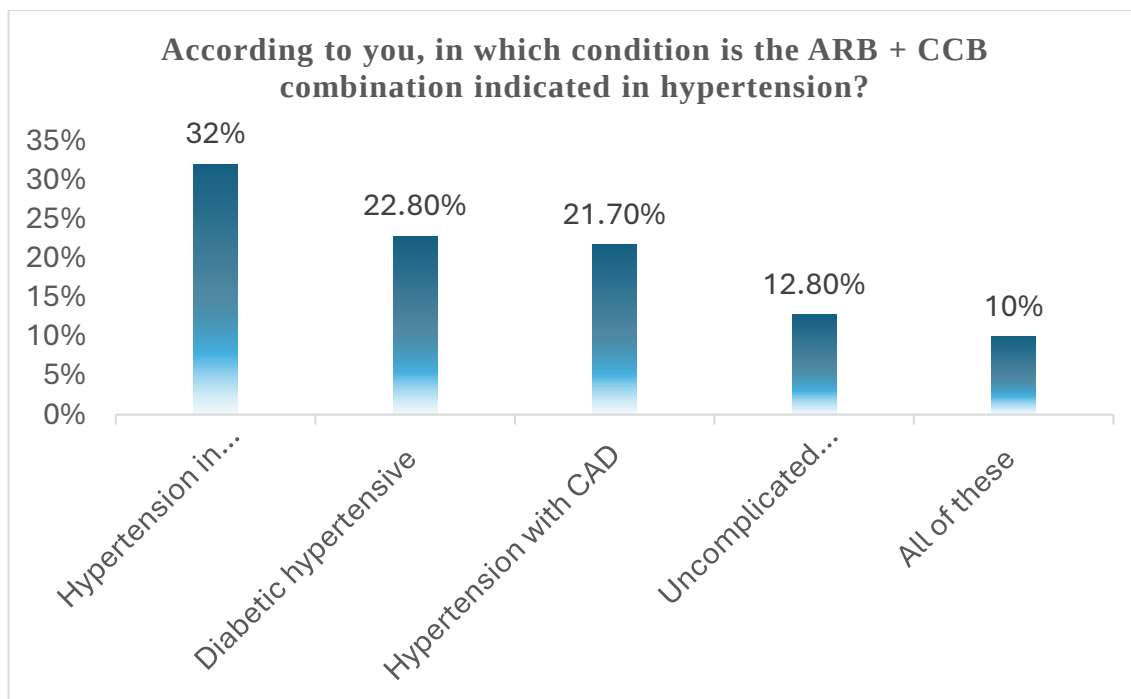


Graph 4.3 : All the factors are important to decide between monotherapy & combination therapy i.e., B.P level, Identified risk factors & Comorbid conditions

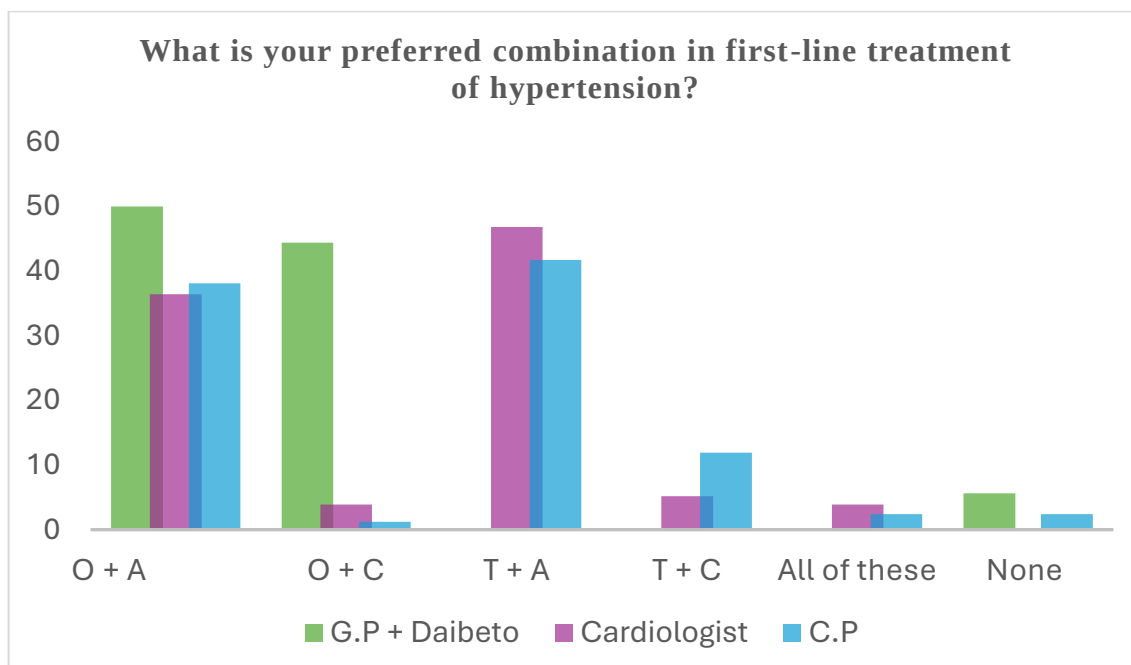
What is the reason for your first choice for preference of ARB & CCB in managing hypertension?



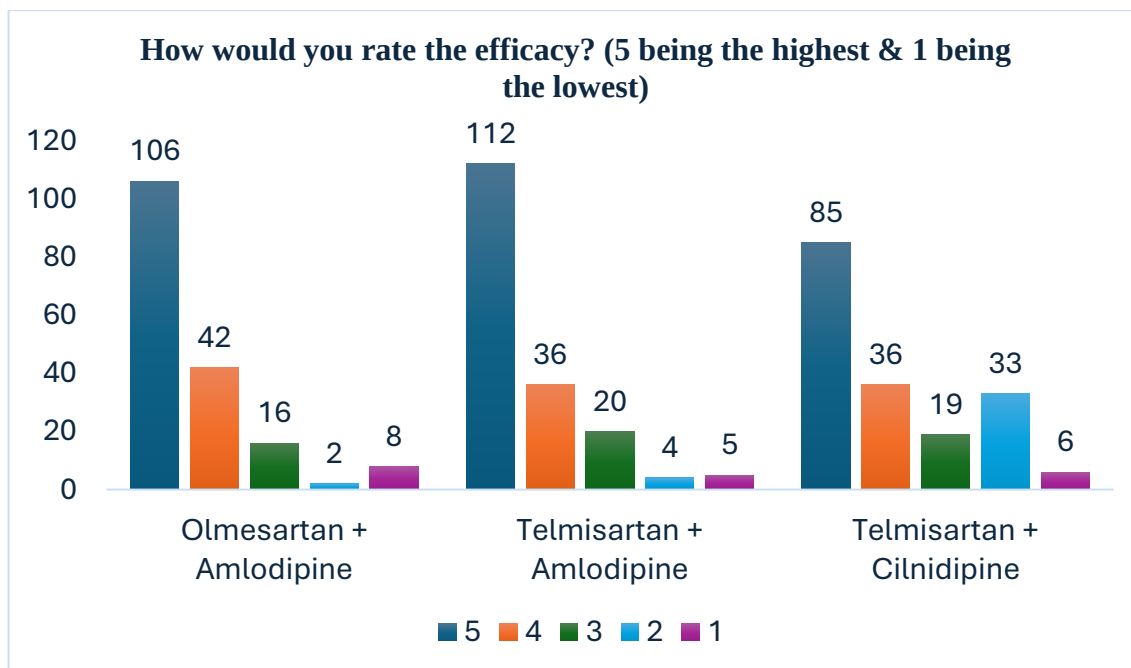
Graph 4.4 : Once daily compliance is preference of most of the physicians in ARB+CCB therapy



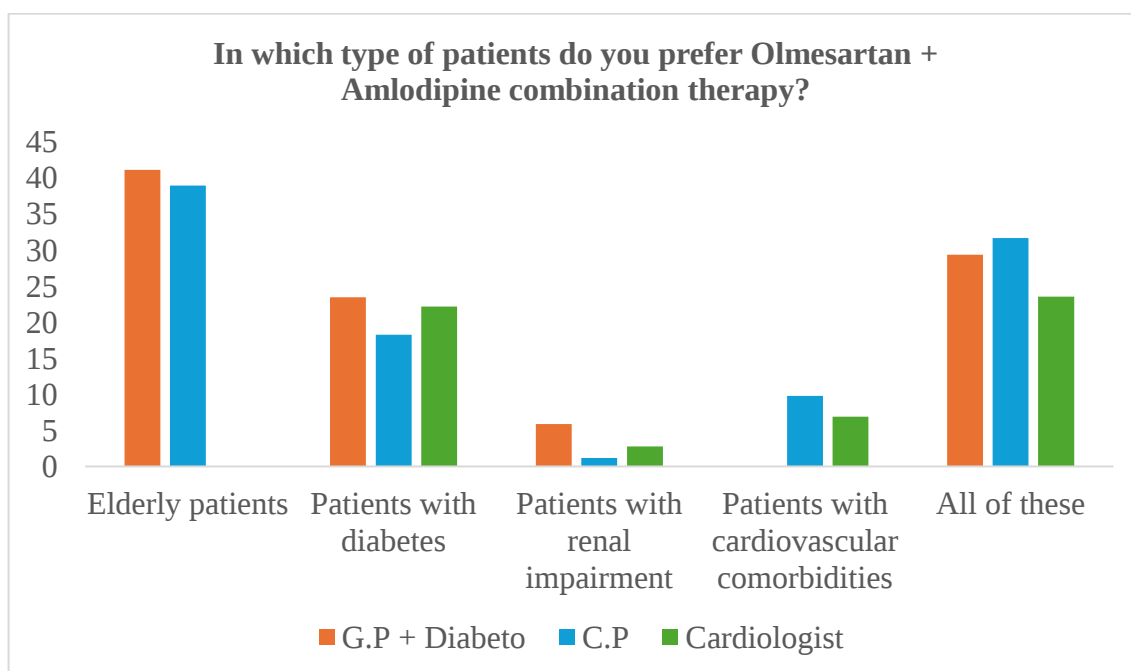
Graph 4.5 : Hypertension in Nephropathy is the condition were most of the HCPs preferred ARB+CCB



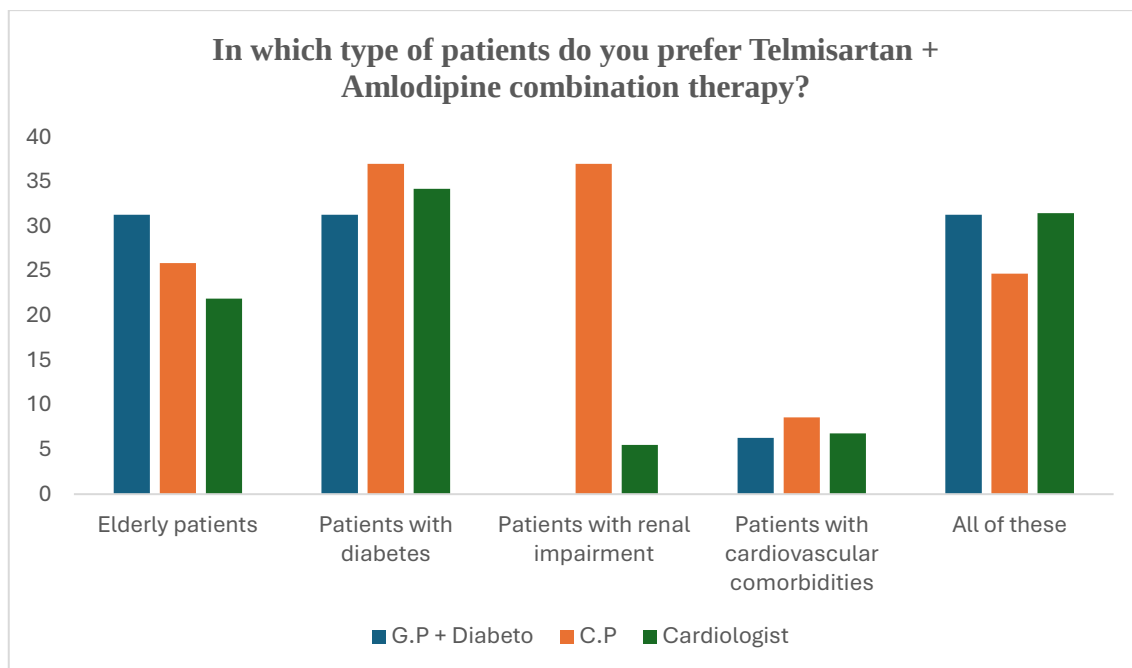
Graph 4.6 : Most of the G.Ps prescribe O + A but Cardiologist prescribes T+A in first line treatment



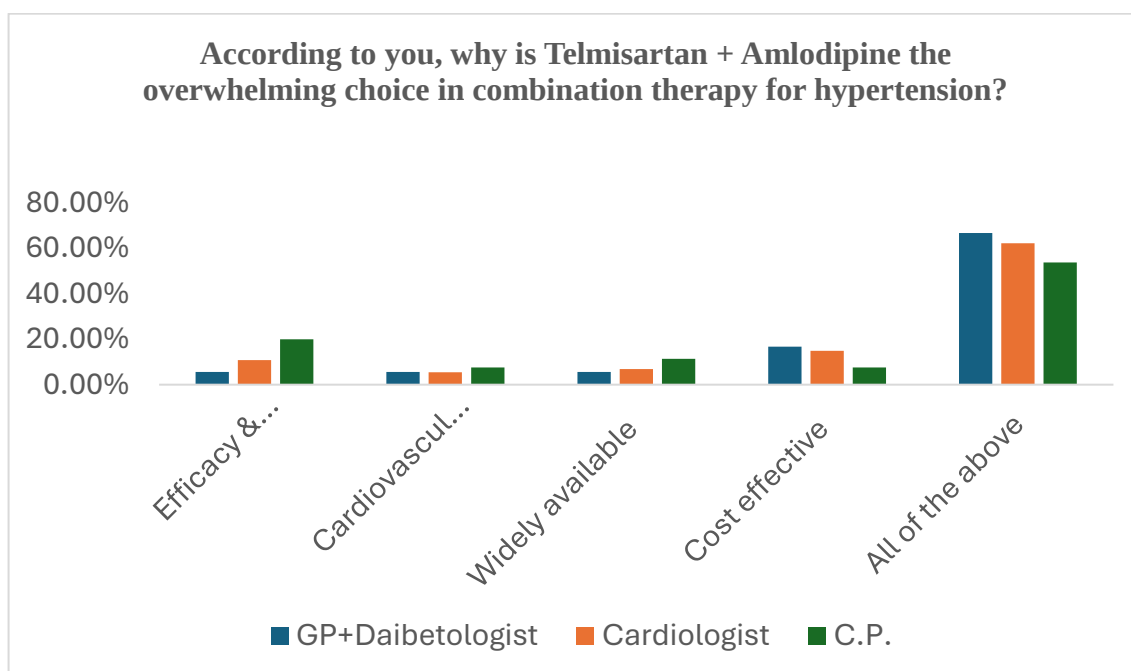
Graph 4.7 : Most of the HCPs were agreed that the molecules are highly effective



Graph 4.8 : Olmesartan + Amlodipine is preferred in elderly patients along with diabetes patients



Graph 4.9 : Olmesartan + Amlodipine is preferred in elderly patients along with diabetes patients & also patient with renal



Graph 4.10 : Most of the HCPs prescribes Telmisartan + Amlodipine combination, reason was found that it is effective and safest, it provides CV protective effect, widely available and its cost is less as compared to other therapy

CHAPTER 5

RECOMMENDATIONS

1. Highlight the unique benefits and advantages offered by Olmesartan in comparison to Telmisartan. Provide detailed explanations and evidence supporting Olmesartan's superiority in efficacy and other relevant factors. This approach aims to differentiate Olmesartan and position it as the preferred choice among healthcare professionals when compared to Telmisartan.
2. Highlight the unique benefits and advantages offered by Amlodipine in comparison to other CCBs used in market
3. Increase the noise level of the combination therapy
4. Provide comprehensive education programs for healthcare professionals, focusing on the unique advantages of Olmesartan and Amlodipine in specific patient populations and clinical scenarios.
5. Engage key opinion leaders in the field of hypertension management to advocate for the increased use of combination drugs through speaking engagements, opinion pieces, and peer-to-peer interactions.
6. As majority of HCP's prescribe Olmesartan and Amlodipine in younger patients, patient education leaflets with QR code which will have a tracker of daily exercise and food intake also which will have an alarming system if any exercise is missed for younger patients for managing hypertension can be provided. (Patient centric approach) Punchline: **"Track to Keep Your BP on Track"**
7. OLMESAR: A RAY OF **H**- Higher BP reduction **O**- Optimum BP Control/ Organ Damage Protection **P**- Pleotropic Benefits **E**- Extended Morning BP control FOR THE HYPERTENSIVES
8. A Campaign Targeted towards doctors for treatment of elderly with Olmesartan and Amlodipine can be designed for focus on use of Olmesartan and Amlodipine for the elderly patients.

CHAPTER 6

CONCLUSION

The combination therapy of Olmesartan and Amlodipine emerges as a superior choice for hypertension management due to its enhanced efficacy, faster onset of action, and greater potency compared to other options. This combination therapy not only achieves better blood pressure control but also demonstrates significant benefits in terms of reducing cardiovascular risks and improving overall patient compliance and quality of life.

Healthcare professionals have shown a strong preference for this combination, particularly in younger and more active patients, underscoring its potential as a cornerstone treatment in a diverse patient population. The comprehensive benefits of Olmesartan and Amlodipine combination therapy make it a compelling option for both initial and ongoing hypertension management.

Promoting targeted educational initiatives and engaging key opinion leaders are essential steps to increasing the utilization of this combination therapy. These efforts should focus on disseminating knowledge about its unique advantages and encouraging its adoption in clinical practice. Additionally, patient-centric initiatives that emphasize the convenience and effectiveness of the combination therapy can further enhance adherence and treatment outcomes.

The robust data supporting the Olmesartan and Amlodipine combination therapy heralds a new era of optimized care and improved patient well-being. By integrating this combination therapy into standard hypertension treatment protocols, healthcare systems can achieve superior patient outcomes, mitigate cardiovascular risks, and foster a paradigm shift towards more effective and comprehensive hypertension management strategies. This commitment to leveraging the full potential of Olmesartan and Amlodipine will ultimately lead to better health and enhanced quality of life for patients suffering from hypertension.

CHAPTER 7

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ANNEXURES

Survey Questions

Name of the Doctor: -	
Qualification: -	State: - Rajasthan
Speciality: -	Region: -
Date: -	Contact No.: -

1. Practice setting.

- ☐ Private practice ☐ Academic institution ☐ Corporate hospital

2. What is the first-line antihypertensive treatment for stage-I essential hypertension?

- ☐ Angiotensin II receptor blockers (ARBs)
- ☐ Calcium channel blockers (CCBs)
- ☐ ARB + CCB
- ☐ ARB + Diuretics
- ☐ CCB + Diuretics

3. What factors help you to decide between initiation of monotherapy & combination therapy?

- ☐ Blood pressure level
- ☐ Identified risk factors.
- ☐ Comorbid conditions
- ☐ All the above

4. What is the reason for your first choice for preference of ARB & CCB in managing hypertension?

- ☐ Efficacy
- ☐ Once daily compliance
- ☐ Pleiotropic benefits
- ☐ Cost of therapy

5. According to you, in which condition is the ARB + CCB combination indicated in hypertension?

- ☐ Hypertension in Nephropathy
- ☐ Diabetic hypertensive
- ☐ Hypertension with CAD
- ☐ Uncomplicated essential hypertension as first line therapy

6. What is your preferred combination in first-line treatment of hypertension?

- ☐ Olmesartan + Amlodipine
- ☐ Olmesartan + Cilnidipine

- ☐ Telmisartan + Amlodipine
- ☐ Telmisartan + Cilnidipine

7. How would you rate the efficacy? (5 being the highest & 1 being the lowest)

Olmesartan + Amlodipine	1	2	3	4	5
Telmisartan + Amlodipine	1	2	3	4	5
Telmisartan + Cilnidipine	1	2	3	4	5

8. In which type of patients do you prefer below combination therapy?

Patient type preference	Olmesartan + Amlodipine	Telmisartan + Amlodipine
Elderly patients		
Patients with diabetes		
Patients with renal impairment		
Patients with cardiovascular comorbidities		

9. According to you, why is Telmisartan + Amlodipine the overwhelming choice in combination therapy for hypertension?

- ☐ Efficacy & safety profile
- ☐ Cardiovascular protective effects
- ☐ Widely available
- ☐ Cost-effective
- ☐ Any other (please specify) _____

