International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Daglia A et al. Int J Reprod Contracept Obstet Gynecol. 2026 Aug;15(8):3044-3049
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20262531

Original Research Article

A prospective observational study of clinical profile, management modalities and outcomes in women undergoing second trimester induced abortions at a tertiary care centre in South Gujarat

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Received: 16 June 2026
Revised: 04 July 2026
Accepted: 08 July 2026

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ABSTRACT

Background: Second trimester abortion is associated with significantly higher maternal morbidity compared to first trimester termination despite accounting for a smaller proportion of induced abortions. Delayed diagnosis of fetal anomalies, limited access to healthcare services, and socioeconomic barriers continue to contribute to second trimester terminations in developing countries. Aim was to evaluate the clinical profile, management modalities, and outcomes of women undergoing second trimester induced abortion at a tertiary care centre.
Methods: This prospective observational study was conducted in the department of obstetrics and gynecology at a tertiary care teaching hospital in South Gujarat over a period of 12 months. Fifty women undergoing second trimester medical termination of pregnancy between 13 and 24 weeks of gestation were enrolled. All participants received mifepristone 200 mg orally followed by vaginal misoprostol 400 µg every 6 hours after 24-48 hours. Clinical profile, indications for termination, induction-abortion interval, success rates, and complications were analysed.
Results: Most participants were multigravida women belonging to rural and lower socioeconomic backgrounds. Fetal anomalies were the most common indication for termination (46%), followed by maternal medical indications (42%). The majority of patients required two to three doses of misoprostol, and 78% achieved abortion within 24 hours of induction. Complete abortion was achieved in 88% of cases. Retained products of conception were observed in 10% of patients, while major complications such as haemorrhage, uterine rupture, or infection were not encountered.
Conclusions: Medical termination using the mifepristone-misoprostol regimen is a safe, effective, and reliable method for second trimester induced abortions when performed under appropriate clinical supervision.

Keywords: Fetal anomalies, Induction-abortion interval, Maternal outcomes, Mifepristone, Misoprostol, Second trimester abortion

INTRODUCTION

Second trimester abortion, defined as termination of pregnancy between 13 and 20 weeks of gestation, contributes disproportionately to abortion-related morbidity and mortality despite accounting for a relatively smaller proportion of induced abortions worldwide.[1] Approximately 10-15% of all induced abortions occur during this gestational period; however, a substantial proportion of severe complications are associated with second trimester procedures.

Factors such as increased gestational age, larger fetal size, more extensive placental attachment, and procedural complexity contribute to the heightened risk. In India, the Medical Termination of Pregnancy (MTP) Act of 1971, along with amendments made in 2021, legally allows abortion under certain conditions.[2] Despite these legal

measures and advancements in healthcare infrastructure, many women still seek termination during their second trimester. The reasons for this include delayed recognition of pregnancy, insufficient antenatal care, limited access to healthcare facilities, financial limitations, social stigma, contraceptive failure, and late discovery of fetal anomalies.[3]

The reasons for second-trimester induced abortions vary and encompass fetal, maternal, and social factors. Fetal reasons often involve significant congenital and chromosomal abnormalities that are not compatible with life.[4] Maternal reasons include severe hypertensive disorders, heart disease, uncontrolled diabetes, infection, and cancer.[5] Additionally, pregnancies resulting from contraceptive failure or sexual assault can also lead to second-trimester terminations.

Advances in prenatal ultrasonography and antenatal screening have enhanced the early detection of fetal abnormalities, resulting in more medically indicated terminations of pregnancy. Simultaneously, medical abortion methods have evolved considerably over the years. Traditional techniques have largely been replaced by safer and more effective medical regimens involving mifepristone and misoprostol administration. Mifepristone, an antiprogestin, increases uterine sensitivity to prostaglandins and aids cervical ripening, thereby shortening the induction–abortion interval and improving success rates.[6] Misoprostol, a prostaglandin E1 analogue, induces uterine contractions and facilitates expulsion.[7] This combined regimen is widely accepted because of its effectiveness, safety, and ease of use.[8]

Despite advancements in management, second-trimester abortions still pose a higher risk of complications than first-trimester procedures.[9] Possible complications include hemorrhage, retained products of conception, uterine atony, infection, cervical injury, uterine rupture, and the need for surgical intervention. These risks are further elevated in women with a history of uterine surgery, anemia, multiple pregnancies, or associated medical conditions.[10] Understanding the demographic and clinical profiles of women undergoing second-trimester abortions is crucial for identifying healthcare gaps and enhancing reproductive services. Evaluating treatment outcomes, induction–abortion intervals, complication rates, and the need for additional interventions is essential for assessing the effectiveness of the current protocols.[11] This study was conducted to assess the clinical profiles, management strategies, and outcomes of women undergoing second-trimester induced abortions at a tertiary care center in South Gujarat.

Aims and objectives

Aim

To evaluate the clinical profile, management modalities, and outcomes of second trimester induced abortions.

Objectives

The objectives of the study were to determine the indications for second-trimester induced abortions, assess clinical outcomes including success rates and complications, and analyse the efficacy of the medical termination regimen in terms of the induction-abortion interval and the requirement for additional interventions.

METHODS

Study design and setting

This prospective observational study was conducted in the department of obstetrics and gynecology at a tertiary care teaching hospital-New Civil Hospital, Surat over a period of 12 months from February 2025 to February 2026.

Study population

A total of 50 consecutive consenting women undergoing second-trimester medical termination of pregnancy were included in the study. Women undergoing induced abortion between 13 and 24 weeks of gestation with a fetal weight of less than 500 grams and who provided written informed consent were eligible for inclusion in the study.

Women with a gestational age below 13 weeks or above 24 weeks, fetal weight of 500 grams or more, spontaneous second-trimester abortions, and those who did not provide consent were excluded from the study.

Intervention protocol

All eligible participants received a standardized medical termination regimen consisting of oral mifepristone 200 mg as a single dose, followed after 24-48 hours by vaginal misoprostol 400 µg administered every 6 hours. Misoprostol administration was continued for a maximum duration of 48 hours or until complete expulsion occurred.

Data collection

Data were collected using a structured pro forma and included demographic characteristics, obstetric history, gestational age, clinical examination findings, indications for termination, induction protocol details, induction-abortion interval, total misoprostol dose, complications, and the need for additional interventions.

Outcome measures

The primary outcome measures were the complete abortion rate, induction-abortion interval, requirement for additional interventions, post-abortal complications, and maternal outcomes. Maternal outcomes assessed included hemorrhage, retained products of conception, infection, blood transfusion requirement, intensive care unit admission, and duration of hospital stay.

Statistical analysis

Data were entered into Microsoft Excel and analyzed using descriptive statistics. All variables are presented as frequencies and percentages.

Ethical considerations

Ethical approval was obtained from the Institutional Human Ethics Research Committee prior to the commencement of the study. Written informed consent was obtained from all participants, and the confidentiality of patient information was maintained throughout the study.

RESULTS

A total of 50 women undergoing second-trimester medical termination of pregnancy were included in the study.

Demographic and obstetric characteristics

The majority of patients belonged to the 20-34 years age group. Rural women constituted 60% of the study population, and most participants belonged to the lower and upper-lower socioeconomic classes.

Table 1: Demographic characteristics of patients undergoing second trimester induced abortions.

Demographic characteristics	Number of patients	Percentage
Age (years)		
≤19	2	4.0
20-24	16	32.0
25-29	12	24.0
30-34	13	26.0
≥35	7	14.0
Area wise distribution		
Rural	30	60.0
Urban	20	40.0
Socioeconomic Status		
Upper-lower	19	38.0
Lower	15	30.0
Lower-middle	12	24.0
Upper-middle	4	8.0
Gravida		
1	12	24.0
2-3	17	34.0
4-6	18	36.0
>6	3	6.0
History of previous abortion		
0	29	58.0
1	21	42.0
Mode of last delivery		
NVD	29	58.0
LSCS	9	18.0
NA	12	24.0
Gestational age		
≤12 weeks	0	0.0
13-20 weeks	35	70.0
21-24 weeks	15	30.0
Grades of anemia		
Normal (≥11)	6	12.0
Mild anaemia (9-10.9)	31	62.0
Moderate anaemia (7-8.9)	12	24.0
Severe anaemia (<7)	1	2.0
Presence of congenital anomalies		
Congenital foetal anomalies present	23	46.0
No congenital foetal anomalies	27	54.0

Multigravida women accounted for the majority of cases, with gravida 2-6 constituting 70% of the study population. Previous normal vaginal delivery was the most common mode of prior delivery, while 18% had a history of lower-segment caesarean section.

Most patients presented between 13 and 20 weeks of gestation (70% of patients). Mild anemia was observed in 62% of patients, whereas moderate anemia was observed in 24%. Congenital fetal anomalies were identified in 46% of the pregnancies.

Indications for second trimester induced abortions

Fetal anomalies were the most common indication for second-trimester termination (46%), followed by maternal medical indications (42%). Socioeconomic factors accounted for 12% of the cases.

Table 2: Indications for second trimester induced abortions (MTP) (n=50).

Indication for second trimester induced abortions	Number of patients	Percentage
Eugenic indications (Foetal anomalies)	23	46.0
Medical indications (maternal risk factors present)	21	42.0
Socioeconomic indications (failure of contraception/unplanned pregnancy)	6	12.0
Humanitarian indications (result of rape)	0	0.0
Total	50	100.0

Medical induction and outcomes

Most women received misoprostol 24-36 hours after mifepristone administration. Most patients required two to three doses of misoprostol, indicating good responsiveness to the treatment regimen.

The induction-abortion interval was less than 24 hours in 78% of the cases. Complete abortion was achieved in 88% of the patients, whereas 12% required additional management for incomplete abortion.

Post-expulsion interventions included dilatation and evacuation in 10% of patients, blood transfusion in 10%, and hysterectomy in 2%. No further intervention was required in 78% of the cases.

Retained products of conception was the only complication observed, occurring in 10% of patients. No cases of severe hemorrhage, genital tract injury, uterine rupture, or infection were reported.

Table 3: Medical induction protocol for second trimester induced abortions.

Category	Number of patients	Percentage
Mifepristone-misoprostol interval		
<24 hours	7	14
24-36 hours	30	60.0
36-48 hours	13	26.0
Doses of misoprostol required		
2 doses	21	42.0
3 doses	16	32.0
4 doses	11	22.0
5 doses	2	4.0
Induction-abortion interval		
≤12 hours	18	36.0
13-24 hours	21	42.0
25-48 hours	11	22.0

Table 4: Outcome of second trimester induced abortions.

Category	Number of patients	Percentage
Outcome of abortion		
Complete abortion	44	88.0
Incomplete abortion	6	12.0
Interventions needed post expulsion		
Dilatation and evacuation (D and E)	5	10.0
Blood transfusion	5	10.0
Hysterotomy	1	2.0
No intervention required	39	78.0
Post abortal complications		
Hemorrhage	0	0.0
Retained products of conception (RPOC)	5	10.0
Genital tract infection	0	0.0
Lower genital tract laceration	0	0.0
Uterine synechiae	0	0.0
Uterine rupture	0	0.0

DISCUSSION

The present prospective observational study assessed the clinical profile, indications, management modalities, and outcomes of women undergoing second-trimester induced abortions at a tertiary care center in South Gujarat. The findings indicate that the mifepristone-misoprostol combination is a reliable and safe method for second-trimester abortion, demonstrating a high success rate with minimal complications.

The majority of participants were multigravida women from rural areas with lower socioeconomic backgrounds. This demographic pattern is consistent with previous Indian research, suggesting that women with prior pregnancies and limited healthcare access are more likely to seek second-trimester terminations. Factors such as delayed pregnancy recognition, lack of regular antenatal care, financial constraints, and limited access to specialized diagnostic services may contribute to late presentation in these women.[12]

Most participants were between 13 and 20 weeks' gestation, coinciding with the timing of routine anomaly scans. The increased availability and use of antenatal ultrasonography have significantly enhanced the early detection of congenital fetal anomalies, leading to more medically indicated second-trimester terminations of pregnancy.[13] In this study, fetal anomalies were the primary reason for termination, closely followed by maternal conditions. These findings align with existing literature, where congenital anomalies and maternal risk factors are the leading causes of second-trimester abortion in tertiary care settings.[14]

Anemia was a common clinical observation among the participants going for second trimester induced abortions, with most experiencing mild-to-moderate anemia. This reflects ongoing issues of nutritional deficiency and inadequate antenatal optimization in pregnant women in developing regions.[15] However, severe anemia and major hematological abnormalities were relatively rare, indicating that most patients were clinically stable at presentation.

The medical induction protocol used in this study was highly effective. Most patients required only two to three doses of misoprostol, and the majority achieved abortion within 24 hours of induction. The complete abortion rate of 88% observed in this study is comparable to the rates reported in previous studies evaluating combined mifepristone-misoprostol regimens.[16] Pretreatment with mifepristone enhances cervical ripening and uterine sensitivity to prostaglandins, thereby reducing the induction-abortion interval and improving overall success rates. The safety profile of this regimen was favorable. Retained products of conception were the only notable complication encountered, occurring in a small proportion of the patients. No cases of severe hemorrhage, uterine rupture, genital tract trauma, or sepsis were observed.

The low complication rate and minimal need for surgical intervention further support the safety and effectiveness of medical management when administered under appropriate supervision in tertiary care settings.[17] This study underscores the importance of standardized institutional protocols, timely prenatal screening, and comprehensive counselling for improving maternal outcomes. Early identification of fetal anomalies and prompt referral to tertiary care centers can reduce delays in management and enhance patient safety.

Despite its strengths, this study has certain limitations. The relatively small sample size and single-center design may limit the generalizability of the findings. Additionally, long-term reproductive and psychological outcomes were not evaluated. Further multicenter studies with larger populations are required to validate these observations and optimize second-trimester abortion protocols.

CONCLUSION

The present study demonstrates that the mifepristone–misoprostol regimen for second-trimester induced abortions is a safe, effective, and reliable method for terminating pregnancies when performed under appropriate medical supervision. The majority of women undergoing these procedures were young, from rural areas, and belonged to lower socioeconomic groups, highlighting how limited healthcare access, delayed antenatal screening, and socioeconomic factors contribute to late pregnancy terminations.

A significant proportion of cases involved multiparous women, indicating that higher parity and previous reproductive experiences may have influenced the decision to terminate. Overall, the study's findings support the mifepristone-misoprostol combination as a highly effective and safe option for second-trimester induced abortions, provided that the procedure is conducted in a well-equipped healthcare facility with proper clinical oversight. Enhancing antenatal screening programs, improving access to early anomaly detection, advancing reproductive health education, and promoting the early use of safe abortion services could help reduce the need for second-trimester terminations and improve overall maternal health outcomes in the future.

ACKNOWLEDGEMENTS

The authors would like to thank the department of obstetrics and gynecology and all the staff members involved in patient care and data collection at the tertiary care centre in south Gujarat for their support and cooperation during the study. We also acknowledge all participants included in this study for their valuable contribution.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Daglia A, Shrivastava A, Sabuwala M, Poshtiwala B. A prospective observational study of clinical profile, management modalities and outcomes in women undergoing second trimester induced abortions at a tertiary care centre in South Gujarat. Int J Reprod Contracept Obstet Gynecol 2026;15:3044-9.