Perspectives on Imeglimin: Usage Patterns and Clinical Views in Type 2 Diabetes Treatment

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INTRODUCTION

Type 2 Diabetes Mellitus (T2DM) continues to be one of the most significant and growing global health challenges. It affects millions of individuals worldwide and is projected to increase in prevalence from 463 million adults in 2019 to nearly 700 million by 2045 [1]. This chronic condition is primarily characterized by insulin resistance, beta-cell dysfunction, and elevated hepatic glucose production, all of which contribute to sustained hyperglycemia. Uncontrolled T2DM significantly increases the risk of complications, including cardiovascular disease, nephropathy, retinopathy, and neuropathy, which collectively impose a substantial burden on healthcare systems globally [2].

The management of T2DM has evolved considerably over the years, with current strategies encompassing a combination of lifestyle interventions and pharmacological therapies. While lifestyle modifications remain a cornerstone of diabetes care, they are often insufficient for achieving optimal glycemic control in many patients. Pharmacological treatments have expanded beyond traditional agents like sulfonylureas and metformin to include newer classes such as sodium-glucose cotransporter-2 (SGLT2) inhibitors, dipeptidyl peptidase-4 (DPP-4) inhibitors, and glucagon-like peptide-1 (GLP-1) receptor agonists. Despite these advancements, there remains a need for therapies that target the multiple pathophysiological mechanisms underlying T2DM [3].

Imeglimin is a novel oral antidiabetic agent that represents a new class of tetrahydrotriazine derivatives. Its distinct mechanism of action sets it apart from other antidiabetic agents. By targeting mitochondrial function, Imeglimin simultaneously improves insulin sensitivity in peripheral tissues, enhances insulin secretion in pancreatic beta cells, and reduces hepatic glucose production [4]. This multifaceted approach makes Imeglimin particularly suitable for addressing the complex metabolic dysfunctions observed in T2DM.

Preclinical studies and clinical trials have provided robust evidence supporting Imeglimin's efficacy and safety. It has demonstrated significant reductions in glycosylated hemoglobin (HbA1c) levels, improved beta-cell function, and favorable effects on lipid profiles. Furthermore, its unique mechanism has been associated with potential cardiovascular and renal protective benefits, which are critical considerations in the comprehensive management of T2DM [5]. Importantly, Imeglimin has been shown to work synergistically with other antidiabetic agents, including metformin and GLP-1 receptor agonists, further highlighting its versatility in clinical practice [6].

One of the most compelling attributes of Imeglimin is its dual-action profile that targets mitochondrial bioenergetics. Mitochondria play a crucial role in cellular metabolism, and their dysfunction is a key contributor to insulin resistance and beta-cell failure in T2DM. By restoring mitochondrial function, Imeglimin not only addresses the primary pathophysiological defects of T2DM but also mitigates oxidative stress and improves cellular energy metabolism [7]. This novel approach aligns with the growing emphasis on addressing the underlying mechanisms of chronic diseases rather than solely focusing on symptom control.

The safety profile of Imeglimin has been favorable in clinical studies. Unlike some traditional antidiabetic agents associated with weight gain or hypoglycemia, Imeglimin has shown minimal risks in these areas. Additionally, its renal safety profile makes it a promising option for patients with chronic kidney disease (CKD), a common comorbidity in individuals with T2DM [8].

Despite these advantages, the adoption of Imeglimin in real-world clinical practice has been slower than anticipated. Several factors may contribute to this, including limited awareness among healthcare providers, questions about long-term safety, and a lack of familiarity with its mechanism of action. Additionally, the availability of numerous other antidiabetic agents may lead to hesitancy in

incorporating new therapies without comprehensive understanding and experience [9]. Addressing these barriers is crucial for optimizing the integration of Imeglimin into routine diabetes care.

Exploring the perspectives and practices of healthcare providers is essential to understanding the factors influencing the adoption of Imeglimin. Such insights can inform targeted educational initiatives and provide evidence-based recommendations to support its broader use. By bridging the gap between clinical research and real-world application, this study aims to enhance the utility of Imeglimin in achieving better outcomes for patients with T2DM [10].

RATIONALE OF THE STUDY

The rationale for this study stems from the emerging role of Imeglimin as a novel therapeutic option in T2DM management. While clinical evidence supports its efficacy in improving glycemic control and addressing multiple pathophysiological pathways, real-world data on its utilization remain sparse. By exploring the perspectives of healthcare providers, this study seeks to identify key drivers, barriers, and clinical considerations influencing its use. The findings will inform targeted educational efforts and strategies to optimize the integration of Imeglimin into T2DM treatment protocols, ultimately enhancing patient outcomes.

STUDY OBJECTIVE

The primary objective of this study is to explore healthcare provider practices and opinions regarding the use of Imeglimin in managing Type 2 Diabetes Mellitus. Specific objectives include:

1. Assess the frequency and factors influencing Imeglimin prescriptions among healthcare providers.
2. Evaluate healthcare providers' awareness and knowledge of Imeglimin's mechanisms of action, benefits, and clinical evidence.
3. Identify concerns and challenges faced by healthcare providers when prescribing Imeglimin, including potential adverse effects and patient-specific considerations.
4. Determine the level of satisfaction with current clinical evidence supporting Imeglimin therapy compared to other antidiabetic medications.
5. Gauge healthcare providers' willingness to incorporate Imeglimin into their clinical practices and recommend it to colleagues.

METHODS

This study utilized a cross-sectional survey to capture the practices and opinions of healthcare providers regarding the use of Imeglimin in Type 2 Diabetes Mellitus management. A structured questionnaire was designed to explore key themes such as prescription patterns, awareness of Imeglimin's benefits, and concerns regarding its use.

Study Design: The survey consisted of 20 questions, capturing both quantitative and qualitative data about healthcare providers' experiences with and perceptions of Imeglimin. Participants included endocrinologists, diabetologists, and general practitioners actively involved in T2DM management.

Participant Inclusion Criteria:

- Healthcare providers with at least 2 years of experience in managing Type 2 Diabetes Mellitus.
- Physicians who prescribe oral hypoglycemic agents, including newer agents such as Imeglimin, in their clinical practice.

Data Collection: The survey was distributed to healthcare providers through both electronic and print formats across multiple healthcare institutions. Participants were asked to respond to questions regarding their prescribing habits, knowledge of Imeglimin's mechanisms of action, perceived advantages and limitations, and satisfaction with existing clinical evidence. Responses were collected over one month.

Data Analysis: Descriptive statistics were used to summarize responses to each question, including the frequency of Imeglimin prescription, awareness of its pharmacological benefits, and primary concerns regarding its use. Results were presented as percentages to illustrate the distribution of opinions. Additionally, correlations between provider characteristics and prescribing behaviors were analyzed to identify trends and patterns.

RESULTS

A total of 122 HCPs participated in the survey. Below is the summary of the responses.

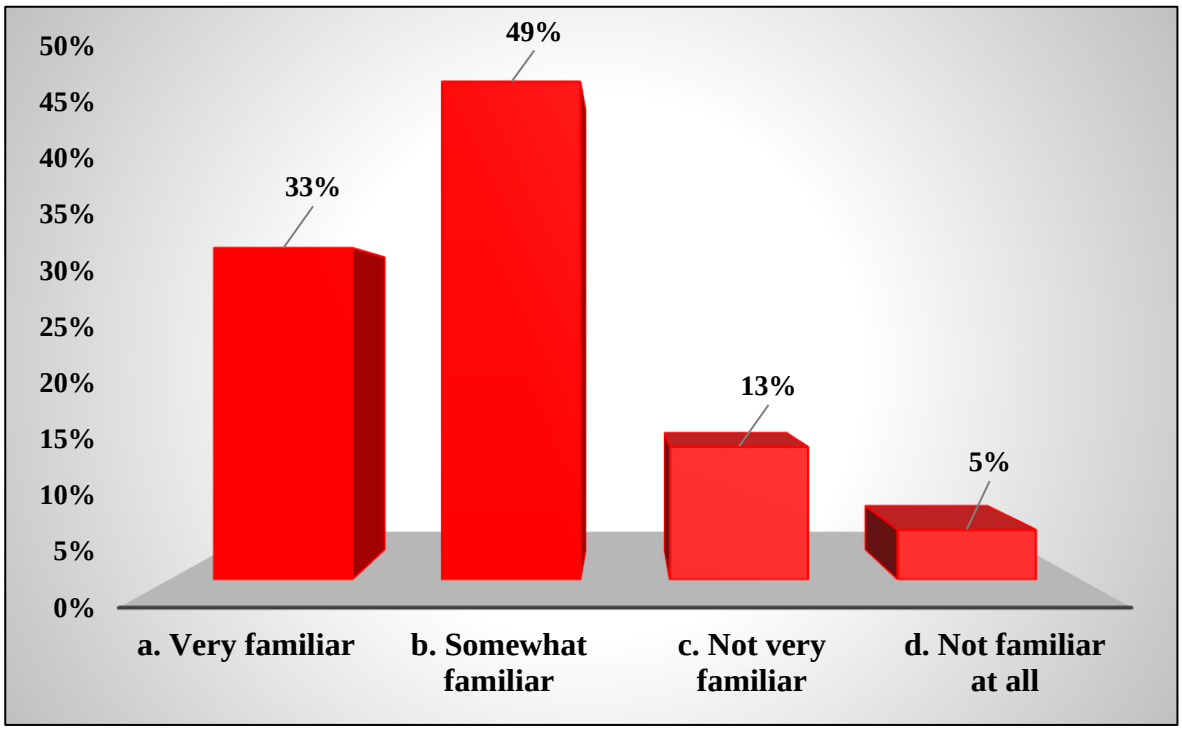
1. How familiar are you with the use of Imeglimin in treating Type 2 Diabetes Mellitus?

A. Very familiar

B. Somewhat familiar

C. Not very familiar

D. Not familiar at all



- **Very familiar (33%):** Many clinicians have substantial knowledge of Imeglimin.
- **Somewhat familiar (49%):** Nearly half are moderately familiar with its use.
- **Not very familiar (13%):** A few lack familiarity, needing more awareness.
- **Not familiar at all (5%):** Minimal awareness observed among some clinicians.

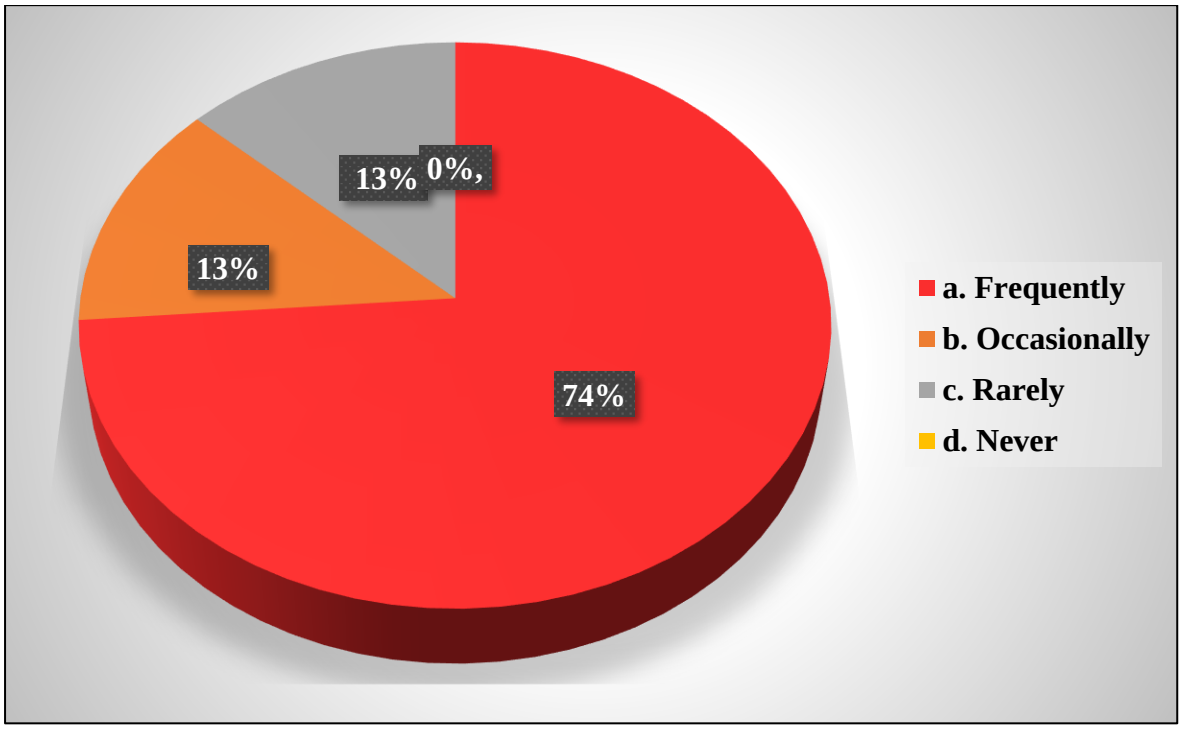
2. In your clinical practice, how frequently do you prescribe Imeglimin to your patients with Type 2 Diabetes Mellitus?

A. Frequently

B. Occasionally

C. Rarely

D. Never

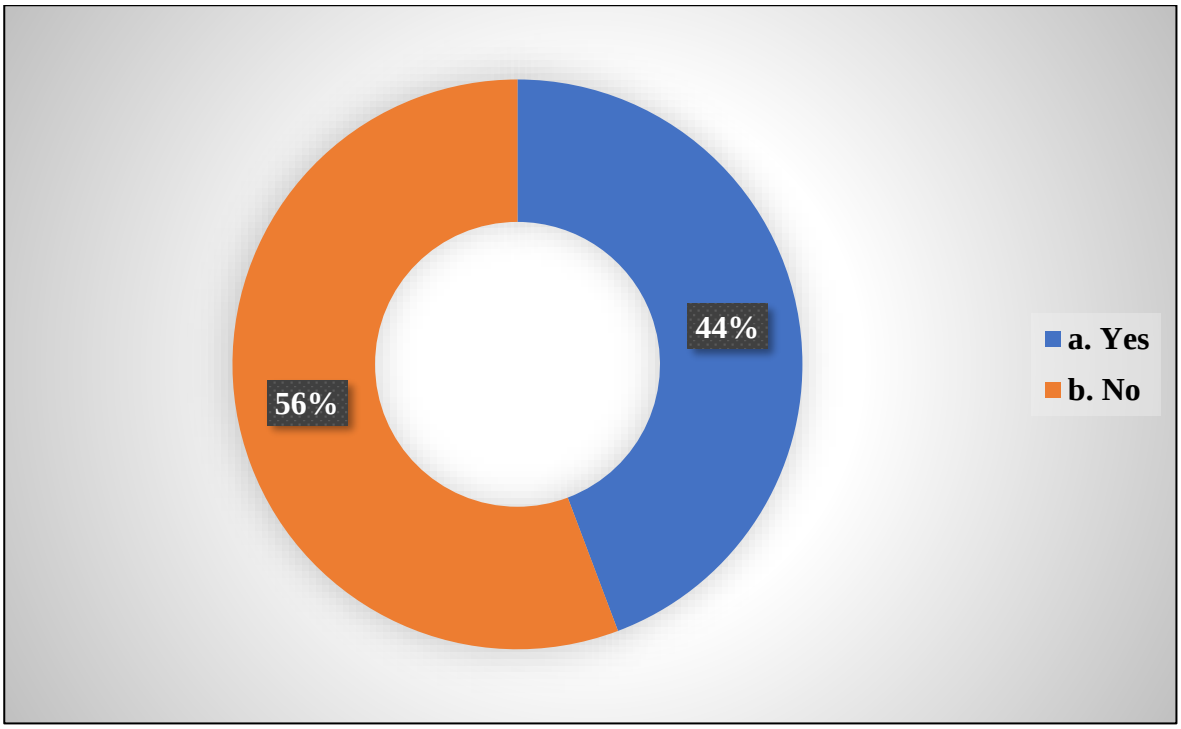


- **Frequently (74%):** A significant majority of clinicians frequently prescribe Imeglimin for patients with Type 2 Diabetes Mellitus, indicating high confidence in its use.
- **Occasionally (13%):** A smaller group of clinicians occasionally prescribe Imeglimin, likely based on specific patient needs or conditions.
- **Rarely (13%):** An equal proportion of clinicians rarely prescribe Imeglimin, suggesting limited use in their practice.

3. **Do you agree that Imeglimin is novel and promising anti-hyperglycemic agent?**

A. Yes

B. No



- **Yes (44%):** A considerable portion of clinicians believe Imeglimin is a novel and promising anti-hyperglycemic agent, recognizing its potential in managing Type 2 Diabetes Mellitus.
- **No (56%):** A slightly larger percentage of clinicians do not agree, possibly due to limited clinical experience, perceived efficacy, or preference for existing therapies.

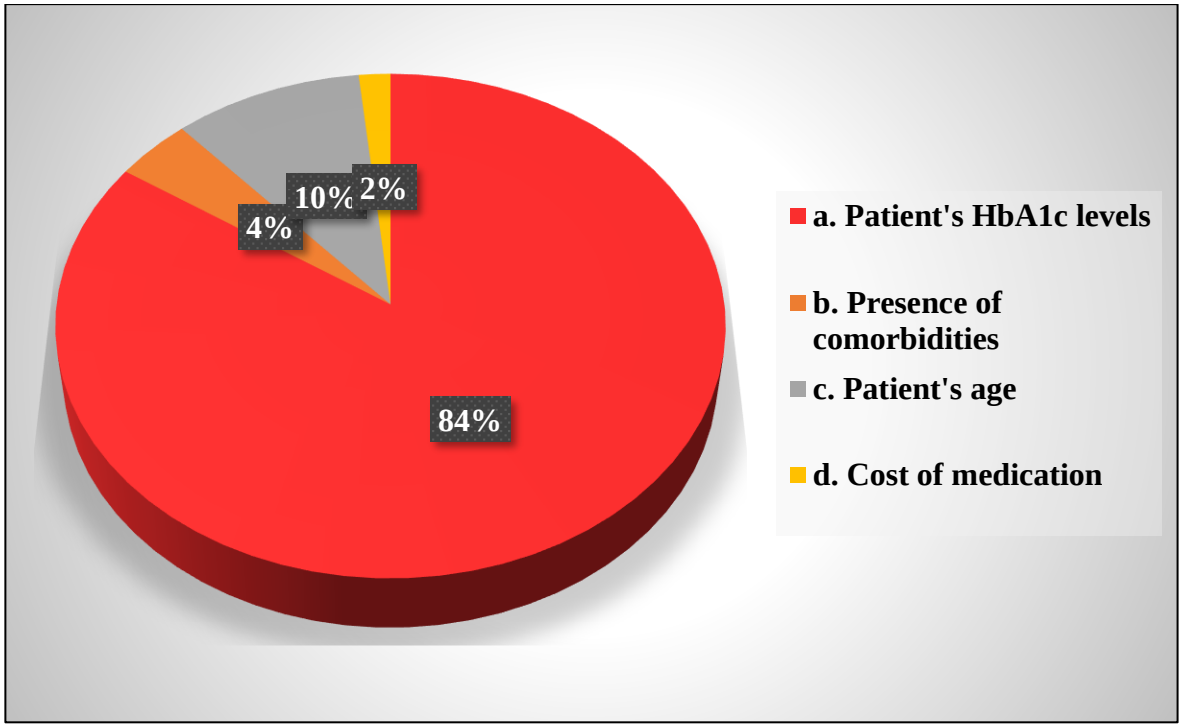
4. In your clinical practice, which are the main criteria while prescribing Imeglimin in Type 2 Diabetes Mellitus patients?

A. Patient's HbA1c levels

B. Presence of comorbidities

C. Patient's age

D. Cost of medication



- **Patient's HbA1c levels (84%):** The vast majority of clinicians prioritize HbA1c levels as the primary criterion for prescribing Imeglimin, reflecting its importance in glycemic control.
- **Presence of comorbidities (4%), Patient's age (10%) & Cost of medication (2%):** A small percentage of clinicians consider comorbidities, patient age, and cost when prescribing Imeglimin, reflecting a focus on holistic patient management, age-specific needs, and, to a lesser extent, financial considerations.

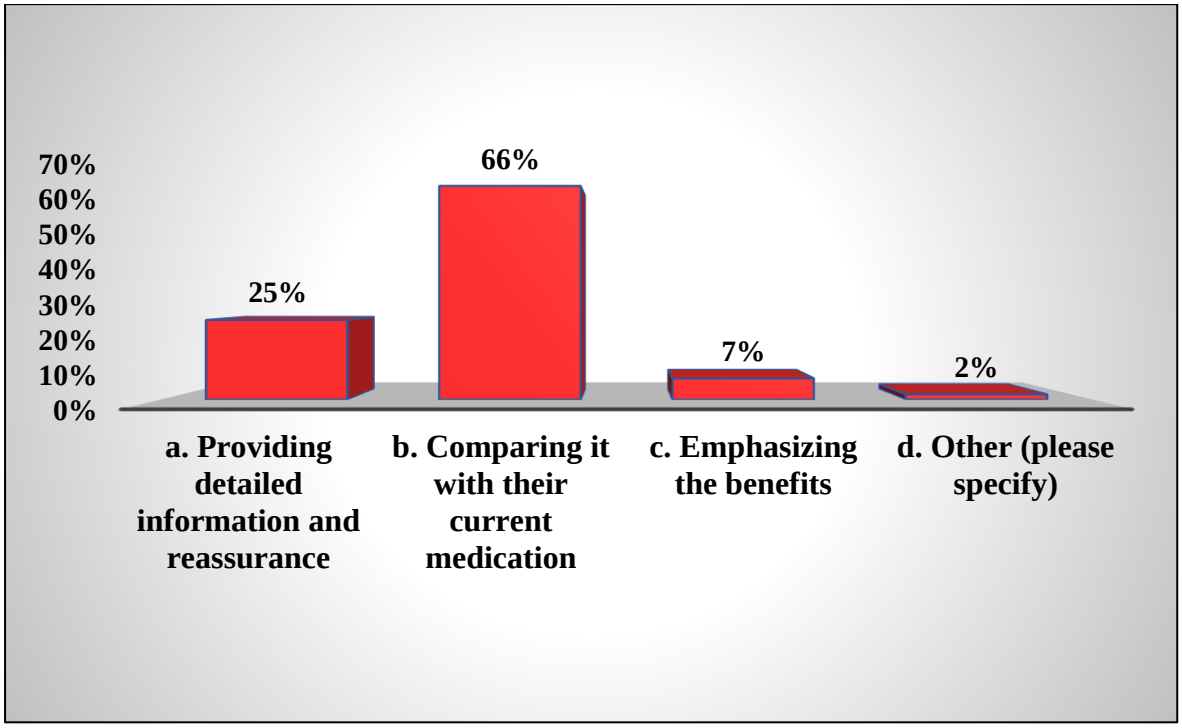
5. In your clinical practice, how do you address patients' concerns about starting a new medication like Imeglimin?

A. Providing detailed information and reassurance

B. Comparing it with their current medication

C. Emphasizing the benefits

D. Other (please specify)



- **Providing detailed information and reassurance (25%):** A significant portion of clinicians focus on educating and reassuring patients about the new medication.
- **Comparing it with their current medication (66%):** Most clinicians address concerns by highlighting advantages over existing treatments.
- **Emphasizing the benefits (7%) & Other (2%):** A smaller group highlights the benefits of Imeglimin to alleviate patient concerns, while a minimal number of clinicians employ alternative approaches.

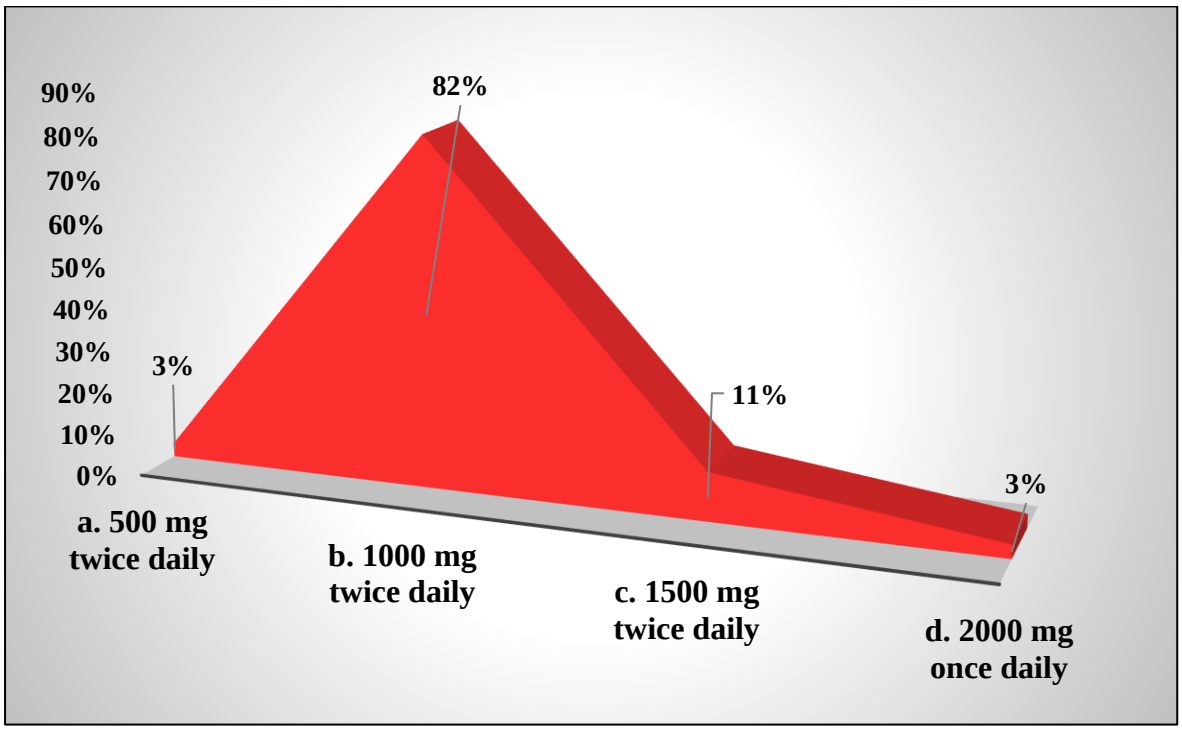
6. In your clinical practice, what dose of Imeglimin do you prefer to initiate the treatment for your diabetic patients?

A. 500 mg twice daily

B. 1000 mg twice daily

C. 1500 mg twice daily

D. 2000 mg once daily



- **1000 mg twice daily (82%):** Most clinicians initiate Imeglimin treatment with 1000 mg twice daily, the standard dose for managing Type 2 Diabetes Mellitus.
- **1500 mg twice daily (11%):** A small portion of clinicians prefer starting with a higher dose for quicker glycemic control.
- **500 mg twice daily (3%) & 2000 mg once daily (3%):** A minimal number of clinicians opt for a lower starting dose or prescribe the once-daily regimen at a higher dose, indicating limited preference for these dosing strategies.

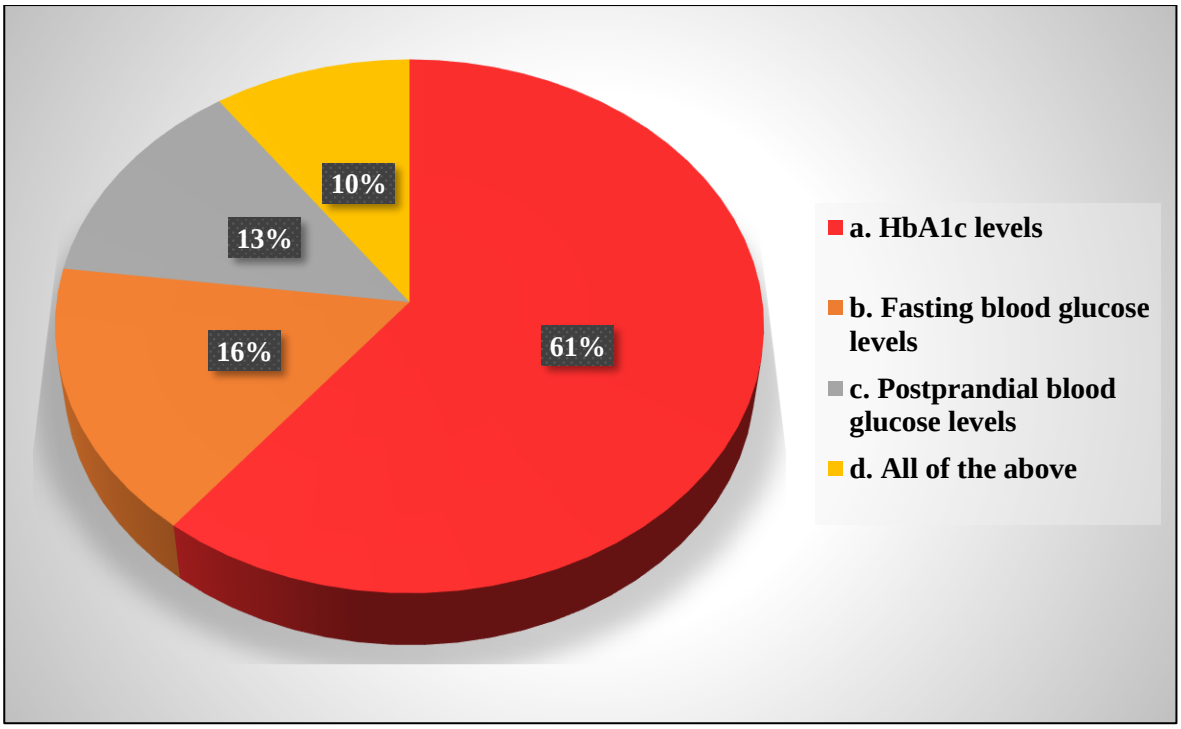
7. In your clinical practice, what measures do you use to evaluate the efficacy of Imeglimin in your patients?

A. HbA1c levels

B. Fasting blood glucose levels

C. Postprandial blood glucose levels

D. All of the above

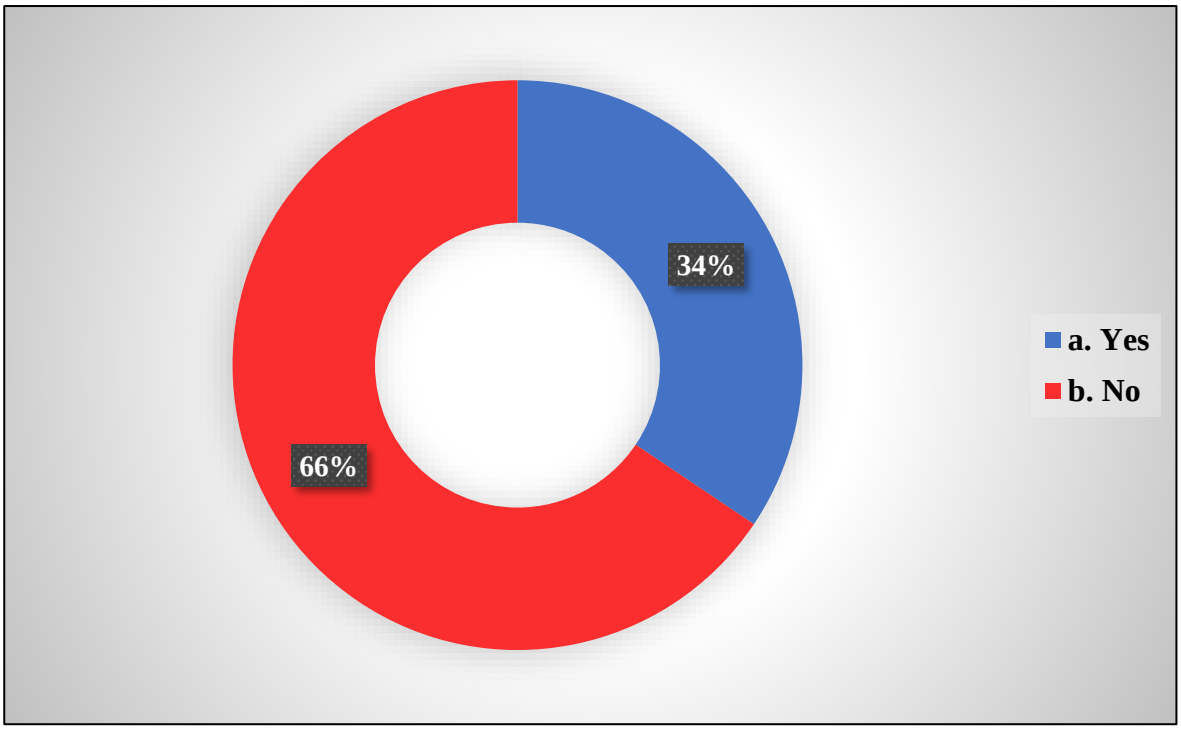


- **HbA1c levels (61%):** The majority of clinicians use HbA1c levels as the primary measure to evaluate the efficacy of Imeglimin, as it reflects long-term glucose control.
- **Fasting blood glucose levels (16%) & Postprandial blood glucose levels (13%):** Fewer clinicians rely on fasting or postprandial blood glucose levels to assess Imeglimin's effectiveness.
- **All of the above (10%):** A small percentage of clinicians use a combination of these measures to evaluate treatment outcomes with Imeglimin.

8. **Do you agree that Imeglimin offers renoprotective effect in diabetic patients?**

A. Yes

B. No

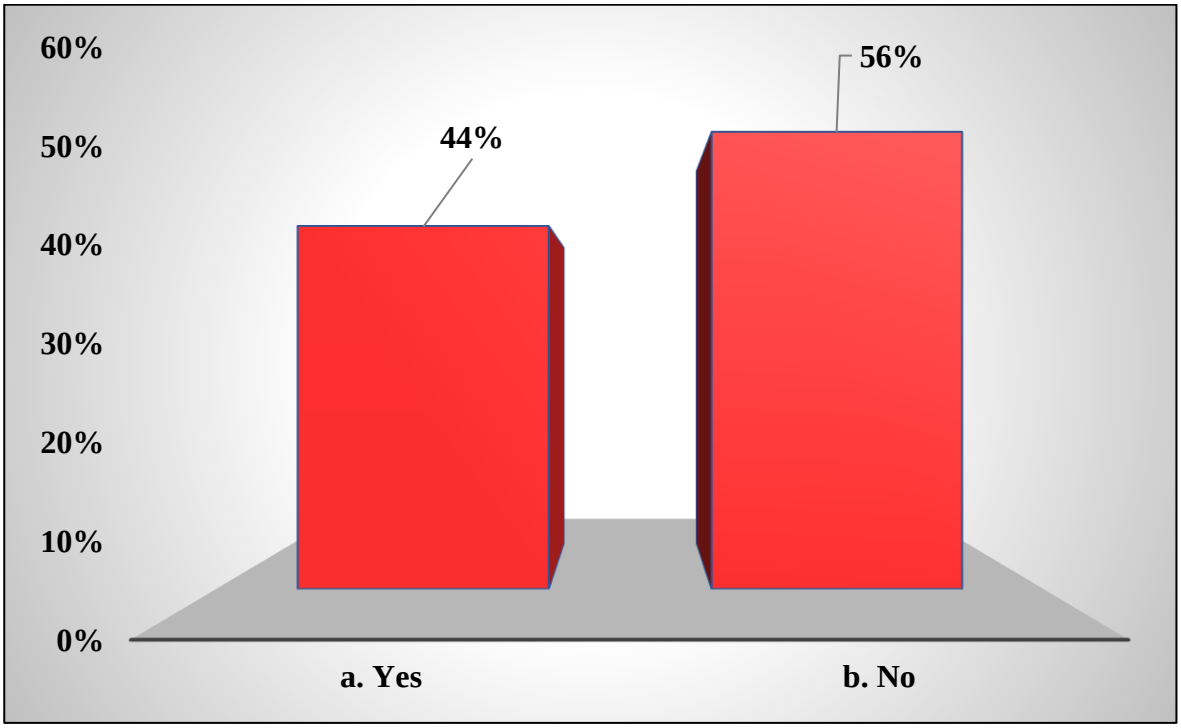


- **Yes (34%):** A smaller portion of clinicians agree that Imeglimin offers a renoprotective effect in diabetic patients, suggesting potential benefits in protecting kidney function.
- **No (66%):** The majority of clinicians do not believe Imeglimin provides a renoprotective effect, possibly due to a lack of conclusive evidence or experience in their practice.

9. **Do you aware that Imeglimin increases mitochondrial density and function?**

A. Yes

B. No



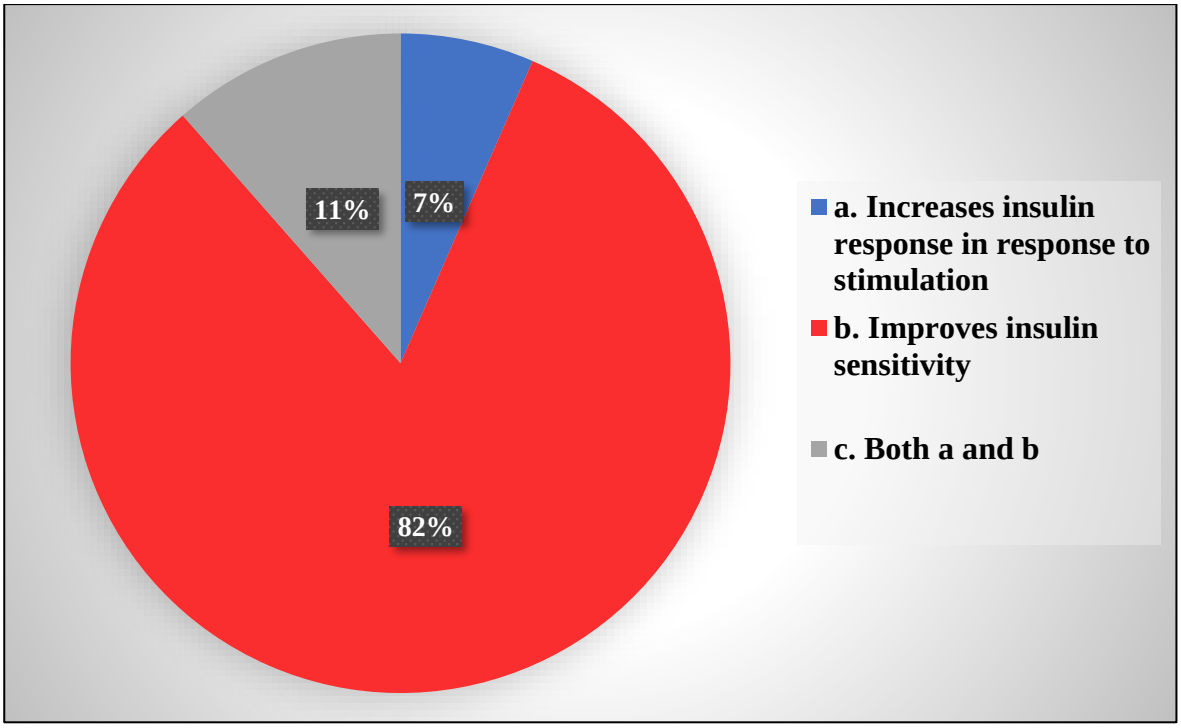
- **Yes (44%):** Nearly half of clinicians are aware that Imeglimin increases mitochondrial density and function, recognizing its potential mechanism of action related to cellular energy metabolism.
- **No (56%):** The majority of clinicians are not aware of this aspect of Imeglimin, suggesting that more education or research may be needed to highlight this property.

10. According to your opinion, which of the following are the advantages of Imeglimin?

A. Increases insulin response in response to stimulation

B. Improves insulin sensitivity

C. Both A and B

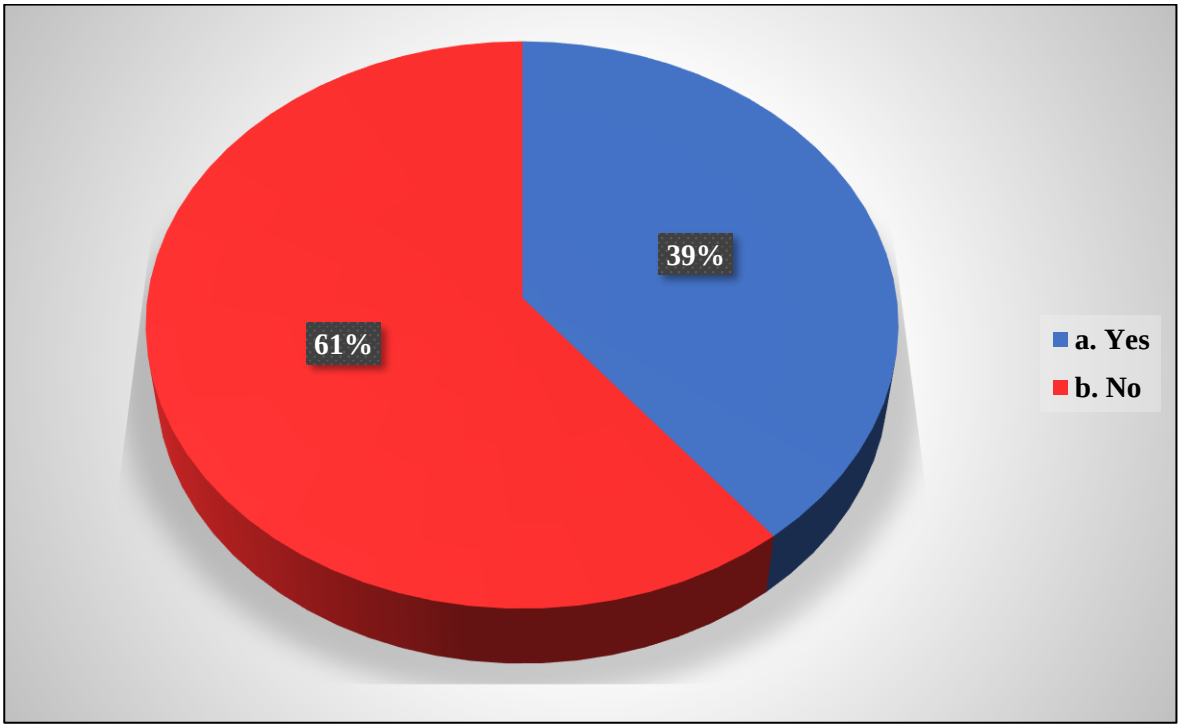


- **Increases insulin response in response to stimulation (7%):** A small percentage of clinicians highlight this as the primary advantage of Imeglimin.
- **Improves insulin sensitivity (82%):** The majority recognize improved insulin sensitivity as the key benefit, underlining its role in Type 2 Diabetes Mellitus management.
- **Both A and B (11%):** Some clinicians consider Imeglimin's dual action—enhancing insulin response and sensitivity—as its primary advantage.

11. Are you aware that Imeglimin has no drug-drug interactions with DPP4 inhibitors?

A. Yes

B. No

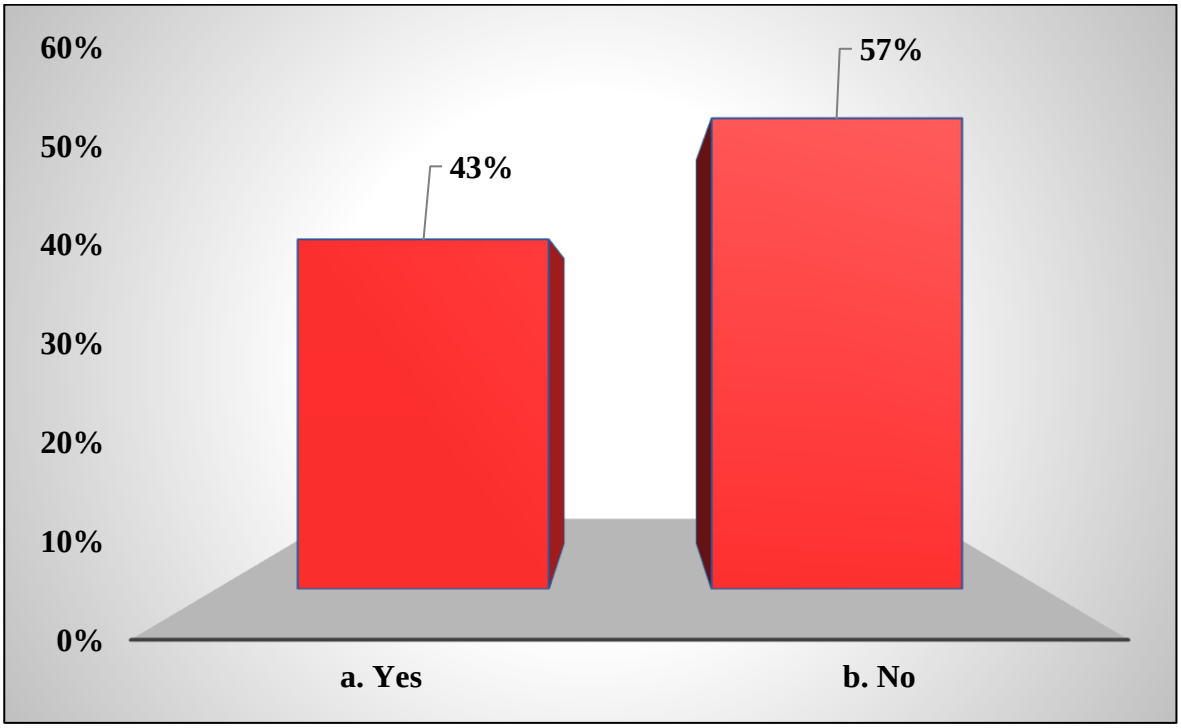


- **Yes (39%):** A minority of clinicians are aware that Imeglimin does not interact with DPP4 inhibitors, highlighting the drug's compatibility with combination therapies.
- **No (61%):** The majority are unaware of this advantage, indicating a need for greater awareness about Imeglimin's safety profile in combination therapy.

12. Are you aware that Imeglimin is safe to use in renal impairment patients (eGFR <15 ml/min/1.73m2)?

A. Yes

B. No

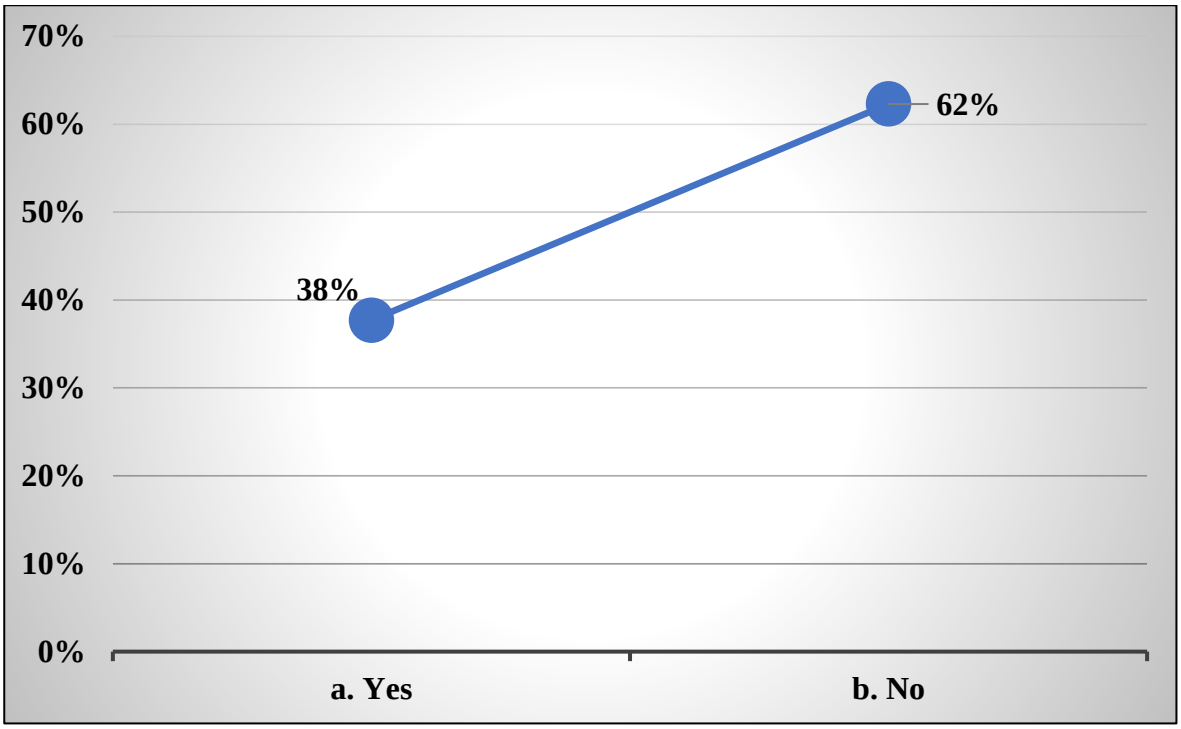


- **Yes (43%):** A notable portion of clinicians is aware that Imeglimin can be safely used in patients with renal impairment (eGFR <15 ml/min/1.73m²).
- **No (57%):** A majority of clinicians are not aware of this safety aspect, indicating a gap in knowledge about Imeglimin's renal safety profile.

13. **Do you agree that Imeglimin has reduced risk of lactic acidosis than Metformin?**

A. Yes

B. No

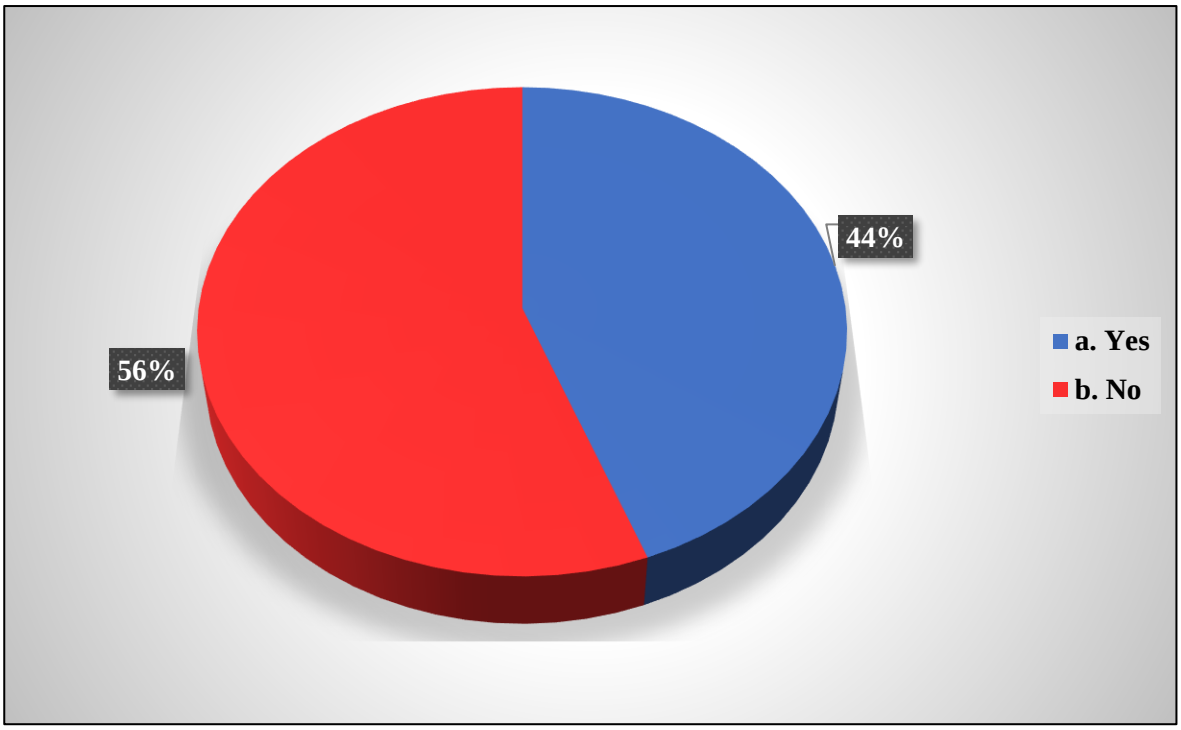


- **Yes (38%):** A minority of clinicians agree that Imeglimin poses a reduced risk of lactic acidosis compared to Metformin, highlighting its potential safety advantage.
- **No (62%):** A majority of clinicians disagree, indicating skepticism or lack of consensus regarding this specific benefit of Imeglimin.

14. **Do you agree that Imeglimin acts on the root cause of diabetes by correcting mitochondrial dysfunction?**

A. Yes

B. No



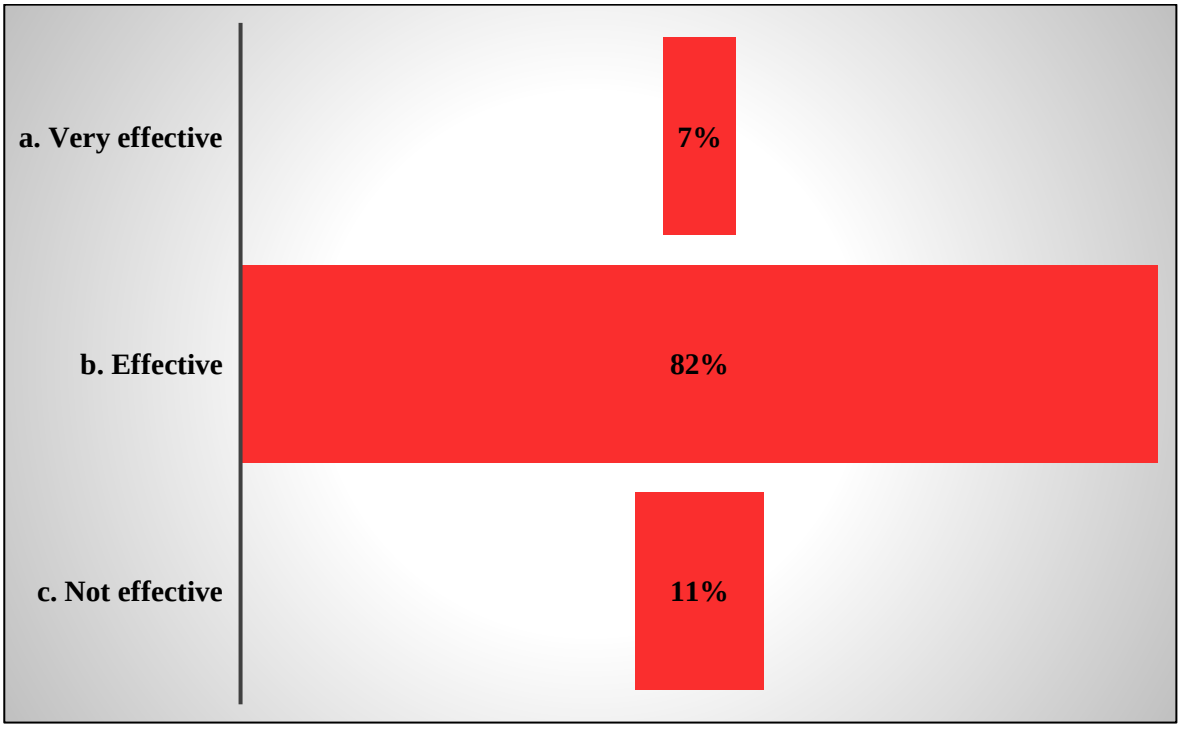
- **Yes (44%):** Some of clinicians agree that Imeglimin addresses the root cause of diabetes by correcting mitochondrial dysfunction, recognizing its unique mechanism of action.
- **No (56%):** A majority of clinicians disagree, reflecting differing opinions or a lack of conclusive evidence supporting this claim.

15. In your experience, how would you rate the efficacy of Imeglimin in terms of controlling blood glucose?

A. Very effective

B. Effective

C. Not effective



- **Very effective (7%):** A small number of clinicians rate Imeglimin as highly effective in controlling blood glucose, highlighting its strong efficacy for select patients.
- **Effective (82%):** The majority consider Imeglimin effective, indicating widespread confidence in its ability to manage blood glucose levels.
- **Not effective (11%):** A minority find Imeglimin ineffective, suggesting variability in patient response or clinical outcomes.

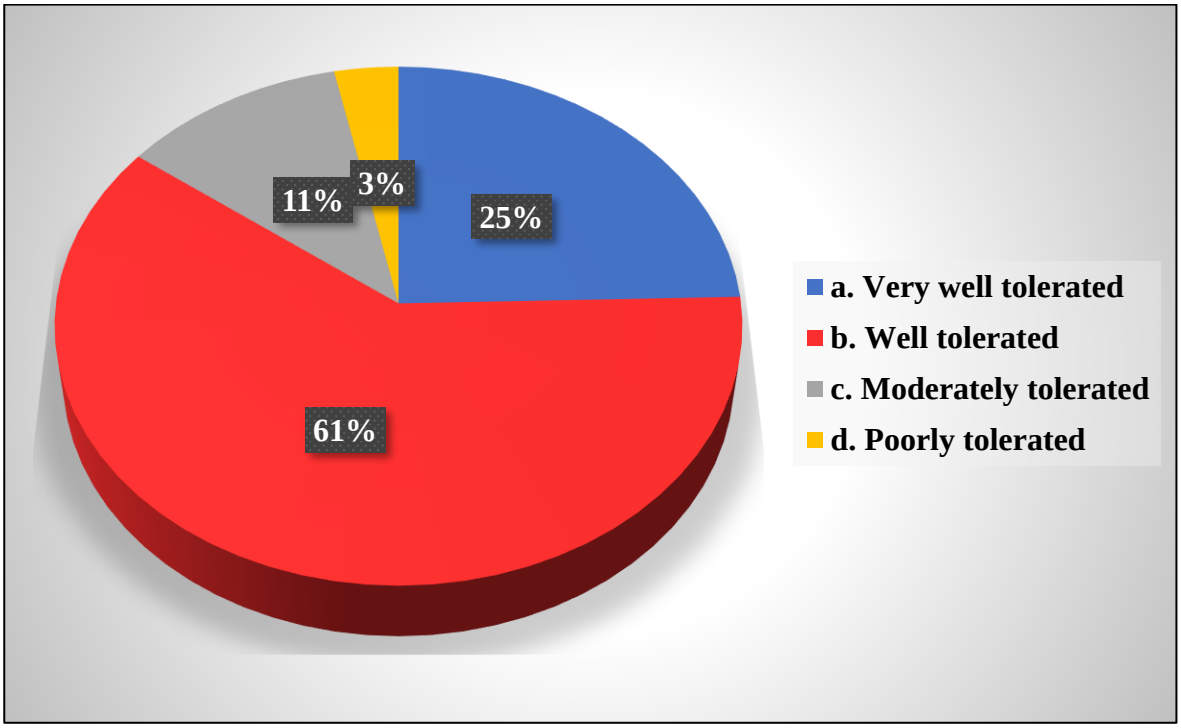
16. **In your experience, how would you rate the tolerability of Imeglimin among your patients?**

A. Very well tolerated

B. Well tolerated

C. Moderately tolerated

D. Poorly tolerated



- **Very well tolerated (25%):** A quarter of clinicians report that Imeglimin is highly tolerable, indicating minimal side effects among patients.
- **Well tolerated (61%):** The majority of clinicians find Imeglimin to be well tolerated, showing a generally favorable safety profile.
- **Moderately tolerated (11%):** A smaller group observes moderate tolerability, suggesting occasional adverse effects in some patients.
- **Poorly tolerated (3%):** A minority experience significant tolerability issues, indicating room for improvement in managing side effects.

17. In your clinical experience, what are common side effects reported by your patients who are on Imeglimin therapy?

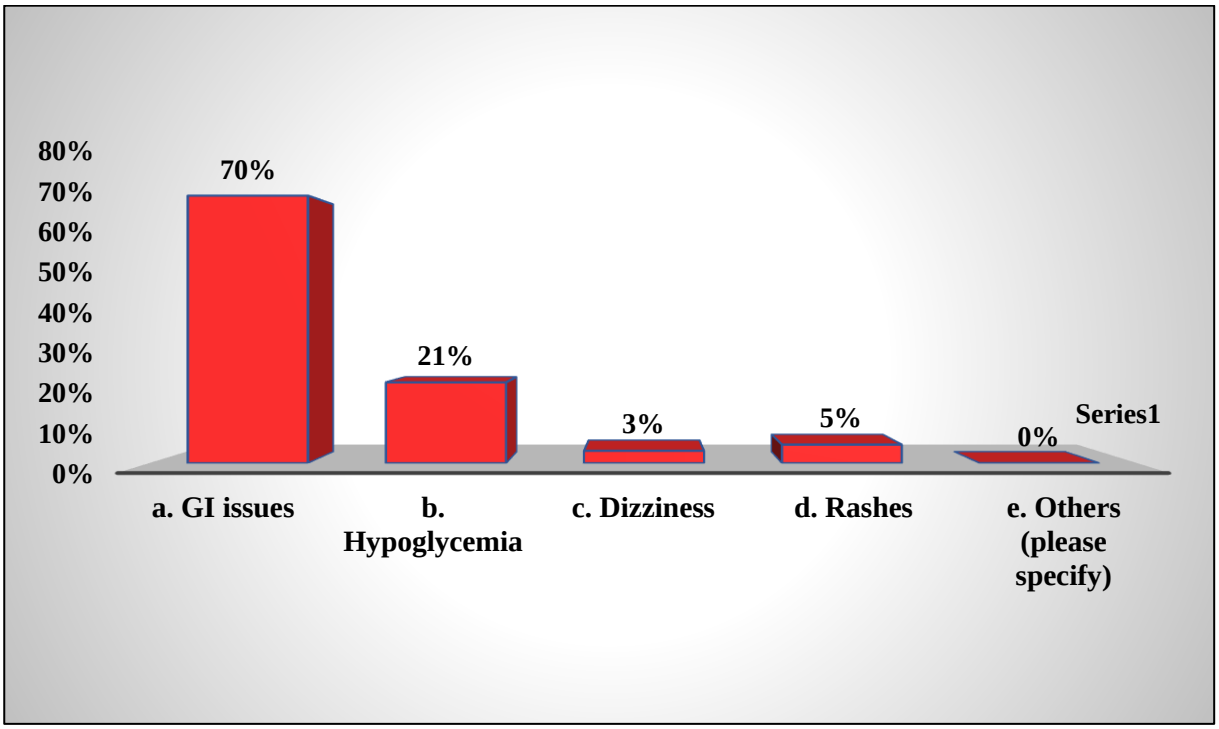
A. GI issues

B. Hypoglycemia

C. Dizziness

D. Rashes

E. Others (please specify)



- **GI issues (70%):** The most commonly reported side effects of Imeglimin therapy are gastrointestinal issues, such as nausea or diarrhea, noted by a majority of clinicians.
- **Hypoglycemia (21%):** Some patients experience episodes of hypoglycemia, although it is less common.
- **Dizziness (3%) & Rashes (5%):** A small percentage of patients report dizziness, while skin-related side effects, such as rashes, are observed in a minority of cases.

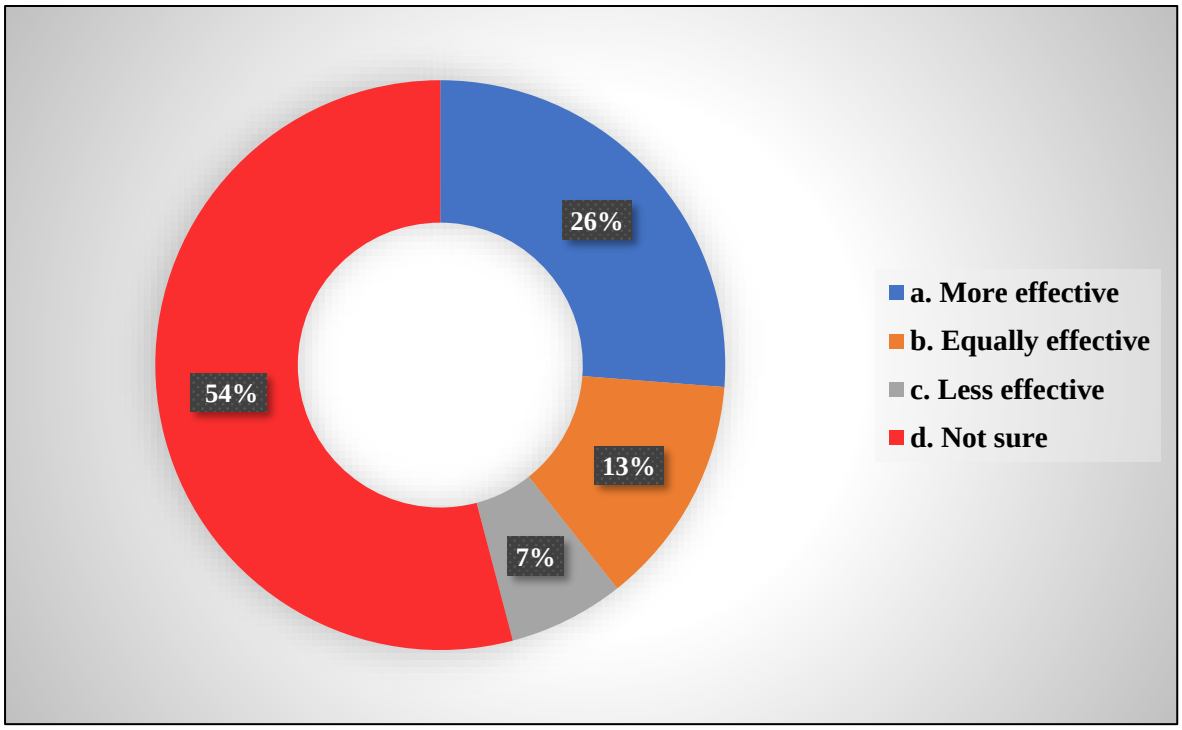
18. According to your opinion, how would you compare the effectiveness of Imeglimin to other oral antidiabetic medications?

A. More effective

B. Equally effective

C. Less effective

D. Not sure



- **More effective (26%):** Some clinicians consider Imeglimin more effective than other oral antidiabetic medications for blood glucose control.
- **Equally effective (13%) & Less effective (7%):** Some believe Imeglimin is as effective as other oral medications, while a minority find it less effective.
- **Not sure (54%):** More than half of clinicians are uncertain, indicating a need for further evidence and experience to assess Imeglimin's relative effectiveness.

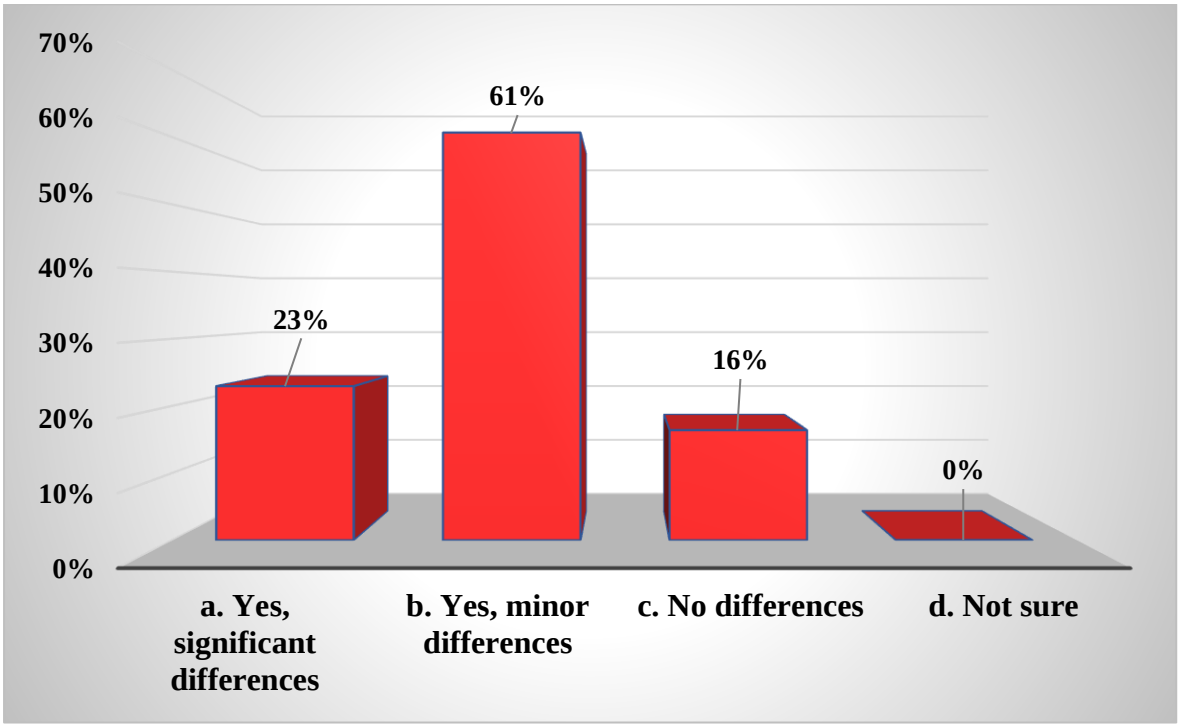
19. **In your clinical practice, have you observed any differences in the efficacy of Imeglimin among different patient populations (e.g., age, comorbidities)?**

A. Yes, significant differences

B. Yes, minor differences

C. No differences

D. Not sure

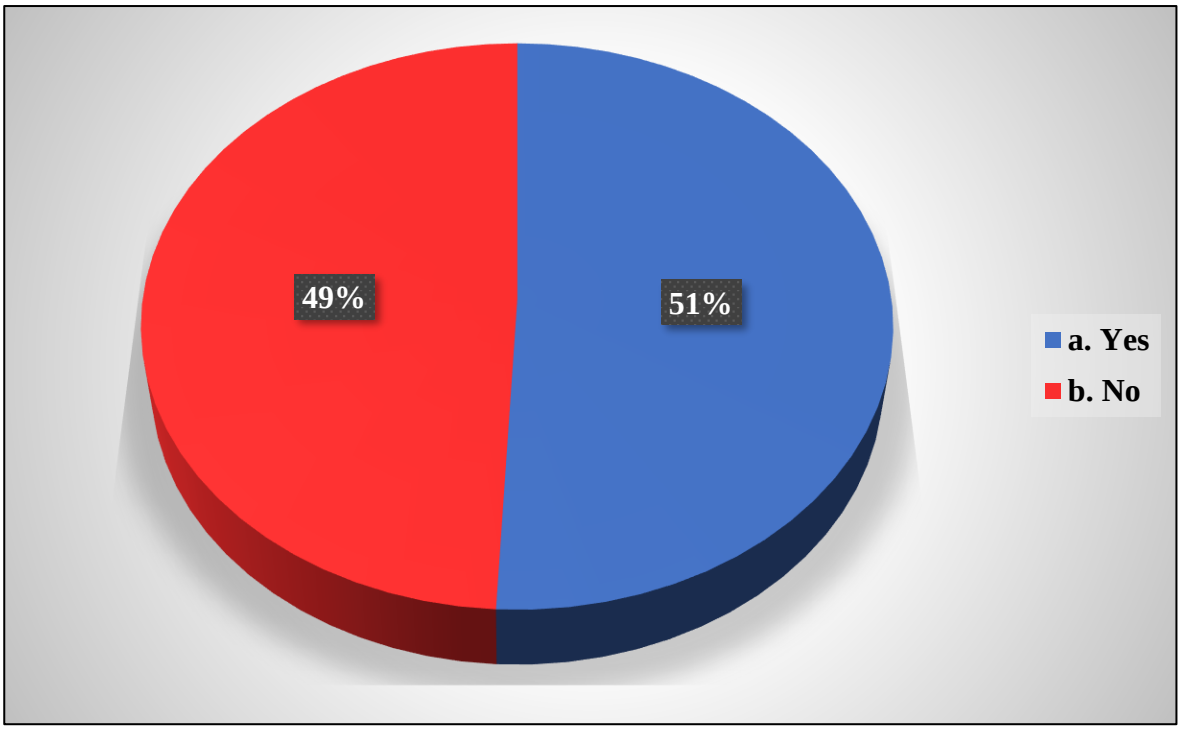


- **Yes, significant differences (23%):** A minority of clinicians report significant differences in Imeglimin's efficacy based on patient characteristics.
- **Yes, minor differences (61%):** Most clinicians observe minor variations in efficacy based on patient characteristics, but these differences are not significant.
- **No differences (16%):** A smaller group believes there are no significant differences in efficacy across various patient groups.

20. Are you satisfied with the currently available clinical literature of Imeglimin in management of Type 2 Diabetes Mellitus?

A. Yes

B. No



- **Yes (51%):** Slightly more than half of clinicians are satisfied with the available clinical literature on Imeglimin, indicating a positive view of the current evidence base.
- **No (49%):** Almost half of clinicians feel that the available clinical literature is insufficient, suggesting a need for more research or information to fully assess its effectiveness and safety.

SUMMARY

This study offers valuable insights into healthcare providers' experiences and perceptions regarding Imeglimin in the management of Type 2 Diabetes Mellitus (T2DM). The findings reflect a strong but mixed awareness of Imeglimin's benefits, efficacy, and safety profile, highlighting both enthusiasm and caution among clinicians.

Familiarity with Imeglimin:

- **Very familiar (33%):** A substantial proportion of clinicians have a strong understanding of Imeglimin.
- **Somewhat familiar (49%):** Nearly half are moderately familiar with Imeglimin, reflecting a broader exposure.
- **Not very familiar (13%) & Not familiar at all (5%):** A smaller group lacks awareness, indicating a need for greater education on the drug.

Prescribing Patterns:

- **Frequently (74%):** Most clinicians prescribe Imeglimin regularly, demonstrating confidence in its use.
- **Occasionally (13%) & Rarely (13%):** A minority use it less frequently, possibly for specific patient cases.

Perception of Imeglimin's Efficacy:

- **Yes (44%):** A notable portion sees Imeglimin as a promising novel anti-hyperglycemic agent.
- **No (56%):** A slightly larger proportion remains unconvinced, indicating hesitation or preference for existing treatments.

Factors Influencing Prescription:

- **HbA1c levels (84%):** The primary factor for prescribing Imeglimin is its impact on glycemic control.
- **Other factors (4%, 10%, 2%):** A small number of clinicians consider comorbidities, patient age, and medication cost.

Addressing Patient Concerns:

- **Providing detailed information (25%) & Comparing with existing medications (66%):** The majority focus on education and explaining advantages over current therapies.

Dosage and Treatment Regimen:

- **1000 mg twice daily (82%):** Most clinicians start Imeglimin at the standard dose.
- **Other doses (3%-11%):** Some clinicians opt for higher or lower doses based on specific patient needs.

Assessment of Efficacy:

- **HbA1c levels (61%):** The primary measure for efficacy is HbA1c.
- **Fasting/postprandial blood glucose (16%/13%):** A smaller number rely on these measures for evaluation.

Renal and Safety Considerations:

- **Renoprotective effect (34%):** A minority believe Imeglimin offers kidney protection, while most disagree (66%).
- **Mitochondrial function (44%):** Nearly half recognize its potential action in improving mitochondrial function, though a majority (56%) remain unaware.

- **Reduced lactic acidosis risk (38%):** A small group sees Imeglimin as offering lower risk of lactic acidosis compared to Metformin.
- **Renal safety (43%):** A notable number are aware of Imeglimin's safety in renal impairment, but a majority (57%) are not.

Efficacy and Tolerability:

- **Effective (82%):** A significant majority find Imeglimin effective in controlling blood glucose.
- **Tolerability (Very well tolerated: 25%, Well tolerated: 61%):** The drug is generally well tolerated, with minor concerns about gastrointestinal issues (70%).
- **Adverse Effects:** GI issues (70%) are the most common side effects, with a small percentage reporting hypoglycemia (21%) and other minor effects.

Market Perception and Literature Satisfaction:

- **Literature satisfaction (51%):** Slightly more than half are satisfied with the available clinical literature on Imeglimin, indicating a generally positive view of the current data.
- **Differences in Efficacy (23%):** A minority report significant variations in efficacy based on patient characteristics, while others (54%) are uncertain.

DISCUSSION

Based on the survey data, The survey findings indicate that Imeglimin is generally well-regarded by healthcare providers for managing Type 2 Diabetes Mellitus (T2DM), with a notable emphasis on its efficacy in controlling HbA1c levels and improving insulin sensitivity. The majority of clinicians recognize Imeglimin as an effective treatment, with most prescribing it frequently for their patients. The drug's ability to enhance insulin sensitivity and its tolerability profile are key advantages that clinicians appreciate.

However, there are certain concerns that still impact its widespread adoption and confidence among clinicians. First, while Imeglimin shows promise, there is skepticism about its renal protection, with a significant portion of clinicians unaware of its safety in patients with renal impairment. This gap in knowledge highlights the need for further education on Imeglimin's renal safety, especially considering its potential use in patients with chronic kidney disease (CKD), which is common in diabetic populations.

Another area of concern is the gastrointestinal side effects, such as nausea and diarrhea, which are frequently reported by clinicians. These adverse effects may limit its use in some patients and suggest the need for better management strategies or patient counseling to mitigate these issues.

Additionally, there is uncertainty regarding the drug's safety profile, particularly its potential for lactic acidosis. While some clinicians believe it has a reduced risk compared to Metformin, others remain unconvinced. This difference in perception points to the need for more clinical evidence and long-term safety data to establish Imeglimin's position in the treatment landscape.

In conclusion, while Imeglimin has garnered strong support for its efficacy and tolerability, there are clear areas where additional information and clinical

evidence could enhance its acceptance. Focused education on its renal safety, gastrointestinal side effects, and potential for lactic acidosis will be crucial in increasing confidence and ensuring appropriate use in clinical practice.

CLINICAL RECOMMENDATIONS

Based on the survey findings and clinical evidence, the following recommendations are proposed:

- **Patient Selection:** Imeglimin should be considered for patients with poorly controlled Type 2 Diabetes, particularly those with insulin resistance.
- **Combination Therapy:** It is recommended to use Imeglimin in combination with other agents such as Metformin and DPP4 inhibitors to enhance its efficacy.
- **Renal Insufficiency:** Imeglimin’s ability to be safely used in renal impairment without dosage adjustments is a significant advantage, making it ideal for patients with co-existing kidney issues.
- **Safety Monitoring:** Regular monitoring for gastrointestinal side effects is advised, particularly in patients starting treatment.
- **Ongoing Education:** Clinicians should be educated on the full spectrum of Imeglimin's benefits and potential side effects to increase adoption.

CONSULTANT OPINION

Experts consulted in this study acknowledge Imeglimin as a promising therapeutic option for Type 2 Diabetes Mellitus (T2DM), particularly for its potential to improve insulin sensitivity and HbA1c control. Its favorable tolerability profile and unique mechanism of action, targeting mitochondrial dysfunction, were highlighted as key strengths. Consultants noted that Imeglimin's non-hypoglycemic effect when used as monotherapy or in combination with other agents, like DPP4 inhibitors, offers a valuable treatment option, especially in patients at risk for hypoglycemia.

Despite the positive reception, experts expressed caution regarding Imeglimin's limited renal protection, raising concerns about its use in patients with renal impairment. While generally satisfied with its current clinical evidence, several consultants recommended further investigation into its long-term renal safety and gastrointestinal side effects to fully establish its role in T2DM management. Additionally, some experts pointed out the need for more extensive data on its potential risks, such as lactic acidosis, and its long-term impact on bone health, to ensure the broader adoption and safe use of Imeglimin in clinical practice.

MARKET OPPORTUNITIES

Targeting Insulin Resistance: Imeglimin's unique action on insulin sensitivity makes it a key player in the management of insulin resistance, a hallmark of Type 2 Diabetes.

Combination Therapy Potential: Imeglimin's compatibility with other hypoglycemic agents presents an opportunity for fixed-dose combinations.

Renal Impairment: Its safety profile in patients with renal impairment positions Imeglimin as a preferred treatment option in diabetic patients with chronic kidney disease.

Educational Campaigns: Focusing on educating clinicians and patients about its renal safety and overall benefits could increase usage.

MARKET POSITIONING

Holistic Therapy: Imeglimin should be marketed as a multi-benefit treatment for Type 2 Diabetes, addressing both glycemic control and associated comorbidities like insulin resistance and dyslipidemia.

Safety and Tolerability: Highlighting Imeglimin's favorable safety profile compared to older agents like Metformin can drive adoption.

Combination Therapy: Positioning Imeglimin as an ideal partner for other diabetes medications could strengthen its market position.

Educational Outreach: Ongoing educational efforts will be essential to expand clinician familiarity and support its integration into diabetes treatment regimens.

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10. Current study aim and rationale. Proposed research outline.

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