

Survey Report

Survey on Perception Mapping of Physicians to Understand the Impact of Statin Treatment Cost on Patient Adherence

Version No.: 1.1

The study was conducted according to the approved protocol and in compliance with the protocol, Good Clinical Practice (GCP), and other applicable local regulatory requirements.

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1 INTRODUCTION

Cardiovascular disease (CVD) remains a leading cause of morbidity and mortality worldwide, with dyslipidemia being a major risk factor [1]. Statins, or 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitors, are the cornerstone of lipid-lowering therapy and have demonstrated significant efficacy in reducing cardiovascular events and mortality [2].

The effectiveness of statins in preventing cardiovascular diseases (CVDs) is well-established, with numerous studies affirming their clinical benefits [3]. Currently, over a billion individuals around the world use statins, which are widely regarded as the standard treatment for lipid management. Consequently, new lipid-lowering agents are often researched as complementary therapies to statins rather than as independent options [4,5]. Despite the robust evidence supporting their efficacy and the fact that most patients tolerate them well, many individuals prescribed statins struggle to adhere to the recommended dosing regimens [6, 7]. Research indicates that non-adherence and discontinuation of statin therapy can lead to poorer clinical outcomes and impose significant economic burdens on healthcare systems [7, 8].

The perception of physicians regarding the impact of statin costs on patient adherence is crucial, as healthcare providers play a pivotal role in prescribing decisions and patient education. A study by Virani et al. demonstrated that physician awareness of medication costs and subsequent prescription of lower-cost alternatives could significantly improve patient adherence to statin therapy [9].

Furthermore, the choice of specific statin medications may also influence adherence patterns. While all statins share a common mechanism of action, they differ in their efficacy, safety profiles, and costs. A comparative study by Rosenson et al. found variations in adherence rates among different statins, with factors such as dosing frequency and cost playing significant roles [10].

Given the critical importance of long-term adherence to statin therapy in reducing cardiovascular risk, there is a pressing need to better understand the interplay between treatment costs, physician perceptions, and patient behavior. This survey study aims to map physician perceptions regarding the impact of statin treatment cost on patient adherence, exploring factors such as adherence rates, reasons for non-adherence, the influence of cost on compliance, and physician prescribing preferences.

2 RATIONALE OF THE STUDY

The management of cardiovascular disease relied heavily on the effective use of statin therapy, which had been proven to significantly reduce morbidity and mortality related to dyslipidemia. However, the full benefits of statin treatment could only be realized when patients adhered to their prescribed regimens. Despite the known efficacy of statins, patient adherence remained a significant challenge, with various factors influencing medication-taking behavior. Among these factors, the cost of statin therapy emerged as a critical determinant of adherence. As healthcare systems worldwide grappled with rising pharmaceutical costs and increasing pressure to improve patient outcomes, understanding the relationship between statin treatment cost and patient adherence became paramount.

While previous studies had explored patient-reported barriers to statin adherence, there was a notable gap in understanding physicians' perceptions regarding this issue. Physicians played a crucial role in prescribing decisions, patient education, and ongoing management of statin therapy. Their insights into the impact of medication costs on patient behavior were invaluable, as they directly observed and managed the consequences of non-adherence in clinical practice. Furthermore, physicians' awareness of cost-related adherence issues influenced their prescribing patterns and patient communication strategies. Therefore, mapping physicians' perceptions of how statin costs affected patient adherence provided critical insights that bridged the gap between clinical guidelines, real-world prescribing practices, and patient behavior.

3 OBJECTIVES

The primary objective of this study was to assess physicians' perceptions regarding the impact of statin treatment cost on patient adherence.

4 METHODS

It was a cross-sectional, questionnaire-based survey involving a diverse sample of physicians, including cardiologists, primary care physicians, and endocrinologists, across India. The study focused on collecting data about patient adherence to statins, reasons for non-adherence (such as concerns about side effects and cost), and the factors influencing statin therapy choices, including cost, efficacy, and safety. The survey was administered electronically, and the data were securely stored and analyzed using descriptive and inferential statistics. Ethical approval was obtained, and participants were informed about the study and ensured of their right to withdraw at any time.

The study followed a clear flow, with physicians invited through professional networks, providing informed consent, and completing a 10-question survey. The target sample size was 100 physicians, aiming for a representative sample of clinical practices. Inclusion criteria required physicians to regularly prescribe statins and be familiar with adherence issues. Exclusion criteria removed those with no relevant experience or unwillingness to participate. As the study was observational, randomization and blinding were not necessary. Ethical considerations were addressed in compliance with the Declaration of Helsinki, ensuring confidentiality and participant rights.

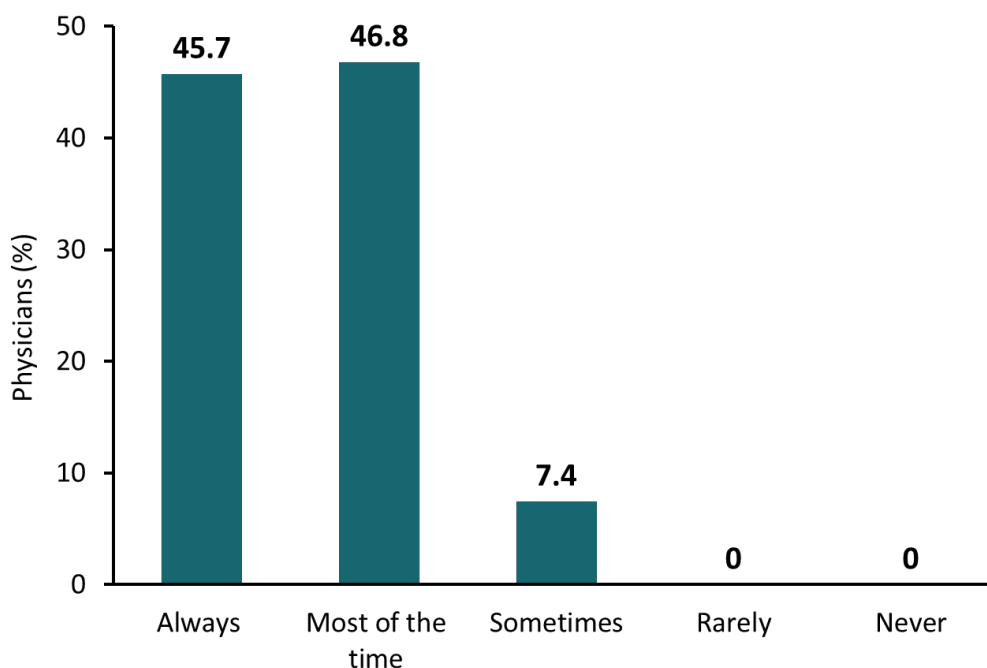
The study design was well-suited to capture current perceptions and practices regarding statin therapy and its impact on patient adherence, providing valuable insights for improving clinical outcomes. The findings could inform future research and guidelines, contributing to better patient management strategies. Data were analyzed using descriptive and inferential statistics. Descriptive statistics summarized demographic information and response frequencies. If suitable, inferential statistics, such as chi-square tests or logistic regression, were used to explore associations between physician characteristics and their perceptions and prescribing behaviors.

5 RESULTS

A total of 94 HCPs participated in the survey. Below is the summary of the responses.

[1] As per your opinion, how often do patients take the statin medication as prescribed?

- A. Always
- B. Most of the time
- C. Sometimes
- D. Rarely
- E. Never

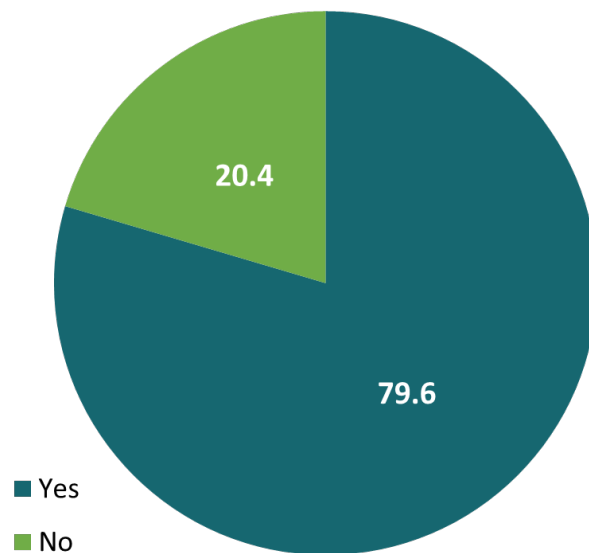


- Approximately 45.7% of patients always take their statin medication exactly as prescribed.
- About 46.8% of patients adhere to their statin medication regimen most of the time.
- Only 7.4% of patients take their statin medication only sometimes as prescribed.
- None of patients rarely take their statin medication.

[2] As per your opinion, is their issue of patient non-adherence to statin therapy?

A. Yes

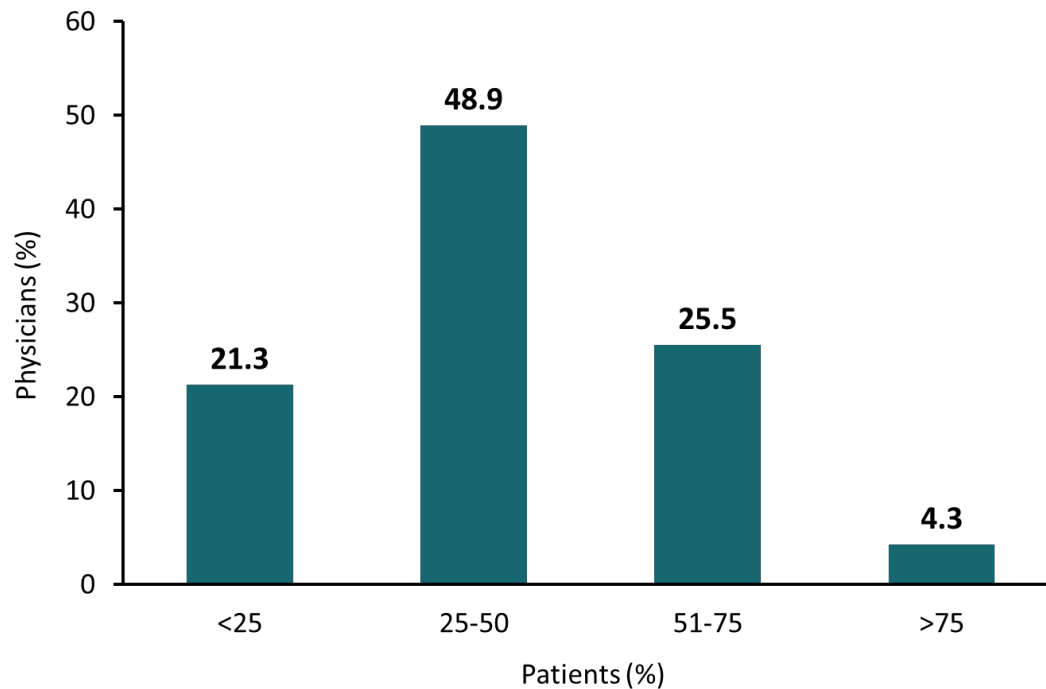
B. No



- The majority of physicians (79.6%) reported issues with patient non-adherence to statin therapy.
- About 20.4% of physicians observed no issues with patient non-adherence to statin therapy.

[3] What percentage of patients not adherent to the statin therapy?

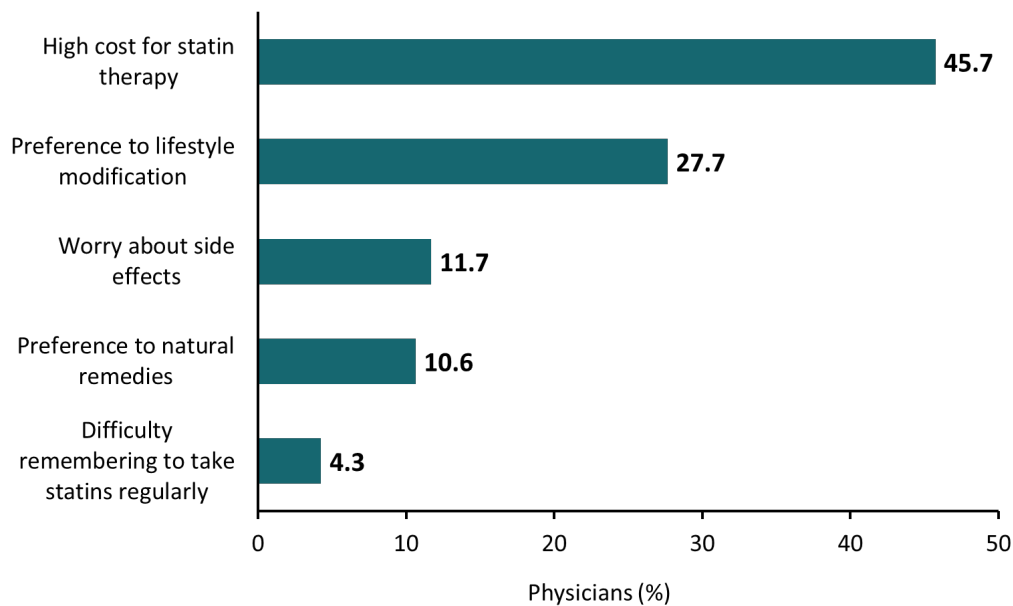
- A. <25%
- B. 25-50%
- C. 51-75%
- D. >75%



- About 48.9% of physicians reported that 25-50% of their patients were not adherent to statin therapy.
- Approximately 25.5% of physicians reported that 51-75% of their patients were not adherent to statin therapy.
- About 21.3% of physicians reported that less than 25% of their patients were not adherent to statin therapy.
- Only 4.3% of physicians reported that more than 75% of their patients in clinical practice were not adherent to statin therapy.

[4] As per your opinion, what is/are the reason(s) for not adhering to statin therapy? (can mark more than 1 option, if required)

- A. Worry about side effects
- B. Preference to natural remedies
- C. Preference to lifestyle modification
- D. High cost for statin therapy
- E. Difficulty remembering to take statins regularly

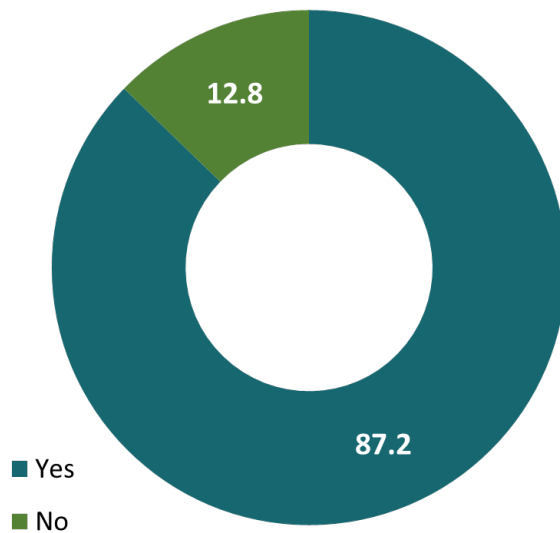


- According to 45.7% of physicians, the high cost of statin therapy was the reason for patients not adhering to statin therapy.
- About 27.7% of physicians reported that a preference for lifestyle modification was the reason for not adhering to statin therapy.
- Approximately 11.7% of physicians reported that worry about side effects was the reason for patients not adhering to statin therapy.
- A smaller group of physicians (10.6%) reported that a preference for natural remedies was the reason for not adhering to statin therapy.
- A very small percentage of physicians (4.3%) believed that difficulty remembering to take statins regularly was the reason for non-adherence.

[5] As per your opinion, does the cost of statin therapy impact the patient adherence for the prescribed statin?

A. Yes

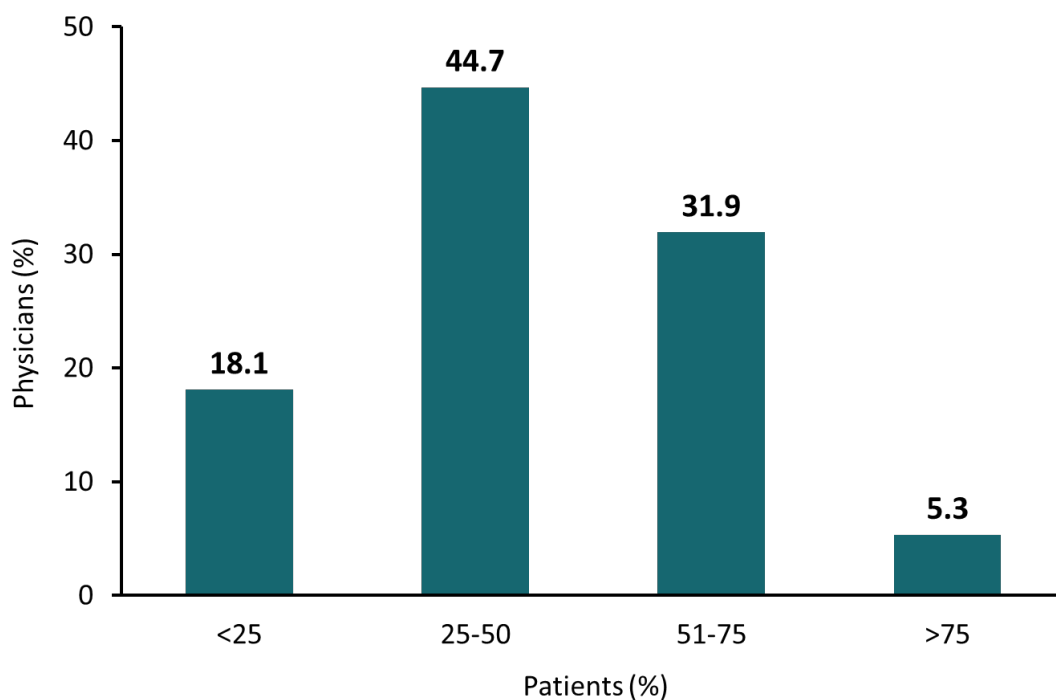
B. No



- The majority of physicians (87.2%) agreed that the cost of statin therapy impacts patient adherence to the prescribed statin.
- About 12.8% of physicians believed that the cost of statin therapy does not impact patient adherence to the prescribed statin.

[6] What percentage of patients remain non-compliant to statin therapy due to higher cost?

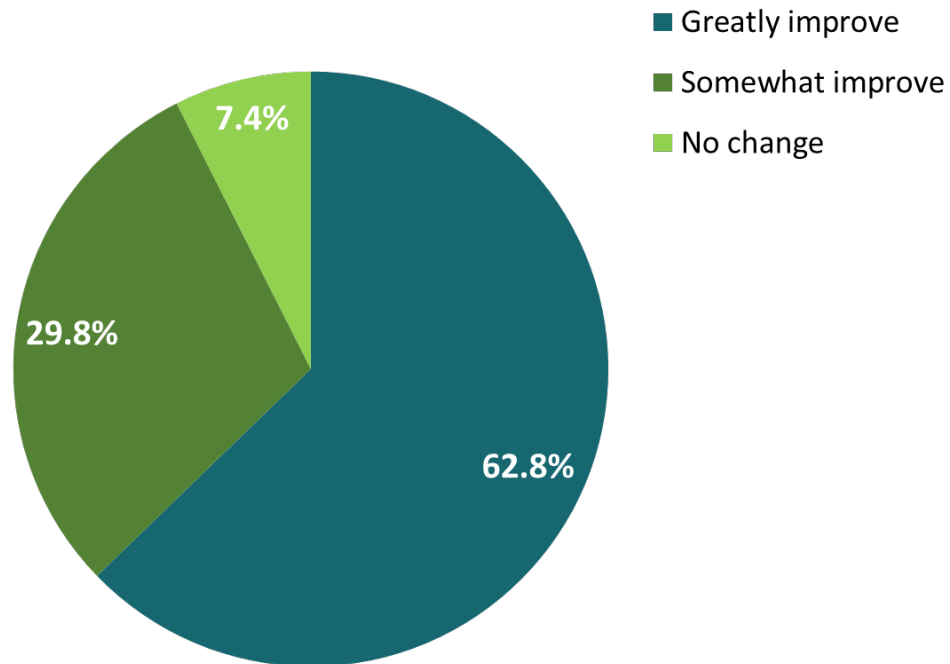
- A. <25%
- B. 25-50%
- C. 51-75%
- D. >75%



- About 44.7% of physicians reported that 25-50% of their patients were remain non-compliant to statin therapy due to higher cost.
- Approximately 31.9% of physicians reported that 51-75% of their patients were remain non-compliant to statin therapy due to higher cost.
- About 18.1% of physicians reported that less than 25% of their patients were remain non-compliant to statin therapy due to higher cost.
- Only 5.3% of physicians reported that more than 75% of their patients in clinical practice were remain non-compliant to statin therapy due to higher cost.

[7] As per your opinion, if the cost of statin medication is reduced, how would it affect patient adherence?

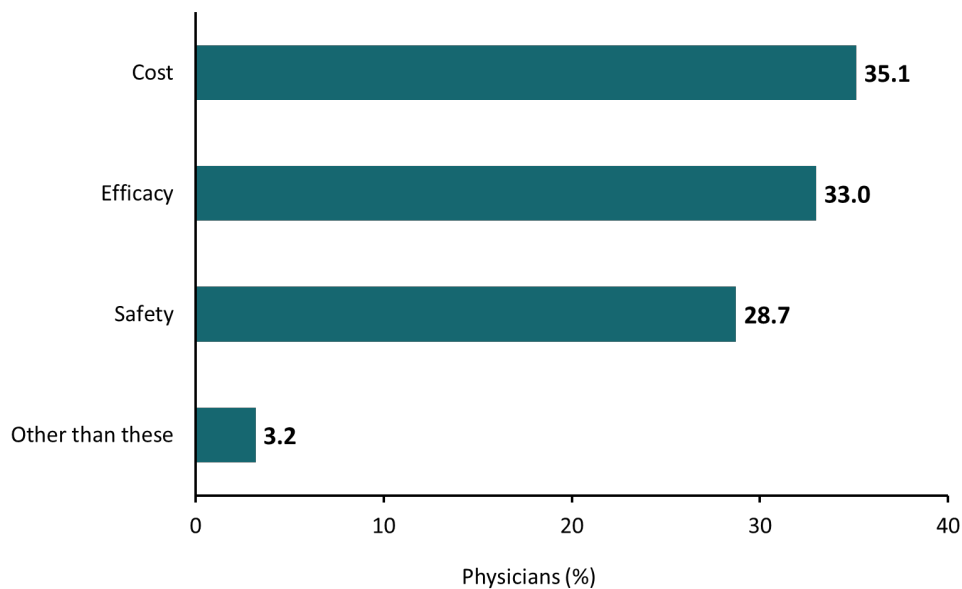
- A. Greatly improve
- B. Somewhat improve
- C. No change



- The majority of physicians (62.8%) believed that reducing the cost of statin medication would have greatly improved patient adherence.
- A significant portion of physicians (29.8%) observed that reducing the cost of statin medication would have somewhat improved patient adherence.
- Only 7.4% of physicians believed that reducing the cost of statin medication would not have changed patient adherence.

[8] Which of the factor given preference from your end while choosing the statin therapy?

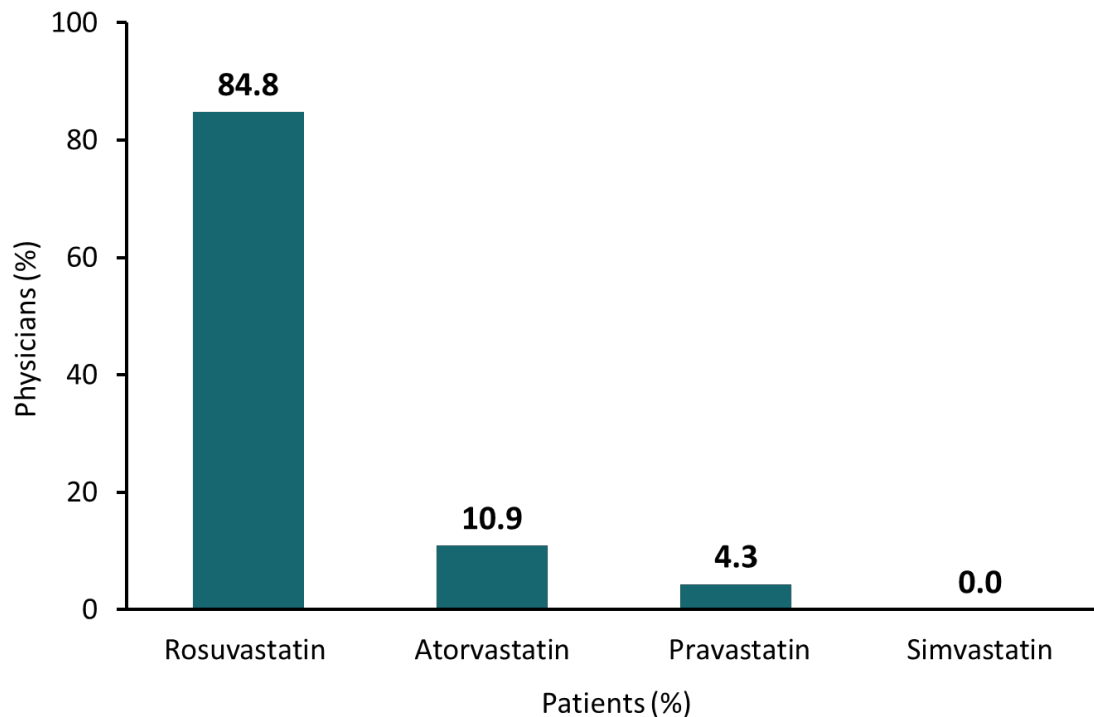
- A. Cost
- B. Efficacy
- C. Safety
- D. Other than these



- About 35.1% of physicians gave preference to the cost when choosing statin therapy.
- Approximately 33.0% of physicians prioritized the efficacy of statin therapy.
- A significant portion of physicians (28.7%) considered the safety of statin therapy as the most important factor.
- Only 3.2% of physicians considered factors other than cost, efficacy, or safety when choosing statin therapy.

[9] As per your opinion, which is the most cost-effective statin?

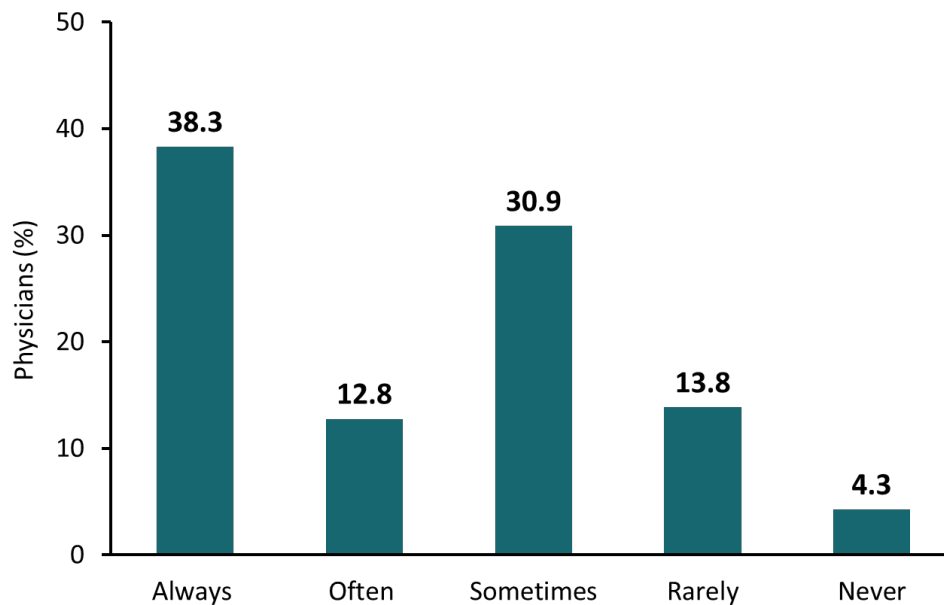
- A. Rosuvastatin
- B. Atorvastatin
- C. Pravastatin
- D. Simvastatin



- The majority of physicians (84.8%) reported that Rosuvastatin was the most effective statin.
- A smaller group of physicians (10.9%) believed that Atorvastatin was the most effective statin.
- Another 4.3% of physicians reported that Pravastatin was the most effective statin.
- No physicians preferred Simvastatin as the most effective statin.

[10] How often do you discuss the cost of statins with your patients?

- A. Always
- B. Often
- C. Sometimes
- D. Rarely
- E. Never



- Approximately 38.3% of physicians always discuss the cost of statins with their patients.
- About 30.9% of physicians sometimes discuss the cost of statins with their patients.
- A smaller group of physicians (13.8%) rarely discuss the cost of statins with their patients.
- Another 12.8% of physicians often discuss the cost of statins with their patients.
- Only 4.3% of physicians never discuss the cost of statins with their patients.

6 SUMMARY

The data reveals a significant discrepancy in statin medication adherence between patients and physicians. Approximately 45.7% of patients consistently take their statin as prescribed, while 46.8% adhere to the regimen most of the time. A smaller portion (7.4%) takes the medication only sometimes, and none of the patients rarely follow the prescribed regimen. In contrast, 79.6% of physicians report encountering issues with patient non-adherence, with 48.9% stating that 25-50% of their patients fail to comply. The reasons for non-adherence are varied, with high medication costs (45.7%) being the most commonly cited factor, followed by preferences for lifestyle changes (27.7%) and concerns about side effects (11.7%). A notable percentage of physicians (62.8%) believe reducing the cost of statins would significantly improve adherence. The majority (87.2%) agree that the cost impacts patient compliance. When choosing statin therapy, most physicians prioritize cost (35.1%), efficacy (33%), and safety (28.7%). Rosuvastatin is regarded as the most effective by 84.8% of physicians. Furthermore, many physicians (38.3%) always discuss the cost of statins with their patients, highlighting the importance of cost in treatment decisions.

7 DISCUSSION

The results of the survey reveal several key insights into the adherence to statin therapy and the factors influencing patient behavior, as well as physician perspectives. Despite statins being widely prescribed, adherence remains a challenge. Only 45.7% of patients consistently follow their prescribed statin regimen, with a similar percentage (46.8%) adhering most of the time. A small percentage (7.4%) take the medication only intermittently, and none of the patients reported rarely taking their statins. This indicates that while a significant proportion of patients adhere to the regimen, there is still a notable portion that struggles with consistency. Physicians report a higher level of concern, with nearly 80% acknowledging issues with patient non-adherence. For nearly half of the physicians, between 25-50% of their patients are non-compliant with their statin therapy. Some physicians observed even higher levels of non-adherence, with 25.5% noting that 51-75% of their patients are not adherent. One of the most prominent barriers identified by physicians is the high cost of statin therapy, which 45.7% of physicians cited as a primary factor for non-adherence. This concern is corroborated by 87.2% of physicians, who agree that the cost significantly impacts patient adherence. Reducing the cost of statins was seen as a potential solution to improve adherence, with 62.8% of physicians believing it would have a substantial positive impact. Lifestyle preferences and concerns about side effects were also cited as reasons for non-adherence, with 27.7% of physicians noting that patients prefer lifestyle changes over medication, and 11.7% expressing concerns about side effects. Additionally, 10.6% of physicians pointed to a preference for natural remedies as another barrier. Despite these factors, only a small proportion of physicians (4.3%) identified forgetfulness as a significant reason for non-adherence.

When considering the factors that guide statin therapy selection, cost, efficacy, and safety emerged as the top priorities. A significant portion of physicians (35.1%) prioritize cost when choosing statin therapy, while 33% prioritize efficacy, and 28.7% focus on safety. Despite this, the majority of physicians (84.8%) identified Rosuvastatin as the most effective statin, with a smaller proportion favoring Atorvastatin and even fewer choosing Pravastatin. The cost of statins between physicians and patients appear to be less frequent than ideal, with 38.3% of physicians always addressing the cost, while 30.9% sometimes discuss it. This

suggests a need for greater attention to the cost factor in patient-provider discussions to address adherence issues more effectively. In conclusion, while adherence to statin therapy remains a concern, addressing the cost of medications and increasing discussions about this barrier may help improve patient outcomes. Physicians recognize the significance of cost in adherence and express a desire for more affordable options, highlighting a potential area for improvement in healthcare policies and treatment strategies.

8 CLINICAL RECOMMENDATIONS

Based on the results, several key factors influence statin adherence, including cost, patient preferences, and physician perceptions. The following clinical recommendations are suggested

Given that 45.7% of physicians believe high cost is a major factor in non-adherence and 87.2% agree it impacts adherence, addressing the cost of statin therapy should be prioritized. Clinicians should discuss generic alternatives or assistance programs to reduce financial barriers for patients. Additionally, reducing the cost of statins, as suggested by 62.8% of physicians, could significantly improve adherence.

Worry about side effects and preference for natural remedies were cited as reasons for non-adherence. Physicians should provide clear, evidence-based information about the benefits and safety profiles of statins, and address concerns about side effects. Emphasizing the importance of statin therapy in preventing cardiovascular events may help patients feel more confident in their treatment.

Since 27.7% of physicians noted patients prefer lifestyle changes over medication, clinicians should integrate discussions about the role of statins in conjunction with lifestyle modifications, rather than as a substitute. Encouraging holistic approaches may increase patient buy-in. With 35.1% of physicians prioritizing cost and 33.0% emphasizing efficacy, a balanced approach to prescribing statins is needed.

Physicians should consider the patient's financial situation while prescribing the most effective and safe medication for the individual.

With 38.3% of physicians always discussing cost, it is crucial that physicians routinely address the cost of statins with their patients to ensure they are not surprised by financial burdens. Open conversations can help in identifying affordable options and preventing treatment discontinuation due to financial concerns.

Given that only 4.3% of physicians never discuss statin costs, it is important to continue fostering open communication about both the medical and financial aspects of statin therapy. This can improve trust, adherence, and ultimately, patient outcomes. Regular follow-up visits should include adherence assessments to identify patients who are struggling with their regimen. Physicians should offer support, including reminder tools or counseling on adherence, especially since a significant portion of patients are not taking statins as prescribed.

9 CONSULTING OPINION

Based on the results, it's clear that statin adherence remains a significant challenge for both patients and healthcare providers. The findings highlight a concerning gap between physician perception and patient behavior regarding medication adherence. Although most patients take their statins as prescribed (approximately 45.7%), nearly half (46.8%) have only intermittent adherence. This inconsistency in patient behavior is matched by physicians' concerns, with 79.6% reporting issues with non-adherence. The reasons for non-adherence are varied but prominently include high medication costs, with 45.7% of physicians identifying cost as a major barrier. This is further supported by the fact that many physicians (62.8%) believe that reducing statin costs would significantly improve patient adherence. These findings suggest a need for strategies that target the affordability of statin therapies, such as price reductions or exploring generic alternatives.

Physicians' understanding of the barriers to adherence seems relatively accurate, with most aligning patient non-adherence to factors such as high cost, preference for lifestyle modifications, or concerns about side effects. However, while 87.2% of physicians acknowledge the impact of cost on adherence, only 35.1% prioritize cost when choosing a statin for their patients. This discrepancy suggests that while physicians recognize the issue, there may be a lack of a more patient-centered approach in decision-making, especially considering cost as a key factor when selecting statin therapies.

Interestingly, the results show that most physicians believe that Rosuvastatin is the most effective statin, yet cost concerns may make this choice inaccessible for some patients. This may create a tension between prescribing the most effective medication and ensuring patient adherence. Given that a substantial number of physicians (38.3%) discuss the cost of statins with their patients regularly, there is an opportunity to improve these conversations, especially in addressing the affordability issue. It's essential that healthcare providers incorporate cost considerations into treatment discussions more effectively and explore alternative treatment options, such as generic drugs or lower-cost alternatives, to ensure that patients can access the medications they need without compromising adherence.

10 MARKET OPPORTUNITIES

The data reveals a significant market opportunity in addressing the issue of statin non-adherence due to cost and patient preferences. With nearly 80% of physicians reporting issues with patient non-adherence to statin therapy, and 87.2% acknowledging that the cost of statin therapy impacts adherence, there is a clear demand for more affordable alternatives. Physicians overwhelmingly believe that reducing the cost of statins would greatly improve adherence, with 62.8% seeing this as a key factor. The high percentage of physicians (45.7%) citing cost as the primary reason for non-adherence further highlights this gap in the market. A strong opportunity exists for pharmaceutical companies to invest in developing cost-effective statin medications or alternative therapies that can help improve patient compliance while also addressing the safety, efficacy, and cost concerns of physicians. Additionally, targeted educational campaigns or tools for healthcare providers to better communicate the cost and efficacy of statins with patients could further enhance adherence rates and create value for both patients and healthcare providers. The strong preference for certain statins, such as Rosuvastatin (reported as the most effective by 84.8% of physicians), also suggests that there is a need for competitive pricing and broader access to the most trusted therapies in the market. By addressing both the financial and communication barriers, the pharmaceutical industry can position itself to improve outcomes and drive long-term market growth.

11 MARKET POSITIONING

The data highlights significant concerns and patterns regarding statin medication adherence and physician perceptions that can inform market positioning strategies for statin therapy providers. Despite the widespread prescription of statins, patient adherence remains a challenge, with only 45.7% of patients taking their medication exactly as prescribed, and a substantial number (46.8%) adhering most of the time. Non-adherence, driven by various factors, is reported by 79.6% of physicians, with the primary reasons being high medication costs, preference for lifestyle modifications, concerns over side effects, and a preference for natural remedies. The cost of statins is particularly impactful, with 45.7% of physicians identifying it as a primary barrier to adherence. Furthermore, 62.8% of physicians believe reducing statin costs would significantly improve adherence, underscoring the importance of affordability in enhancing patient outcomes. Physicians, while prioritizing efficacy and safety, also show a clear preference for statins like Rosuvastatin and Atorvastatin for their perceived effectiveness. This data suggests a strong market opportunity for statin brands that can offer more affordable options without compromising on efficacy or safety. Additionally, educating both patients and physicians about cost-effective alternatives and fostering open communication regarding medication costs could enhance brand loyalty and adherence. A positioning strategy focusing on affordability, effectiveness, and addressing physicians' and patients' concerns about cost and side effects could resonate strongly in the current healthcare landscape.

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