Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/gb8sr476

A RETROSPECTIVE STUDY TO EVALUATE THE OUTCOMES AND INDUCTION–ABORTION INTERVAL IN PATIENTS WHO UNDERWENT SECOND-TRIMESTER MEDICAL TERMINATION OF PREGNANCY AT A TERTIARY CARE CENTER

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ABSTRACT

Background

Second-trimester abortion, defined as termination between 13 and 28 weeks of gestation, is an essential aspect of women's reproductive healthcare. It is often indicated due to fetal anomalies, intrauterine demise, or maternal health concerns. Compared to first-trimester procedures, second-trimester abortions carry a higher risk of complications and require effective, evidence-based management strategies.

Objective

To evaluate the clinical outcomes and induction–abortion interval in patients undergoing second-trimester medical termination of pregnancy using various induction methods at a tertiary care center.

Methods

This retrospective hospital-based study was conducted over 18 months from October 2023 to March 2025 in the Department of Obstetrics and Gynaecology at Government General Hospital, Vijayawada. A total of 107 patients undergoing second-trimester medical termination (13–28 weeks) were included. Of these, 67 cases were managed using extra amniotic Normal saline insertion via Foley catheter followed by misoprostol, and 40 cases received a combination of mifepristone and misoprostol. Data on indications, induction methods, and outcomes were extracted from hospital records and analyzed.

Results

The most common indication for second-trimester termination was congenital anomalies (50.4%), followed by intra uterine death (26.7%) Failed contraception (14%) unmarried status (9.3%). The extra amniotic method demonstrated high success with acceptable induction-abortion intervals and low complication rates. Mifepristone-misoprostol showed moderate induction-to-expulsion time. Retained products requiring evacuation occurred in 11.2% cases.

Conclusion

Congenital anomalies remain the leading cause of second-trimester medical termination. With appropriate induction methods, second-trimester abortion can be effectively and safely managed. The

findings underscore the importance of timely diagnosis and standardized protocols to reduce associated morbidity. The extra amniotic method remains a reliable and cost-effective approach for second-trimester MTP, particularly in low-resource settings. Broader training and advanced protocols are recommended to enhance outcomes.

Keywords: Second-Trimester Abortion, Medical Termination, Extra Amniotic, Mifepristone, Misoprostol, Normal Saline.

INTRODUCTION

Second-trimester abortions, defined as terminations between 13 to 28 weeks of gestation, contribute significantly to maternal morbidity and, if not conducted under safe conditions, can be a major contributor to maternal mortality. While first-trimester abortions constitute the majority of induced terminations worldwide, second-trimester procedures account for a substantial proportion of abortion-related complications due to their technical complexity, higher risk of hemorrhage, and increased likelihood of infection. The physiological changes in pregnancy during this period, along with advanced fetal development, demand skilled intervention and standardized protocols to ensure safety. Indications for second-trimester termination are diverse, ranging from fetal anomalies and obstetric complications to socio-cultural and economic factors such as unmarried status and contraceptive failure. In high-resource countries, congenital anomalies detected during routine anomaly scans form the bulk of indications. In contrast, in low- and middle-income countries, late detection of anomalies, lack of early antenatal registration, and limited access to diagnostic facilities mean that social and medical causes often overlap.

Globally, the World Health Organization (WHO) and the International Federation of Gynaecology and Obstetrics (FIGO) advocate for evidence-based, safe, and accessible MTP practices[1,2]. The 2022 WHO guidelines emphasize that second-trimester abortions should be carried out using either pharmacological methods (mifepristone followed by misoprostol) or mechanical/combined techniques (e.g., Foley's catheter with or without misoprostol) based on availability and provider skill[1]. The mechanical methods facilitate gradual cervical dilation, reduce the need for surgical intervention, and may be particularly useful in settings where advanced pharmacological agents are not consistently available.

India's MTP Act permits second-trimester abortion under specific medical, fetal, and social conditions, reflecting the need for early prenatal diagnostics, patient counseling, and structured hospital-based protocols. Despite these provisions, many women still present late in pregnancy, underlining the importance of strengthening primary healthcare systems and referral mechanisms.

This study seeks to analyze the medical indications, procedural outcomes, and induction–abortion intervals in second-trimester abortions at a tertiary care centre, while comparing the efficacy and safety profiles of extra-amniotic Normal Saline plus misoprostol versus the mifepristone–misoprostol combination. By contextualizing the results within the framework of national guidelines and global literature, this research aims to provide evidence that may inform policy, enhance clinical protocols, and improve patient outcomes.

MATERIALS AND METHODS

This retrospective hospital-based study was carried out at the Department of Obstetrics and Gynaecology, Government General Hospital, Vijayawada, over 18 months. A total of 107 patients who underwent second-trimester MTP (13–28 weeks gestation) were included.

Inclusion Criteria

- Gestational age between 13 and 28 weeks
- Consent for treatment and study inclusion

Exclusion Criteria:
- Gestation below 12 weeks
- Withdrawal of consent or incomplete records

Intervention Methods
Extra amniotic Group
67 cases received extra amniotic Normal Saline instilled via Foley's catheter, followed by misoprostol 200 mcg vaginally every 4 hours

Pharmacologic Group
40 cases received mifepristone 200 mg orally, followed 24–48 hours later by misoprostol 400 mcg vaginally every 3 hours (per WHO 2022 protocol).

Outcome Measures
- Induction-to-abortion interval.
- Complications (e.g., hemorrhage, infection, retained placenta, Rupture Uterus).
- Need for surgical evacuation.

Statistical analysis was done using descriptive statistics for frequency and interval measurements.

RESULTS
The patient population reflected diverse indications, with fetal anomalies accounting for the majority. Most terminations were successful using the extra amniotic method.

POG	Number of Cases	Percentage
13 weeks to 20 weeks	69	64.5%
>20weeks	38	35.5%

Table 1: Distribution of cases By Period of Gestation

Indication	Number of Cases	Percentage
Fetal Anomalies	54	50.4%
Intrauterine death	28	26.1%
Failed contraception	15	14%
Unmarried status	10	9.3%

Table 2: Indications for Termination

Time Interval	Number of Cases	Percentage
24hrs	2	3%
>24 hrs to 48hrs	19	28%
>48hrs to 72 hrs	46	68**%**

Table 3: Induction Abortion interval for Extra amniotic Group

Time Interval	Number of Cases	Percentage
24hrs	0	0**%**
>24 to 48 hrs.	4	10**%**
>48hrs to 72 hrs.	36	90**%**

Table 4: Induction Abortion interval for pharmacologic group

Induction-to-Abortion Interval

- Average interval (Extra amniotic+ miso group): 53.8 hrs
- Average interval (mifepristone + misoprostol group): 68hrs

Uterine Scar Status	Number of Cases	Percentage
Scarred Uterus	28	26.2%
Non-Scarred Uterus	79	73.8%
Table 5: Distribution of cases by uterine scar status		

Complication	Number of Cases	Percentage
Retained Products of conception	12	11.2%
Febrile morbidity	3	2.8%
Hemorrhage	2	1.8%
Rupture Uterus	1	0.9%
Table 6: Complications Observed		

Group	Number of Cases	Percentage
Extra amniotic Group	2	2.99%
Pharmacologic Group	10	25 %
Table 7: Retained Products of conception Distribution in Each group		

Group	Number of Cases	Percentage
Extra amniotic Group	1	1.49%
Pharmacologic Group	2	5%
Table 8: Febrile morbidity distribution in Each group		

Group	Number of Cases	Percentage
Extra amniotic Group	0	0%
Pharmacologic Group	2	5%
Hemorrhage Distribution in Each Group		

Group	Number of Cases	Percentage
Extra amniotic Group	0	0%
Pharmacologic Group	1	2.5%
Table 9: Rupture Uterus Distribution in Each Group		

Despite minor complications, the overall success rate exceeded 95%, consistent with WHO guidance.

DISCUSSION

This study highlights the predominance of fetal anomalies as a leading indication for second-trimester MTP, similar to findings by Singh et al.[3] and Chawla et al.[4] The Extra amniotic method using Normal Saline, although considered traditional, continues to be widely used in resource-limited settings for its safety, affordability, and Simplicity [5-7]

WHO (2022) and FIGO guidelines now favour misoprostol with extra amniotic method combination due to faster induction-expulsion interval and higher complete abortion rates[1,8]

The high success rate with misoprostol following Foley's insertion reinforces its effectiveness. The Extra amniotic methods showed shorter induction time and fewer complications compared to the

pharmacological group[9,10] Future protocols should advocate for combined strategies to reduce maternal fatigue and hospital stay.[11,12]

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Comparative Findings with Other Studies:

Several studies have reported comparable findings regarding induction–abortion intervals and complication rates. Dabash et al.[11] reported a mean induction–abortion interval of approximately 65 hours with mifepristone–misoprostol, which closely aligns with our pharmacologic group (68 hours). In contrast, our extra-amniotic group achieved 53.8 hours, similar to Ashok and Templeton[5], who reported 52 hours using combined mechanical and pharmacologic approaches.

Ngoc et al.[10] found higher misoprostol doses produced faster expulsion but more gastrointestinal side effects. Our data supports this, as the extra-amniotic group had fewer complications. Singh[3] also observed that mechanical methods reduced febrile morbidity and hemorrhage compared to pharmacologic regimens—findings consistent with ours, where febrile morbidity and hemorrhage were mostly in the pharmacologic group.

Winikoff and Sheldon[13] noted that the global shift toward pharmacologic methods should not overshadow the advantages of extra-amniotic methods in low-resource settings. Chawla et al.[4] also showed >95% completion rates with Foley catheter and misoprostol, which matches our outcomes.

IMPLICATIONS

The evidence suggests that while pharmacologic methods remain the gold standard in many tertiary hospitals, extra-amniotic methods offer a cost-effective, low-complication alternative for settings with limited resources or restricted drug access.

CONCLUSION

Extra-amniotic normal saline followed by misoprostol offers a safe, effective, and affordable option for second-trimester MTP. Early diagnosis, patient-centered counselling, and adherence to standardized, evidence-based protocols—especially in low-resource settings—are key to optimizing outcomes and minimizing complications.

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