

EFFICACY AND SAFETY OF DOXYLAMINE AND PYRIDOXINE

in Treating Nausea and Vomiting During Pregnancy
(North Zone)



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INTRODUCTION

Nausea and vomiting during pregnancy (NVP), often referred to as "morning sickness," is one of the most common and debilitating symptoms experienced by pregnant women. Affecting up to 70%–80% of pregnancies, NVP can significantly impair maternal well-being, daily activities, and quality of life (1). In severe cases, it may progress to hyperemesis gravidarum, a condition associated with dehydration, electrolyte imbalances, and hospitalization (2).

The etiology of NVP is multifactorial, involving hormonal, genetic, and environmental factors, making its management complex and patient-specific (3). While mild cases may resolve without intervention, moderate to severe symptoms often necessitate medical treatment to improve maternal comfort and nutritional status.

Doxylamine and pyridoxine (vitamin B6) combination therapy is an established first-line treatment for NVP due to its safety profile and efficacy (4, 5). Doxylamine, an antihistamine, reduces nausea by blocking histamine receptors, while pyridoxine mitigates symptoms through its role in neurotransmitter synthesis (6). Despite its long history of use and FDA approval for NVP, barriers to its widespread adoption, including concerns about safety, patient adherence, and prescribing practices, persist in various healthcare settings (7).

Given the prevalence of NVP and the significant burden it imposes, evaluating the real-world efficacy and safety of doxylamine-pyridoxine therapy is essential. This study aims to assess healthcare providers' awareness, perceptions, and prescribing patterns regarding this combination, contributing to evidence-based improvements in maternal care (4).

RATIONALE OF THE STUDY

The high prevalence of NVP underscores the need for effective, safe, and accessible treatment options that can alleviate symptoms and improve quality of life for pregnant women. While doxylamine and pyridoxine combination therapy is recognized as a first-line treatment, variations in its clinical use and perceptions among healthcare providers indicate a gap in knowledge and implementation.

This study seeks to address these gaps by evaluating clinicians' experiences and opinions regarding the efficacy, safety, and practical application of doxylamine and pyridoxine in managing NVP. By identifying barriers to its use and opportunities for optimizing patient outcomes, the findings aim to enhance clinical practices and inform guidelines for treating NVP.

STUDY OBJECTIVE

The primary objective of this study is to evaluate the real-world efficacy and safety of doxylamine-pyridoxine therapy for NVP. Specific aims include:

- **Assessing Clinician Awareness and Familiarity:** Determine clinicians' understanding of the mechanisms, benefits, and safety profile of doxylamine-pyridoxine therapy.
- **Evaluating Prescribing Patterns:** Identify current prescribing trends for NVP treatment and factors influencing therapy selection.
- **Analyzing Effectiveness and Safety:** Examine clinicians' perceptions of the effectiveness and tolerability of doxylamine-pyridoxine in diverse patient populations.
- **Exploring Patient Demographics:** Identify demographic and clinical factors influencing the use of doxylamine-pyridoxine, including severity of symptoms, gestational age, and comorbidities.

- **Identifying Barriers and Opportunities:** Investigate challenges to adopting doxylamine-pyridoxine therapy and explore strategies to improve its utilization and accessibility.

METHODS

The study employed a survey-based method, utilizing a structured questionnaire distributed among healthcare professionals involved in the management of nausea and vomiting during pregnancy (NVP). The aim was to gather data on the efficacy and safety of doxylamine-pyridoxine therapy in NVP management. The methodology includes the following components:

The questionnaire will include sections on:

- Clinician familiarity with doxylamine-pyridoxine therapy.
- Current prescribing practices and alternative treatments for NVP.
- Perceived efficacy and safety of doxylamine-pyridoxine in clinical practice.
- Factors influencing prescribing decisions and barriers to its use.
- Patient characteristics (e.g., gestational age, symptom severity) considered during treatment planning.

The survey will be reviewed and validated by experts in obstetrics and maternal-fetal medicine to ensure relevance and accuracy.

Participant Recruitment:

The study will target obstetricians, gynecologists, and general practitioners across healthcare settings in India. Participants will be recruited based on their experience in managing NVP and their willingness to contribute to the study.

Data Collection:

Responses will be collected electronically and in person over a three-month period. The survey will be designed to maximize participation by ensuring ease of completion and guaranteeing respondent confidentiality.

Data Analysis:

Quantitative methods will be used to analyze survey responses, identifying trends and patterns in awareness, prescribing practices, and perceived effectiveness. Descriptive statistics will summarize the data, while comparative analyses will explore variations based on clinician specialty, patient demographics, and treatment settings.

Ethical Considerations:

The study will adhere to ethical guidelines for research involving human participants. Informed consent will be obtained from all participants, and data will be anonymized to protect respondent confidentiality.

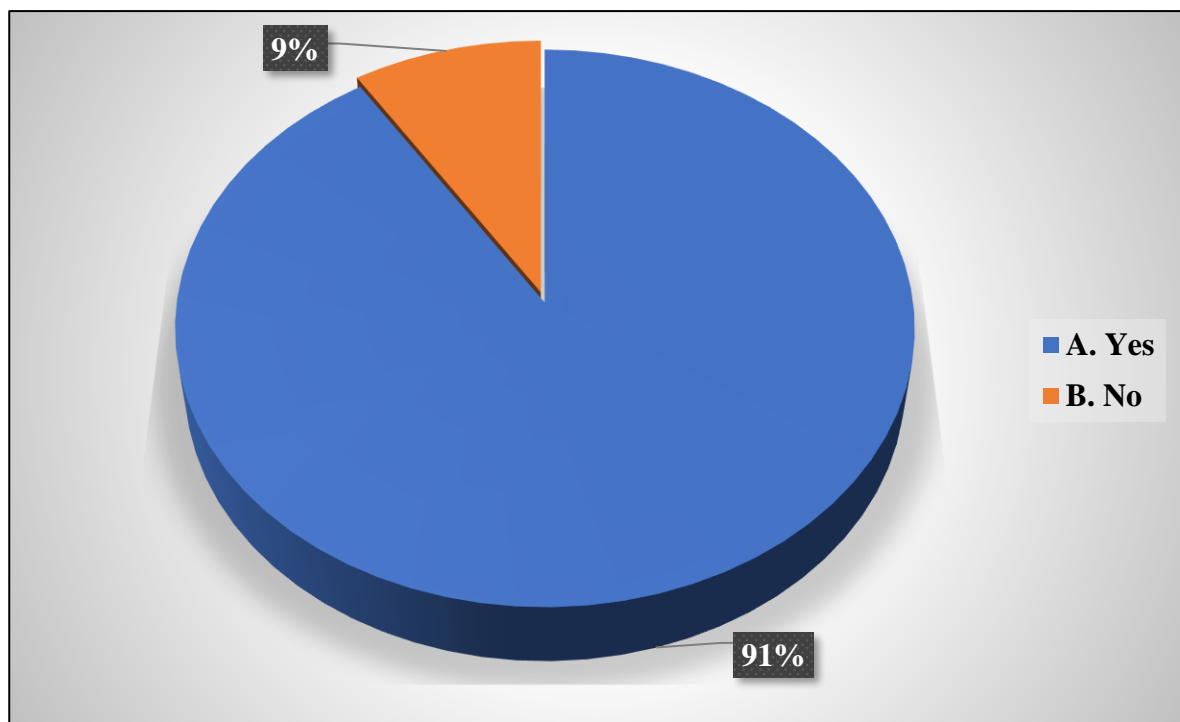
RESULTS

A total of 88 HCPs participated in the survey. Below is the summary of the responses.

1. Are you aware that Doxylamine and Pyridoxine is first-line treatment recommendation for nausea and vomiting during pregnancy as per the American College of Obstetricians and Gynecologists (ACOG)?

A. Yes

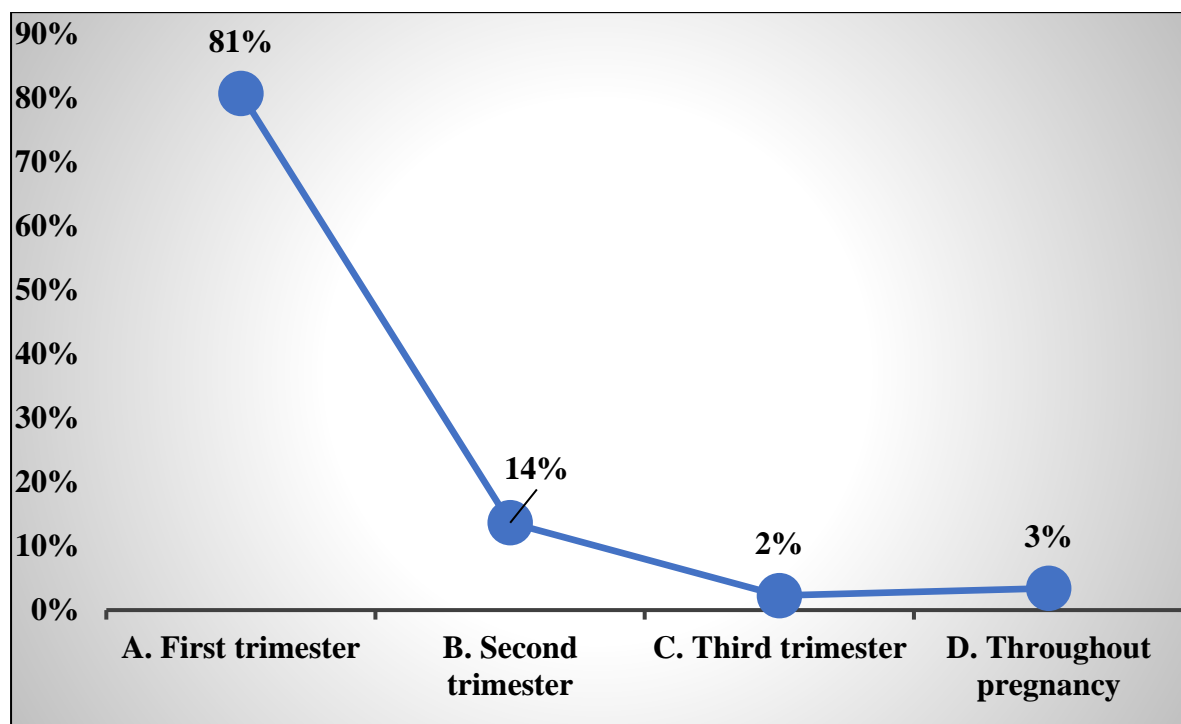
B. No



- **Yes (9%):** A small percentage of clinicians are aware that Doxylamine and Pyridoxine is the first-line treatment for nausea and vomiting during pregnancy as per ACOG.
- **No (91%):** The majority of clinicians are unaware of this recommendation.

2. In your clinical practice, at what stage of pregnancy do you most commonly prescribe Doxylamine and Pyridoxine?

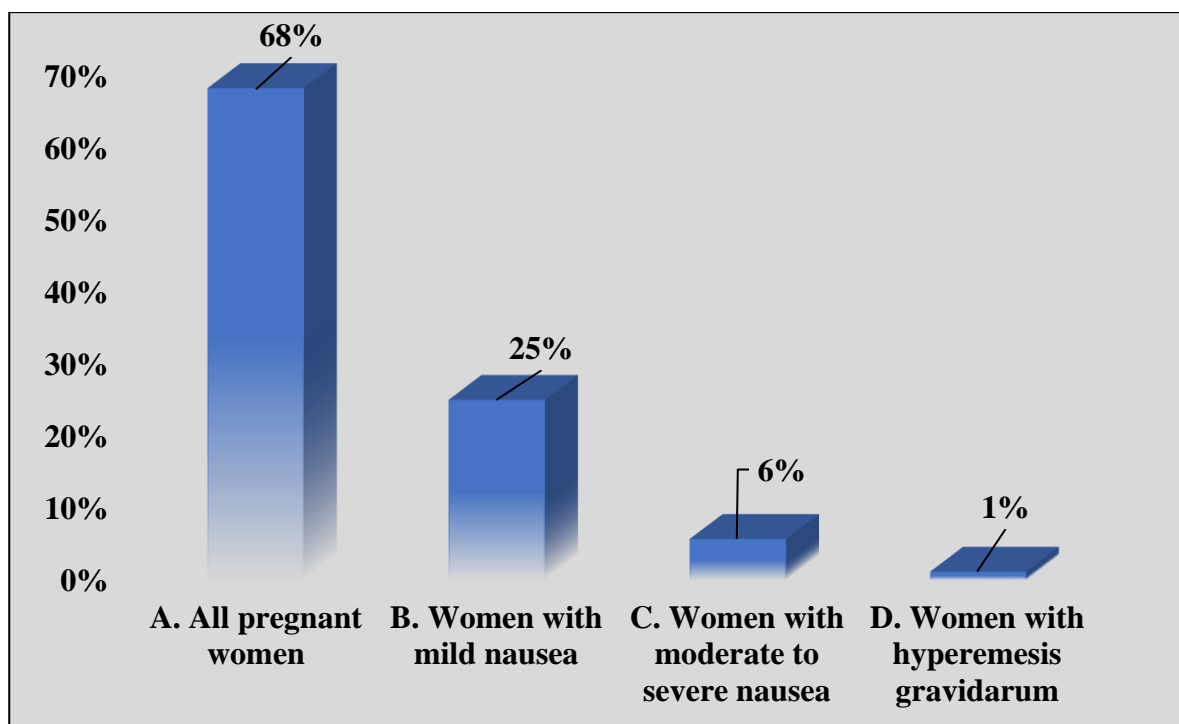
- A. First trimester
- B. Second trimester
- C. Third trimester
- D. Throughout pregnancy



- **First Trimester (81%):** The majority of clinicians prescribe Doxylamine and Pyridoxine in the first trimester to manage nausea and vomiting.
- **Second Trimester (14%):** A smaller group prescribes it during the second trimester.
- **Third Trimester (2%) & Throughout Pregnancy (3%):** Very few clinicians recommend it in the third trimester & throughout the entire pregnancy.

3. According to your opinion, which patient population is most suitable for Doxylamine and Pyridoxine therapy?

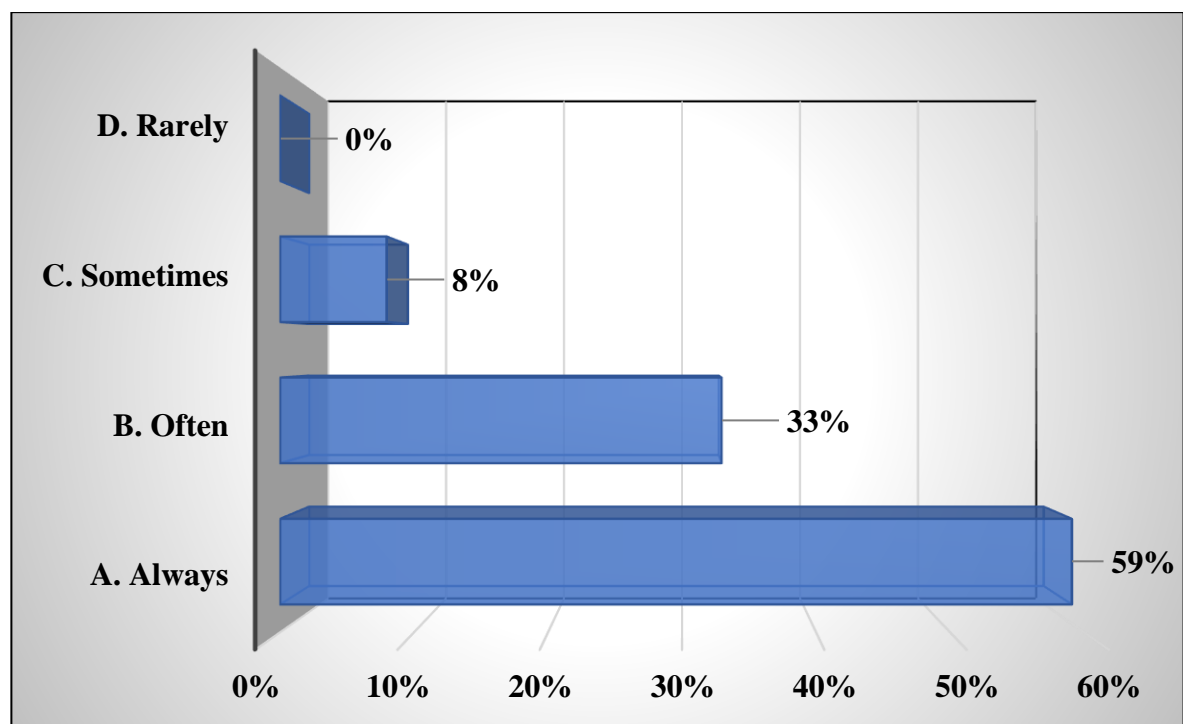
- A. All pregnant women
- B. Women with mild nausea
- C. Women with moderate to severe nausea
- D. Women with hyperemesis gravidarum



- **All pregnant women (68%):** The majority believe Doxylamine and Pyridoxine is suitable for all pregnant women.
- **Women with mild nausea (25%):** Many clinicians find it most suitable for women with mild nausea.
- **Women with moderate to severe nausea (6%) & Women with hyperemesis gravidarum (1%):** Very few recommend it for moderate to severe nausea & hyperemesis gravidarum cases.

4. In your clinical practice, how often do you prescribe Doxylamine and Pyridoxine in morning sickness during pregnancy?

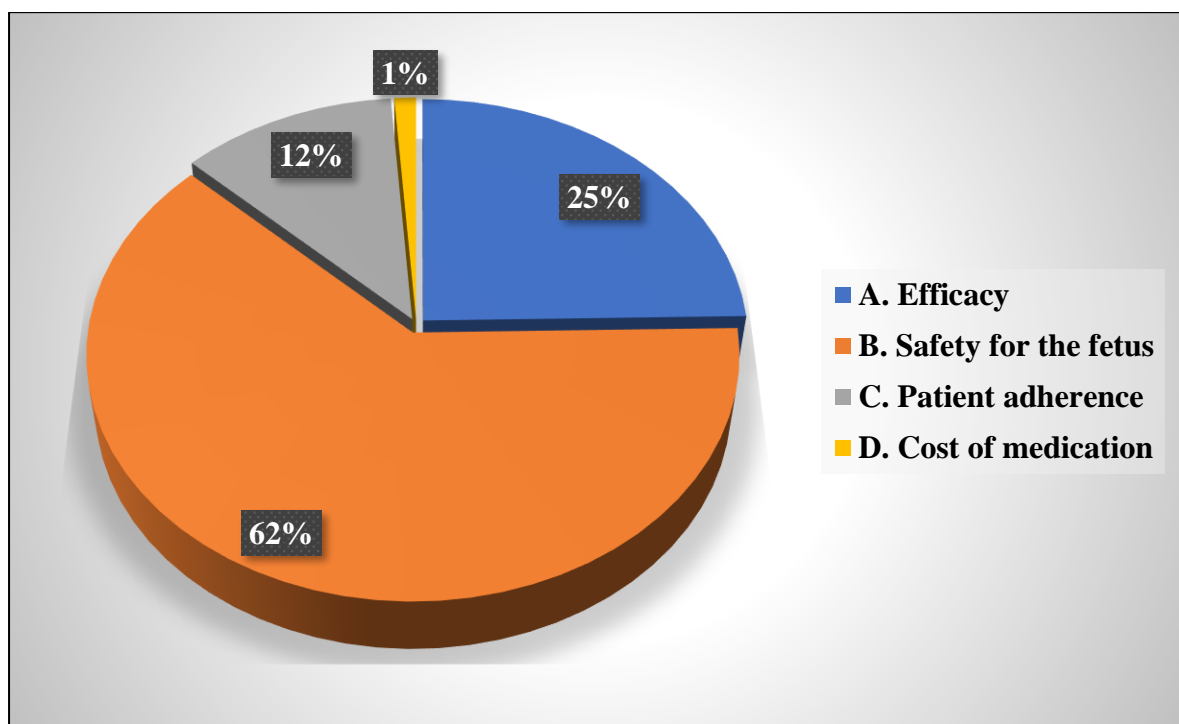
- A. Always
- B. Often
- C. Sometimes
- D. Rarely



- **Always (59%):** A significant proportion of clinicians consistently prescribe Doxylamine and Pyridoxine for managing morning sickness.
- **Often (33%):** Many clinicians frequently use it as part of their practice.
- **Sometimes (8%):** A smaller group prescribes it occasionally.
- **Rarely (0%):** No clinicians reported rarely prescribing it.

5. What is your primary concern when prescribing Doxylamine and Pyridoxine in pregnancy?

- A. Efficacy
- B. Safety for the fetus
- C. Patient adherence
- D. Cost of medication



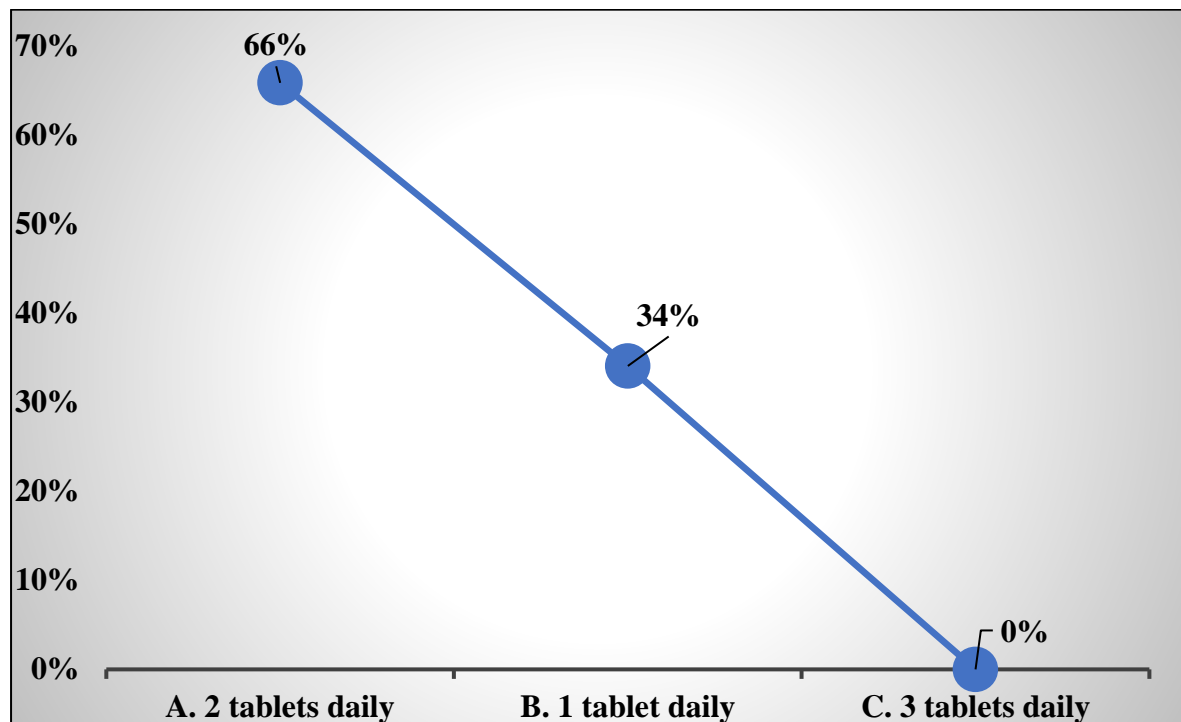
- **Efficacy (25%):** A portion of clinicians are primarily concerned about the effectiveness of the medication.
- **Safety for the fetus (62%):** The majority prioritize fetal safety when prescribing Doxylamine and Pyridoxine.
- **Patient adherence (12%) & Cost of medication (1%):** A few clinicians consider patient adherence & cost of the medication as their main concern.

6. According to your opinion, what is the standard starting dose of Doxylamine and Pyridoxine for managing nausea and vomiting in pregnancy?

A. 2 tablets daily

B. 1 tablet daily

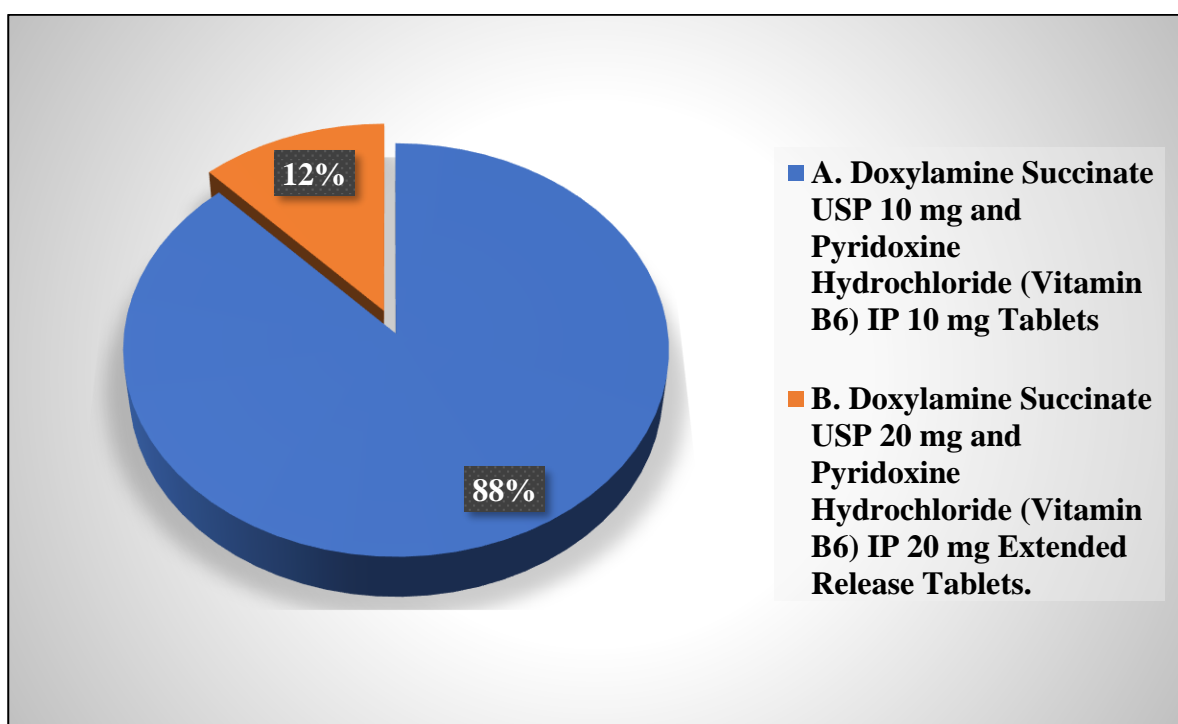
C. 3 tablets daily



- **2 tablets daily (66%):** The majority of clinicians consider 2 tablets daily as the standard starting dose for managing nausea and vomiting during pregnancy.
- **1 tablet daily (34%):** A significant proportion prefer starting with 1 tablet daily.
- **3 tablets daily (0%):** No clinicians reported 3 tablets daily as the standard starting dose.

7. In your clinical practice, which strength do you prefer for Doxylamine and Pyridoxine therapy for morning sickness in pregnancy?

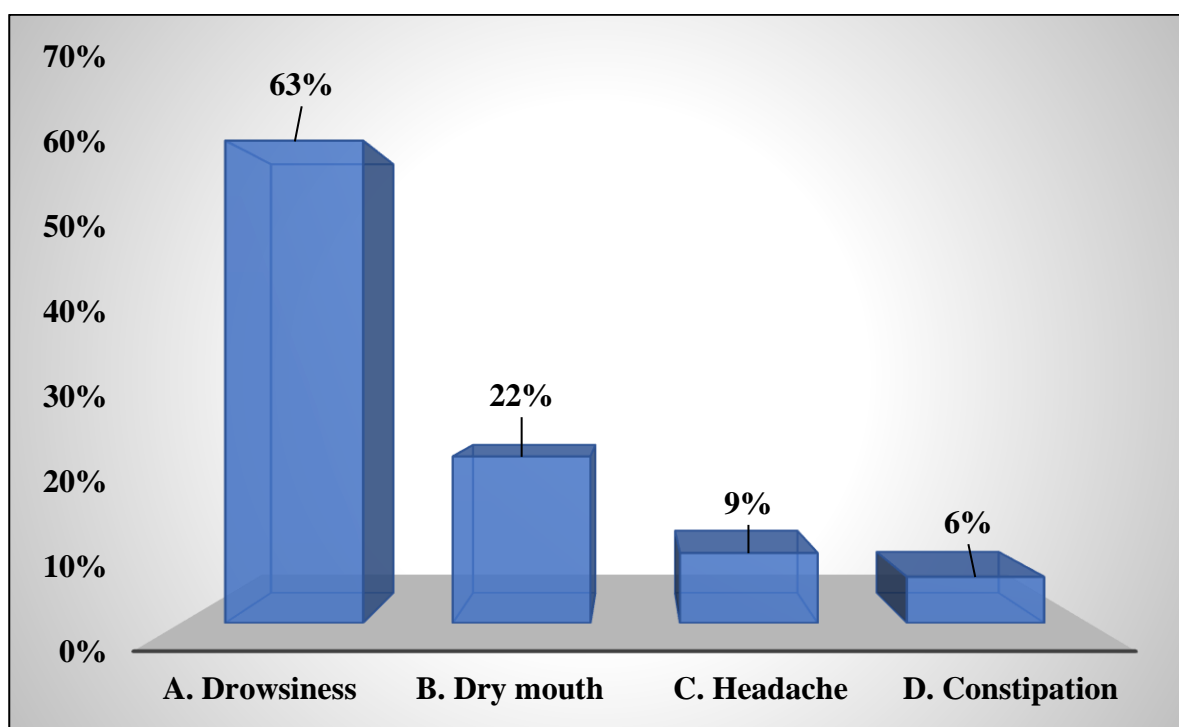
- A. Doxylamine Succinate USP 10 mg and Pyridoxine Hydrochloride (Vitamin B6) IP 10 mg Tablets
- B. Doxylamine Succinate USP 20 mg and Pyridoxine Hydrochloride (Vitamin B6) IP 20 mg Extended Release Tablets.



- **Doxylamine Succinate USP 10 mg and Pyridoxine Hydrochloride (Vitamin B6) IP 10 mg Tablets (12%):** A small percentage of clinicians prefer this lower strength combination.
- **Doxylamine Succinate USP 20 mg and Pyridoxine Hydrochloride (Vitamin B6) IP 20 mg Extended Release Tablets (88%):** The majority prefer this higher strength, extended-release combination for managing morning sickness during pregnancy.

8. In your clinical practice, what common side effect have you observed with Doxylamine and Pyridoxine therapy during pregnancy?

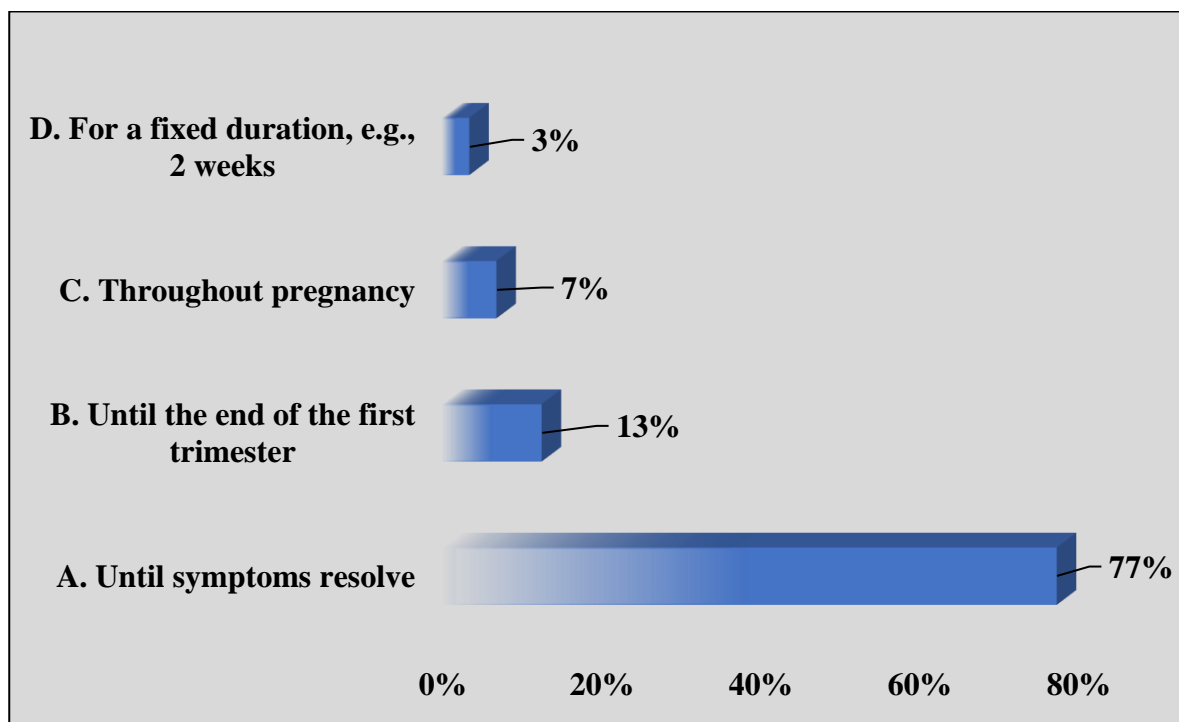
- A. Drowsiness
- B. Dry mouth
- C. Headache
- D. Constipation



- **Drowsiness (63%):** The majority of clinicians observe drowsiness as a common side effect of Doxylamine and Pyridoxine therapy during pregnancy.
- **Dry mouth (22%):** Some patients report experiencing dry mouth as a side effect.
- **Headache (9%):** A smaller percentage of patients experience headaches.
- **Constipation (7%):** A few clinicians note constipation as a side effect.

9. In your clinical practice, how long do you typically continue Doxylamine and Pyridoxine therapy in your patients?

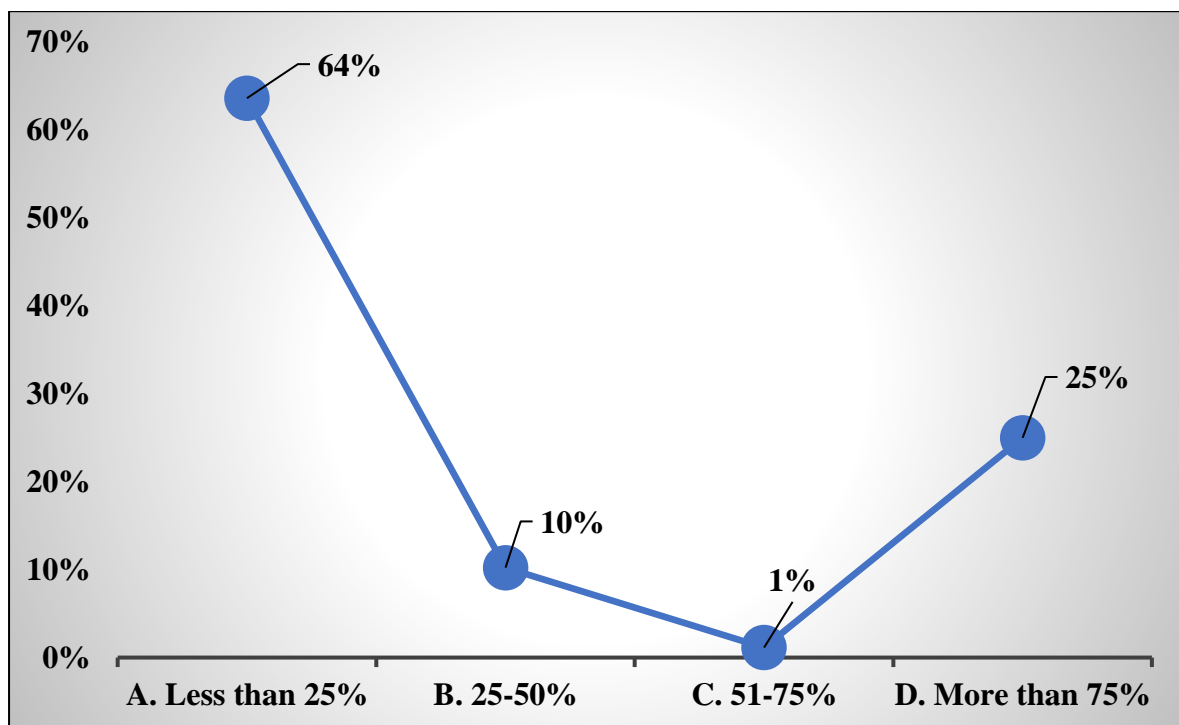
- A. Until symptoms resolve
- B. Until the end of the first trimester
- C. Throughout pregnancy
- D. For a fixed duration, e.g., 2 weeks



- **Until symptoms resolve (77%):** Most stop treatment when symptoms resolve, usually by the end of the first trimester.
- **Until the end of the first trimester (13%):** Some stop treatment by the end of the first trimester.
- **Throughout pregnancy (7%):** Rarely used beyond the first trimester.
- **For a fixed duration, e.g., 2 weeks (3%):** Duration is typically based on symptom resolution, not a set time.

10. In your clinical practice, what percentage of pregnant women report improvement in symptoms after starting Doxylamine and Pyridoxine?

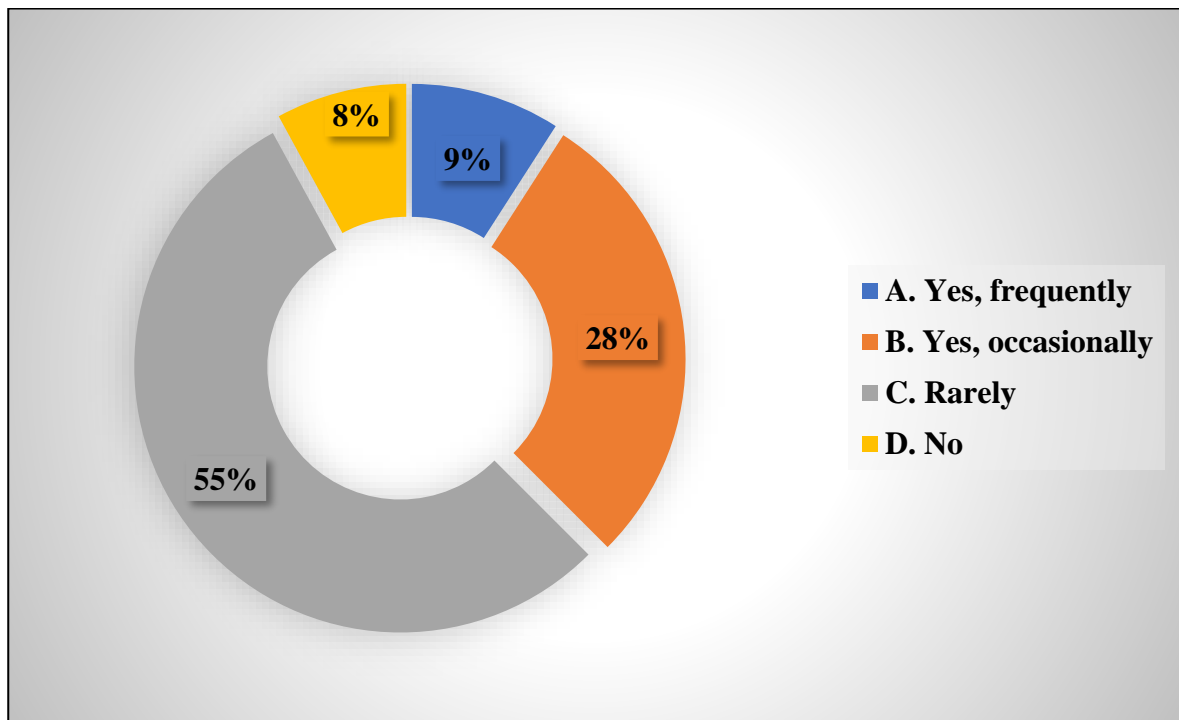
- A. Less than 25%
- B. 25-50%
- C. 51-75%
- D. More than 75%



- **Less than 25% (64%):** The majority of pregnant women report less than 25% improvement in symptoms after starting Doxylamine and Pyridoxine therapy.
- **25-50% (10%):** A smaller proportion of women report a 25-50% improvement in symptoms.
- **51-75% (1%):** Very few patients report a 51-75% improvement in symptoms.
- **More than 75% (25%):** A notable percentage of women report more than 75% improvement in symptoms.

11. In your clinical experience, have you observed any cases where Doxylamine and Pyridoxine were ineffective?

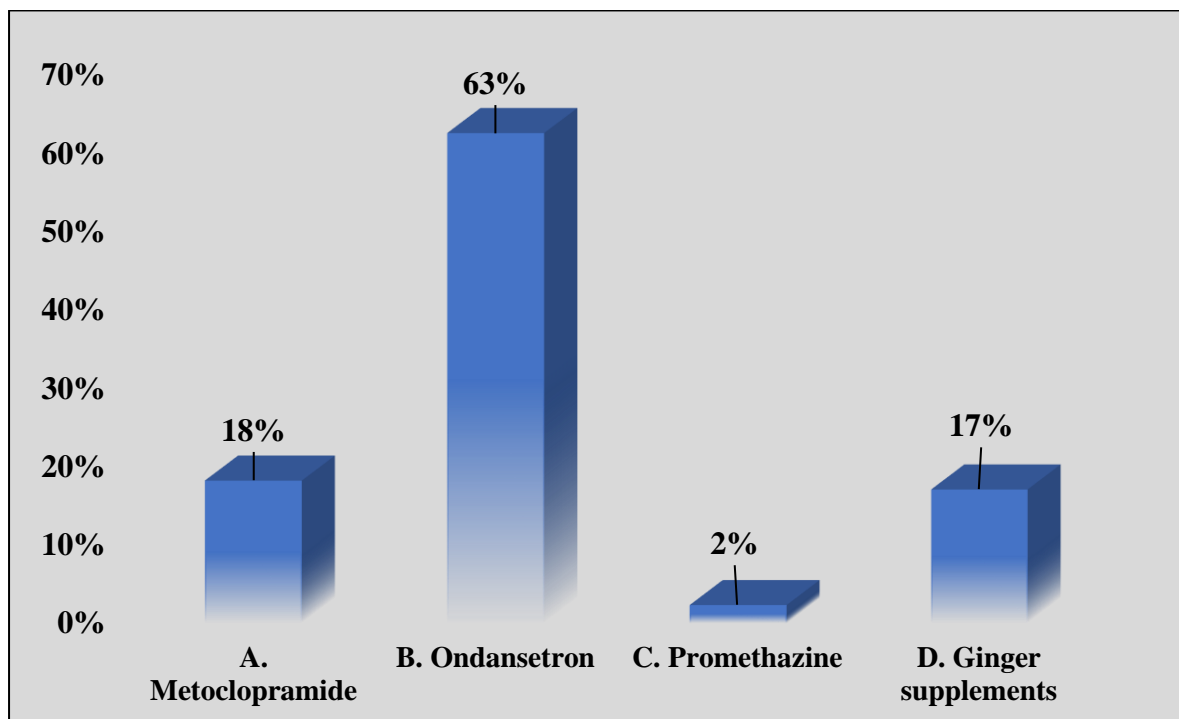
- A. Yes, frequently
- B. Yes, occasionally
- C. Rarely
- D. No



- **Yes, frequently (9%):** A small percentage of clinicians frequently observe cases where Doxylamine and Pyridoxine are ineffective in treating symptoms.
- **Yes, occasionally (28%):** A notable portion of clinicians report occasional ineffectiveness of this therapy.
- **Rarely (55%):** The majority of clinicians report rare instances of ineffectiveness.
- **No (8%):** A few clinicians have not observed any cases of ineffectiveness with Doxylamine and Pyridoxine.

12. In your clinical practice, which alternative therapy do you consider if Doxylamine and Pyridoxine fail?

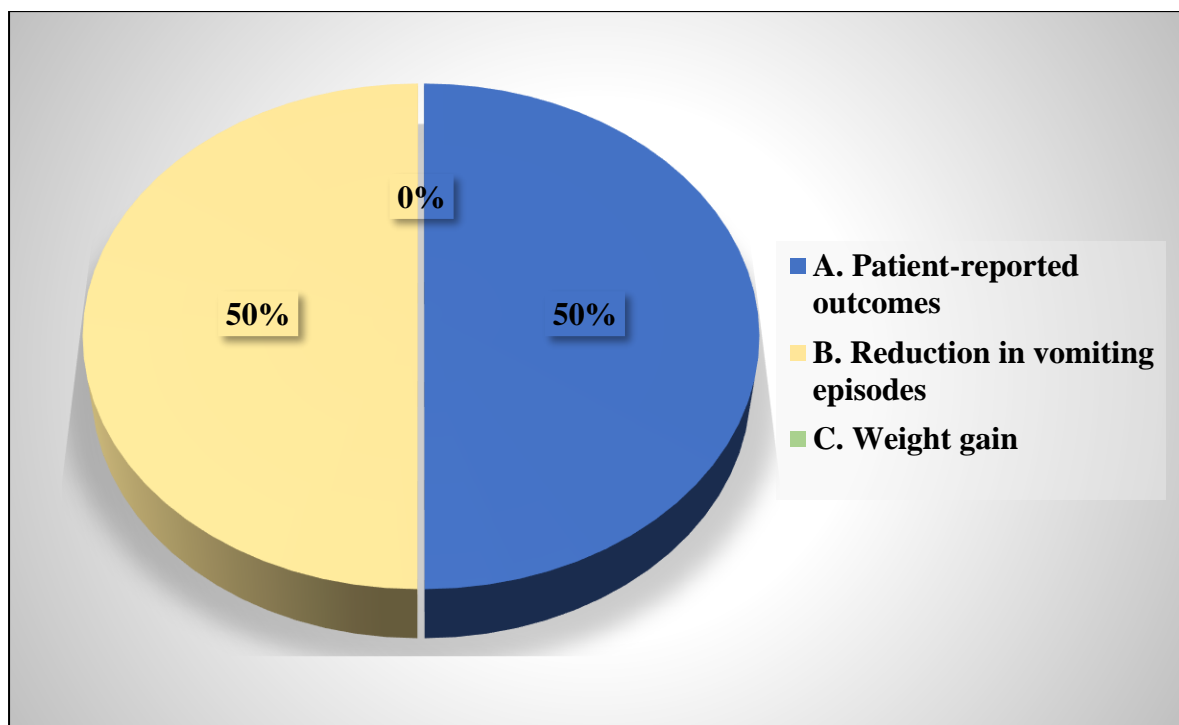
- A. Metoclopramide
- B. Ondansetron
- C. Promethazine
- D. Ginger supplements



- **Metoclopramide (18%):** Some clinicians opt for Metoclopramide as a second-line treatment.
- **Ondansetron (63%):** The majority of clinicians consider Ondansetron as an alternative therapy if Doxylamine and Pyridoxine fail.
- **Promethazine (2%):** A smaller portion of clinicians consider Promethazine when first-line therapy is ineffective.
- **Ginger supplements (17%):** Few clinicians recommend Ginger supplements as an alternative.

13. In your experience, how do you typically assess the effectiveness of Doxylamine and Pyridoxine therapy?

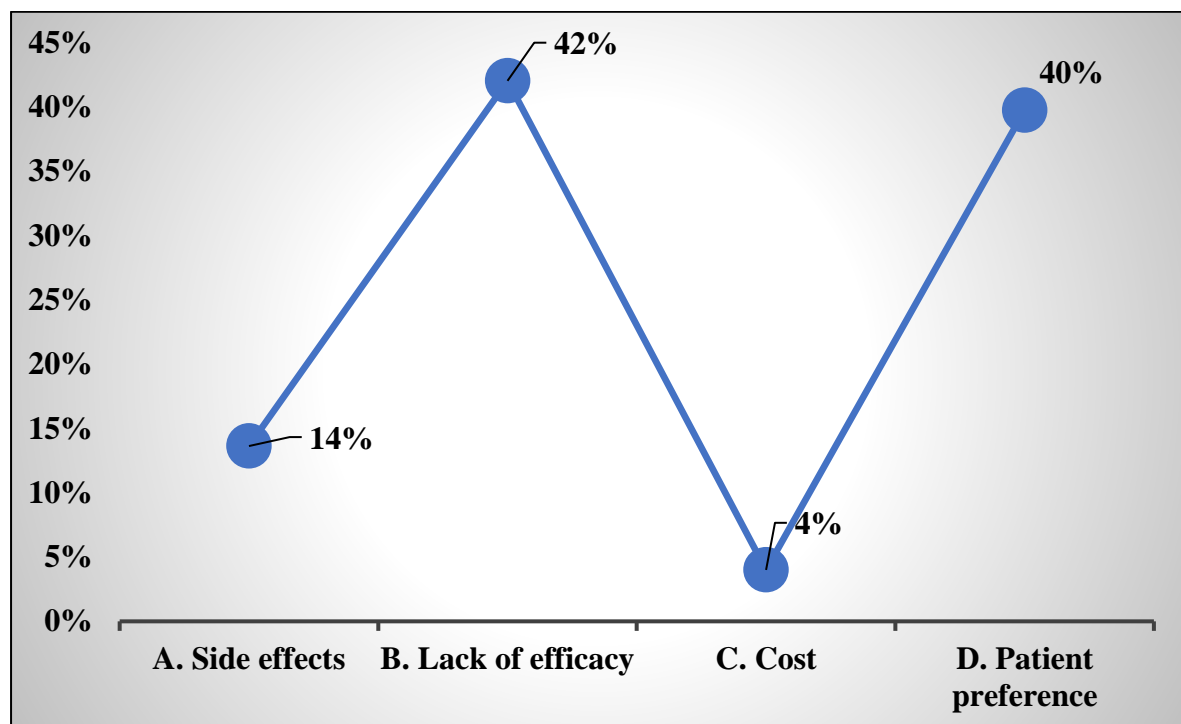
- A. Patient-reported outcomes
- B. Reduction in vomiting episodes
- C. Weight gain



- **Patient-reported outcomes (50%):** Half of the clinicians rely on patient-reported outcomes, such as subjective symptom relief, to evaluate the therapy's effectiveness.
- **Reduction in vomiting episodes (50%):** An equal percentage of clinicians assess effectiveness by tracking a decrease in vomiting episodes.
- **Weight gain (0%):** None of the clinicians consider weight gain as a measure of therapy effectiveness.

14. In your experience, what is the most common reason for discontinuation of Doxylamine and Pyridoxine therapy?

- A. Side effects
- B. Lack of efficacy
- C. Cost
- D. Patient preference

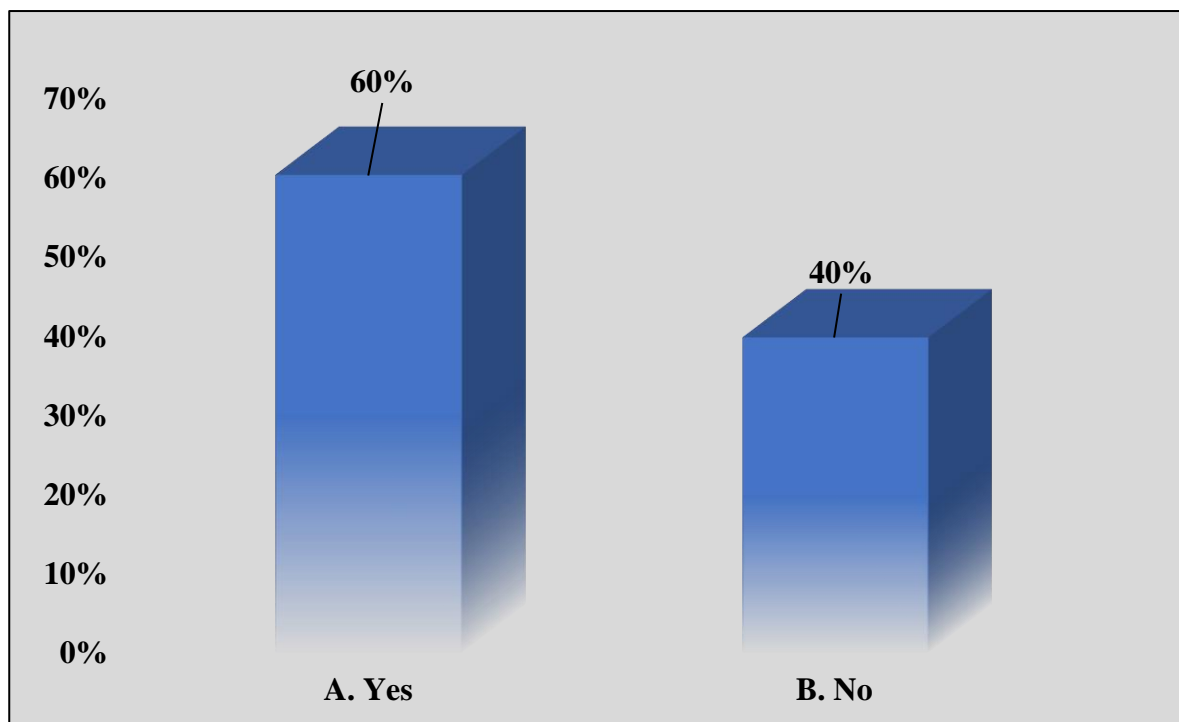


- **Side effects (14%):** A smaller percentage of patients discontinue Doxylamine and Pyridoxine therapy due to adverse effects, such as drowsiness.
- **Lack of efficacy (42%):** The most common reason for discontinuation is the lack of effectiveness in alleviating symptoms.
- **Cost (4%):** A few patients discontinue therapy due to its cost.
- **Patient preference (40%):** A significant portion of patients discontinue therapy based on personal preference.

15. In your clinical practice, do you recommend any additional supplements or dietary changes along with Doxylamine and Pyridoxine?

A. Yes

B. No

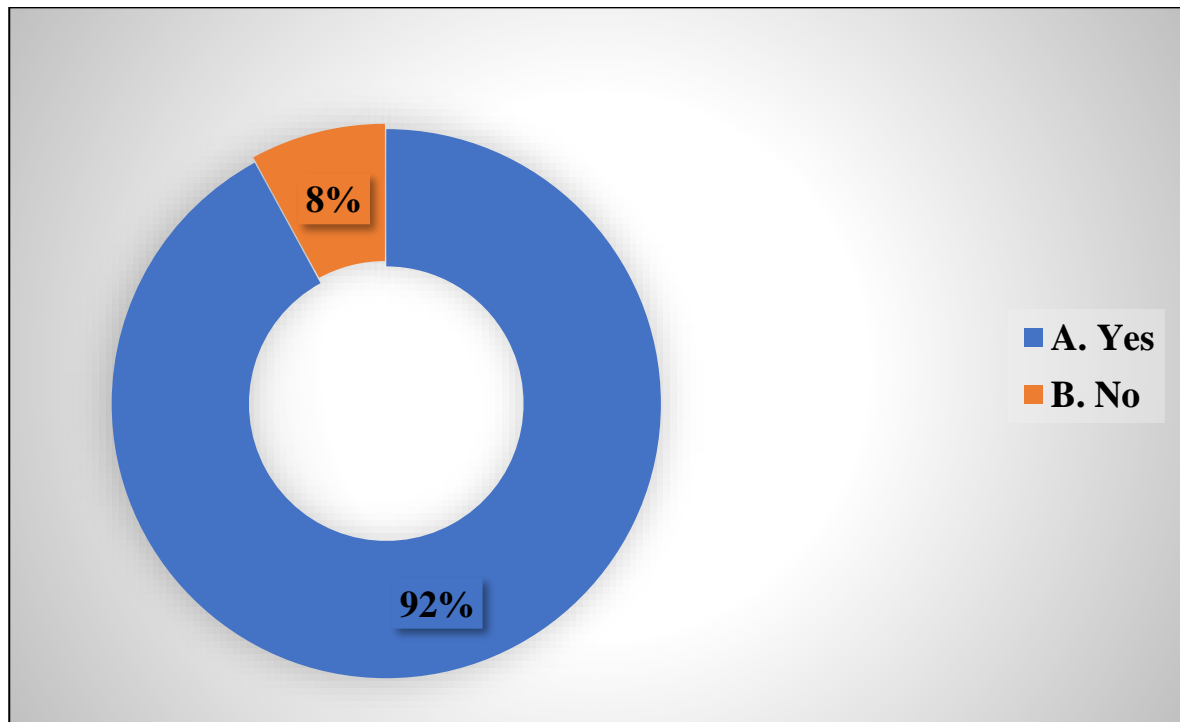


- **Yes (60%):** A significant percentage of clinicians recommend additional supplements or dietary changes along with Doxylamine and Pyridoxine to support symptom management and overall health.
- **No (40%):** A smaller portion of clinicians do not routinely suggest additional supplements or dietary adjustments in conjunction with Doxylamine and Pyridoxine therapy.

16. In your clinical practice, do you routinely recommend Doxylamine and Pyridoxine as first-line therapy for nausea and vomiting in pregnancy?

A. Yes

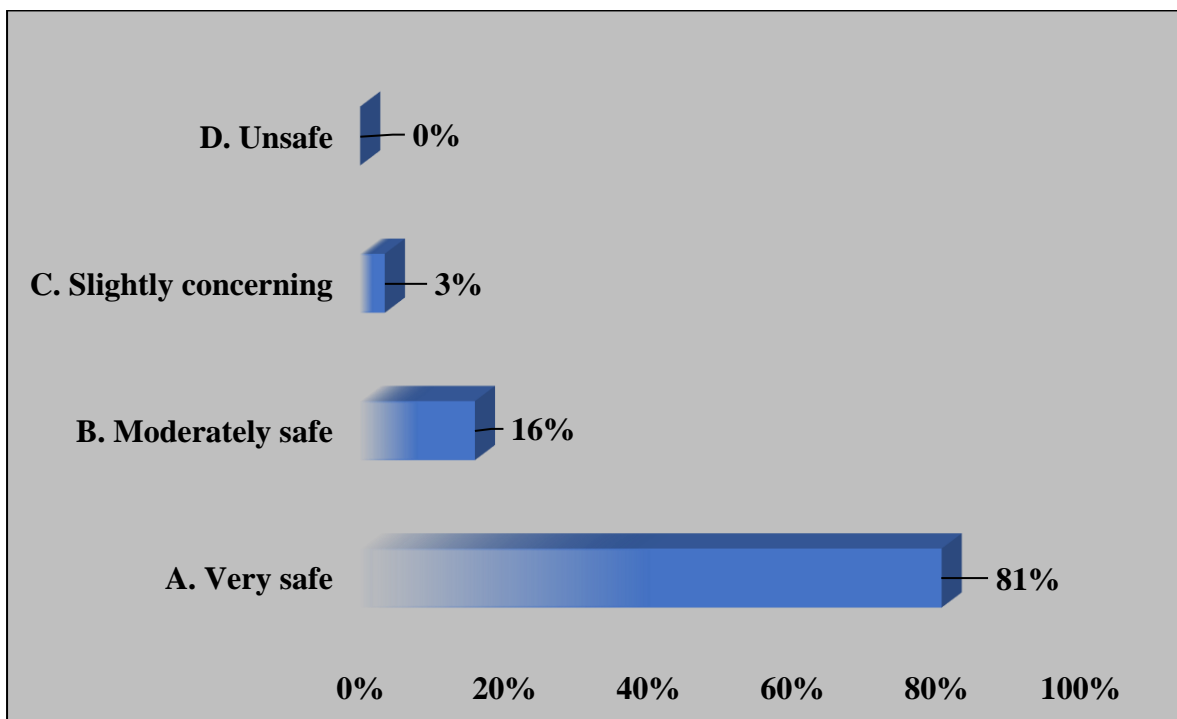
B. No



- **Yes, (92%):** The majority of clinicians routinely recommend Doxylamine and Pyridoxine as first-line therapy for nausea and vomiting in pregnancy.
- **No (8%):** A smaller percentage of clinicians do not recommend it as the first-line treatment.

17. What is your opinion on the safety profile of Doxylamine and Pyridoxine in pregnancy?

- A. Very safe
- B. Moderately safe
- C. Slightly concerning
- D. Unsafe

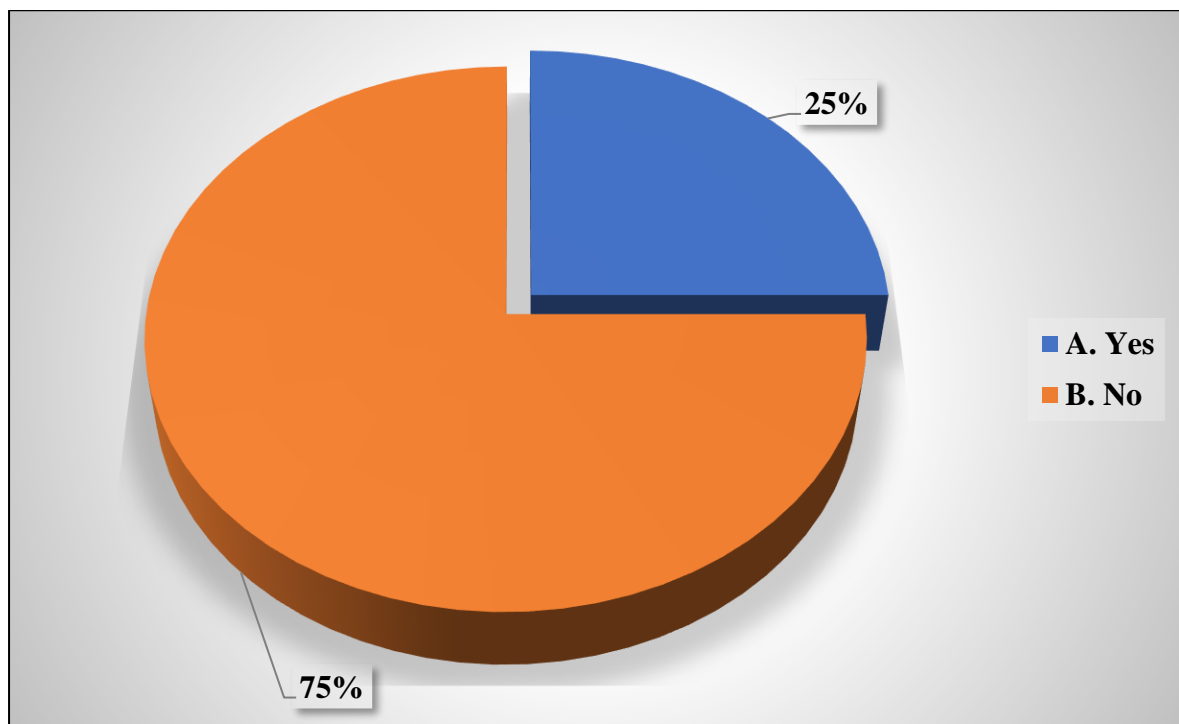


- **Very safe (81%):** The majority of clinicians consider Doxylamine and Pyridoxine very safe for use during pregnancy.
- **Moderately safe (16%):** Some clinicians view the therapy as moderately safe, supported by clinical evidence and common practice.
- **Slightly concerning (3%):** A small percentage find the safety profile slightly concerning, possibly due to patient-specific factors.
- **Unsafe (0%):** No clinicians consider Doxylamine and Pyridoxine unsafe for use in pregnancy.

18. In your clinical practice, have you encountered any adverse effects related to the fetus with Doxylamine and Pyridoxine therapy?

A. Yes

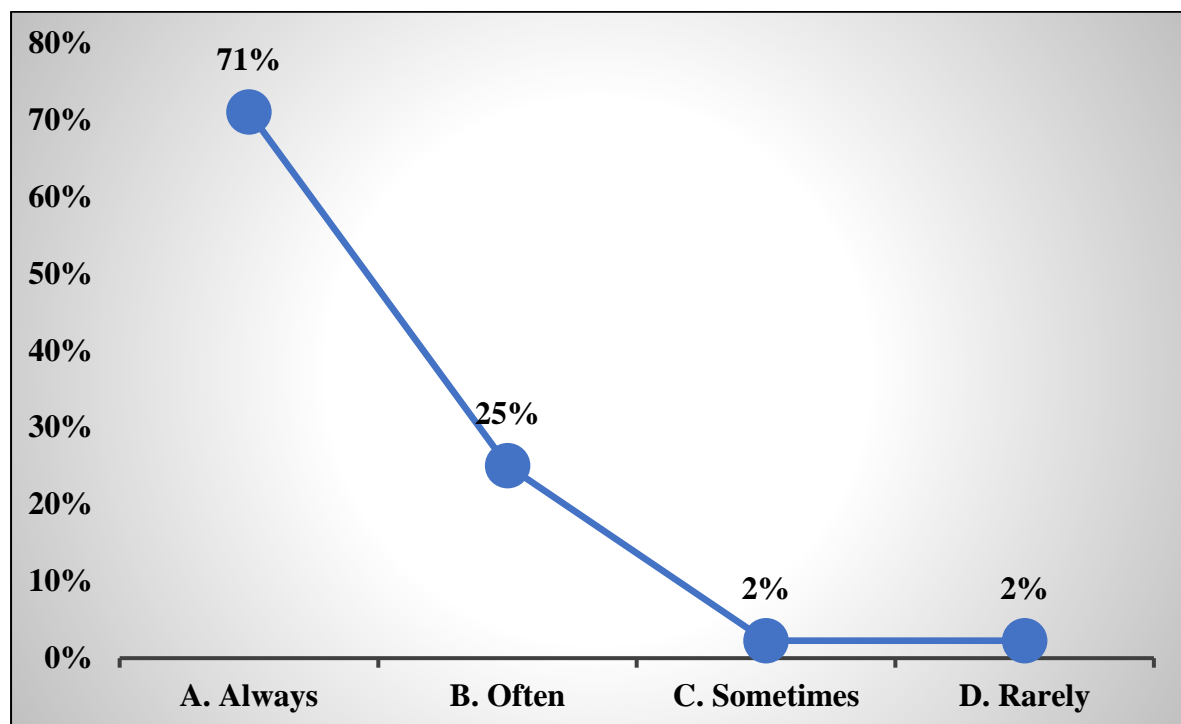
B. No



- **Yes (25%):** A smaller proportion of clinicians have encountered fetal adverse effects associated with Doxylamine and Pyridoxine therapy.
- **No (75%):** The majority of clinicians have not observed any fetal adverse effects with this therapy.

19. In your clinical practice, do you consider patient preference when prescribing Doxylamine and Pyridoxine?

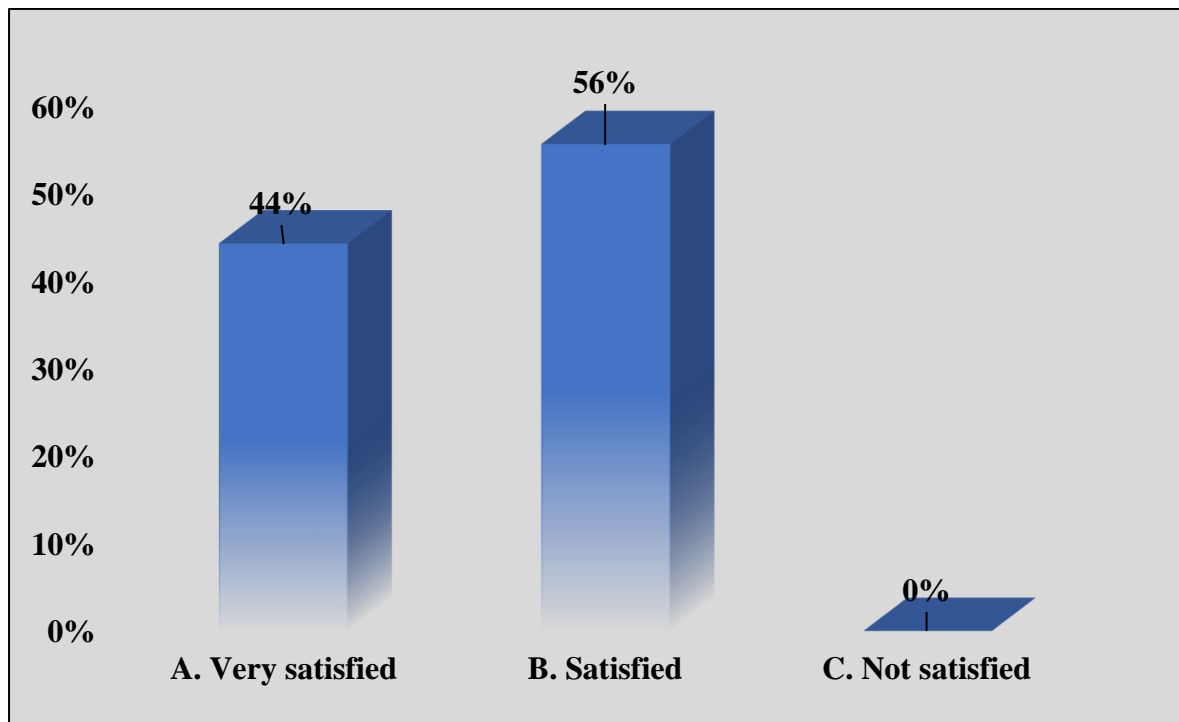
- A. Always
- B. Often
- C. Sometimes
- D. Rarely



- **Always (71%):** The majority of clinicians consistently consider patient preference when prescribing Doxylamine and Pyridoxine.
- **Often (25%):** A significant portion frequently takes patient preference into account.
- **Sometimes (2%):** A small percentage occasionally consider patient preference.
- **Rarely (2%):** Few clinicians rarely factor in patient preference in their decision-making.

20. In your clinical practice, how satisfied are your patients with Doxylamine and Pyridoxine in morning sickness during pregnancy?

- A. Very satisfied
- B. Satisfied
- C. Not satisfied



- **Very satisfied (22%):** A smaller portion of patients report significant improvement in managing GI disorders.
- **Satisfied (68%):** The majority of patients experience overall relief from their GI symptoms.
- **Not satisfied (10%):** Some patients find minimal improvement or experience mild side effects.

SUMMARY

This study provides valuable insights into the clinical practices and perspectives regarding the use of Doxylamine and Pyridoxine in managing nausea and vomiting during pregnancy (North Zone).

Awareness of Recommendations: A mere 9% of clinicians are aware that Doxylamine and Pyridoxine is the first-line treatment for managing nausea and vomiting during pregnancy according to ACOG guidelines. This suggests a significant gap in knowledge among healthcare providers about established clinical practices and evidence-based recommendations, which could lead to inconsistencies in treatment.

Prescribing Practices by Trimester:

First Trimester: The majority of clinicians (81%) prescribe Doxylamine and Pyridoxine during the first trimester to help manage early pregnancy nausea and vomiting. This indicates that it is the most commonly utilized during the initial phase of pregnancy, reflecting the need for early intervention in pregnancy-related nausea.

Second Trimester: Only 14% of clinicians continue prescribing it during the second trimester, showing a steep drop in the use of this therapy as pregnancy progresses. This may point to either concerns about its efficacy or shifting treatment strategies as pregnancy symptoms evolve.

Third Trimester & Throughout Pregnancy: Just 2% of clinicians recommend Doxylamine and Pyridoxine in the third trimester, and 3% throughout pregnancy. This highlights that the therapy is not commonly used in the later stages of pregnancy, where other treatments may be preferred or necessary.

These findings reflect variations in how clinicians approach treatment across different stages of pregnancy, with more emphasis placed on earlier management of nausea. The low awareness of standard treatment guidelines could lead to inconsistent care, making it critical to increase education and adherence to established protocols.

DISCUSSION

The findings from this study highlight substantial gaps in awareness and significant variability in clinical practice regarding the use of Doxylamine and Pyridoxine for managing nausea and vomiting during pregnancy. Despite its widespread prescription, many clinicians are unaware of the established first-line treatment recommendation from ACOG, suggesting a lack of updated clinical knowledge. Additionally, while commonly used, there are persistent concerns about both the safety and effectiveness of this therapy, with mixed results reported by clinicians. Patient satisfaction is variable; a notable proportion of patients experience less than optimal symptom relief, and side effects such as drowsiness are frequently reported, leading to a considerable number of discontinuations. This inconsistency in prescribing practices, combined with concerns about efficacy and patient adherence, underscores the need for improved clinician education and clearer guidance on when and how to appropriately use Doxylamine and Pyridoxine throughout pregnancy.

CLINICAL RECOMMENDATIONS

The growing demand for safe and effective treatments for nausea in pregnancy presents several opportunities:

Educational Campaigns: There is a significant opportunity to educate clinicians about the safety and efficacy of Doxylamine and Pyridoxine in managing nausea and vomiting during pregnancy. By providing updated, evidence-based information through workshops, webinars, and clinical training sessions, healthcare providers can gain a clearer understanding of when and how to prescribe this therapy appropriately, which may increase adoption and consistent usage in clinical practice.

Safety Data Dissemination: A key factor influencing clinician confidence in prescribing Doxylamine and Pyridoxine is the availability of robust and up-to-date safety data. By sharing research findings, clinical trials, and long-term usage outcomes, healthcare providers can be reassured about the safety of this treatment option, particularly regarding fetal safety, leading to broader acceptance and more frequent use in clinical settings.

Alternative Solutions: Given the mixed results with Doxylamine and Pyridoxine therapy, many clinicians express dissatisfaction with its effectiveness in some cases. This creates an opportunity to explore and integrate alternative therapies or combination treatments. Introducing evidence-based complementary solutions like lifestyle changes, dietary interventions, or other medications can provide more personalized and effective management options for pregnant patients experiencing nausea and vomiting.

CONSULTANT OPINION

Expert opinions on Doxylamine and Pyridoxine in pregnancy management are mixed. While many clinicians recognize its value as a first-line treatment for nausea and vomiting, concerns persist regarding its safety profile, particularly the potential risks to the fetus. Additionally, the effectiveness of the therapy varies, with some patients experiencing minimal relief, while side effects like drowsiness are common. Experts suggest that continued research is necessary to provide clearer evidence on its long-term safety and efficacy. Transparent communication between healthcare providers and patients about the risks and benefits is crucial to ensuring informed decision-making. Addressing these concerns will help optimize its use and ensure it remains a safe and effective option in clinical practice.

MARKET OPPORTUNITIES

The growing demand for safe and effective treatments for nausea in pregnancy presents several opportunities:

Educational Campaigns: Educational campaigns focused on clinicians can provide comprehensive and up-to-date information on the safety and efficacy of Doxylamine and Pyridoxine. By raising awareness about its first-line status and highlighting clinical evidence, these campaigns can help healthcare providers better understand its benefits, leading to greater adoption in clinical practice.

Safety Data Dissemination: Promoting research findings and long-term safety data can build confidence in Doxylamine and Pyridoxine's use during pregnancy. Sharing clinical trials, observational studies, and real-world evidence can reassure clinicians about its safety profile, ultimately influencing prescribing behavior.

Alternative Solutions: Given the mixed outcomes from Doxylamine and Pyridoxine therapy, there is an opportunity to explore and integrate complementary or combination treatments. By addressing clinicians' dissatisfaction with current results, alternative therapies such as Metoclopramide, Ondansetron, or natural remedies like Ginger can offer more tailored options for pregnant patients.

MARKET POSITIONING

To better position Doxylamine and Pyridoxine as a preferred therapy:

- **Highlight Proven Benefits:** Emphasize its status as a first-line therapy supported by organizations like ACOG, ensuring clinicians understand its efficacy and safety profile.
- **Target Key Demographics:** Focus marketing and education efforts on obstetricians, gynecologists, and general practitioners who frequently manage pregnant patients.
- **Leverage Patient Advocacy:** Partner with patient groups to share real-life success stories, enhancing credibility and patient awareness.
- **Foster Trust through Transparency:** Address safety concerns proactively by providing robust clinical evidence and clear communication, building confidence among clinicians and patients.

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Weston Medical Education Foundation of India

Office No: 99, 9th Floor, Kalpataru Avenue, Opp. ESIC Hospital,
Kandivali (East), Mumbai - 400101. M:9322615653. W:www.wmefi.co.in