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A Retrospective Study on the Utilization of Medical Method of Abortion (MMA) and the Reasons for Seeking Abortion Among Women at a Tertiary Care Hospital

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ABSTRACT

Background: The Medical Method of Abortion (MMA) is a cornerstone of safe abortion care. Understanding its real-world utilisation and the reasons driving abortion-seeking behaviour in tertiary care settings is crucial for service improvement.

Methods: A retrospective, cross-sectional, record-based study was conducted at a tertiary care hospital over two years. Data from 482 eligible case records of women who underwent induced abortion were analysed using a structured proforma. Descriptive statistics and Chi-square tests were applied.

Results: The prevalence of MMA utilisation was 57.7%. Its use was strongly associated with lower gestational age, employed in 87.9% of cases at ≤7 weeks versus 12.1% at ≥10 weeks ($p<0.001$). Nulliparous women opted for MMA more frequently than multiparous women (71.7% vs. 48.1%, $p<0.001$). The leading documented reasons for abortion were contraceptive failure (35.7%), socio-economic constraints (28.0%), and completion of desired family size (20.1%). The majority of MMA procedures (90.6%) were successfully completed without surgical intervention.

Conclusion: MMA is the predominant abortion method in early pregnancy at this tertiary centre, with utilisation dictated by evidence-based gestational age limits. Contraceptive failure remains the primary driver for abortion, highlighting a critical gap in preventive reproductive healthcare. Findings support the need for integrated services that combine safe abortion with robust contraceptive counselling to address unmet family planning needs.

Keywords: Medical abortion, Mifepristone, Misoprostol, Termination of pregnancy, Contraceptive failure, Reproductive health services.

Introduction

Unintended pregnancy continues to be a major issue for reproductive health around the world, and abortion is a common result. The Medical Termination of Pregnancy (MTP) Act in India sets the rules for abortion services, and the Medical Method of Abortion (MMA) using mifepristone and misoprostol has changed how care is given (1). MMA provides a non-invasive, private, and frequently more accessible alternative to surgical interventions, especially during early gestation (2). Its growing use in healthcare systems is meant to make things safer, give women more freedom, and make it easier for them to get care.

Although it has benefits and is included in national guidelines, the actual use of MMA in clinical settings, especially in tertiary care hospitals, is not fully documented. Tertiary centers frequently handle more intricate cases, encompassing referrals and subsequent presentations, which may affect the selection of methodology (3). To assess service delivery, training needs, and policy implementation, it is essential to comprehend the circumstances and timing of MMA utilization in these contexts.

Additionally, the choice to obtain an abortion is multifactorial, shaped by an intricate interaction of socioeconomic, health-related, and individual factors. Some common reasons given in different situations are problems with birth control, not having enough money, worries about the health of the mother or fetus, and problems in the relationship (4). However, the specific reasons why women go to a tertiary care hospital may be different, such as needing care for an advanced gestational age or pre-existing medical problems (5).

A retrospective analysis of hospital records offers a significant opportunity to investigate these real-world patterns without disrupting patient care. We can find patterns in the use of MMA by looking at past cases, such as limits on gestational age, success rates, and demographic factors. We can also make a list of the reasons given for abortion. Healthcare providers and policymakers must know this information in order to better serve women who want abortion care, tailor counseling, and meet their needs. This study seeks to examine the use of MMA and the motivations for seeking abortion among women at a tertiary care hospital.

Objectives

Primary Objective:

To determine the prevalence (proportion) of Medical Method of Abortion (MMA) utilization among women undergoing induced abortion at a tertiary care hospital.

Secondary Objectives:

1. To describe the socio-demographic and obstetric profile of the study population.
2. To document the distribution of gestational age at the time of abortion and its association with the method chosen (MMA vs. surgical).
3. To categorize and quantify the documented reasons for seeking termination of pregnancy.
4. To explore associations between the method of abortion (MMA) and factors such as parity and referral status.

Materials and Methods

Study Design: A retrospective, cross-sectional, record-based study was conducted.

Study Setting: The study was conducted in the Department of Obstetrics and Gynaecology at a tertiary care teaching hospital, which serves as a major referral centre for the region.

Study Duration: The study reviewed all eligible cases over a period of three years. This period was selected to obtain a sufficient sample size for a robust point-prevalence estimate.

Study Population: The study population comprised all women who underwent an induced termination of pregnancy (medical or surgical) under the MTP Act at the study hospital during the defined period.

Inclusion Criteria:

1. All case records of women who underwent induced abortion (MMA or surgical) at the hospital during the study period.
2. Procedures performed within the legal gestational limit as per the prevailing MTP Act.

Exclusion Criteria:

1. Records where the primary outcome (method of abortion) or key variables (primary reason, gestational age) were not documented.
2. Cases managed for spontaneous miscarriage (complete, incomplete, missed) without any intervention for induction.
3. Cases where the termination procedure was conducted at another facility.

Sample Size and Sampling: A census (complete enumeration) sampling method was employed. **Two hundred** case records meeting the inclusion criteria during the two-year study period constituted the sample, as the aim was to capture the complete cross-section of abortion services during that time frame.

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Data Collection Tool and Technique:

1. **Data Source:** Data was extracted from two primary sources: the inpatient case files (discharge summaries) from the Medical Records Department (MRD) and the dedicated procedure register of the Obstetrics & Gynaecology department.
2. **Data Extraction Tool:** A structured and pilot-tested data abstraction form was used. It captured:
   - **Part I:** Socio-demographic details (Age, Parity, Residence, Education).
   - **Part II:** Clinical & obstetric details (Gestational age at termination, Past obstetric history, Referral status).
   - **Part III:** Abortion episode details (Method of abortion: MMA/Surgical, Primary reason for MTP as per case notes).
   - **Part IV:** Outcome data relevant to MMA (Documentation of successful completion).
3. **Procedure:**
   - Prior approval was obtained from the Institutional Human Ethics Committee (IIHEC) and necessary departmental permissions were secured.
   - A list of potential cases was generated using relevant diagnostic and procedure codes from the hospital database.
   - Two researchers independently screened the retrieved files against the eligibility criteria. Data from eligible records was transcribed onto the abstraction form.
   - Patient confidentiality was maintained by using a unique study identification number. No personal identifiers were recorded on the analysis dataset.

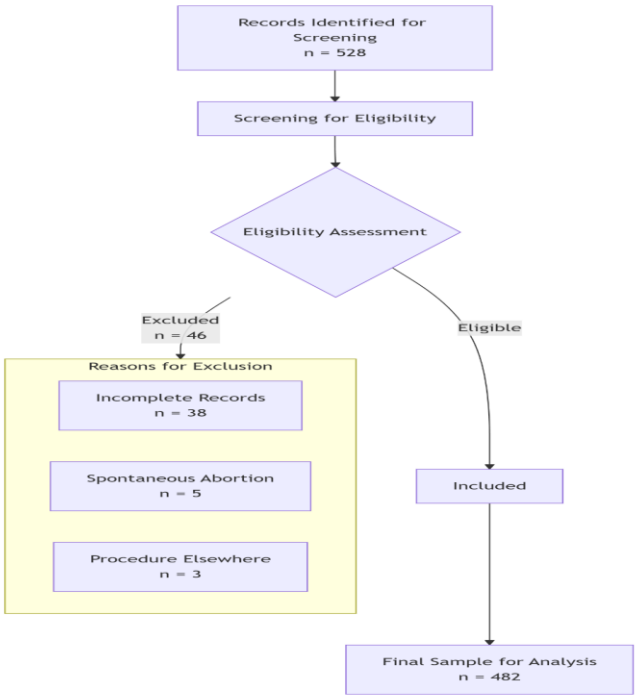
Data Management and Statistical Analysis: Data from the abstraction forms were entered into a Microsoft Excel spreadsheet, cleaned, and coded. Statistical analysis was performed using SPSS software version **25.0**. Categorical variables were summarized as frequencies and percentages (n, %). Continuous variables were presented as mean ± standard deviation or median with interquartile range (IQR) based on normality of distribution (assessed using Shapiro-Wilk test). The prevalence of MMA utilization was calculated as a proportion with a 95% confidence interval (CI). Associations between categorical variables (e.g., abortion method and gestational age category, parity) were analyzed using the Chi-square test or Fisher's exact test, as appropriate. A **p-value of < 0.05** was considered statistically significant.

Ethical Considerations: As a retrospective study involving anonymized data from records, the requirement for individual informed consent was waived by the IIHEC. The study adhered to the principles of confidentiality as per the Declaration of Helsinki. Data was accessed only for research purposes and reported in aggregate form.

Results

A total of 528 case records for induced abortion were identified during the two-year study period. After applying the exclusion criteria, **482 records** were included for the final analysis, yielding a response rate of 91.3%. The flow of participants is detailed in Figure 1.

Figure 1: Flowchart of Study Participant Selection



The mean age of the women was 26.4 ± 4.8 years (range: 18-42 years). Nearly two-thirds (64.1%) were in the age group of 21-30 years. A majority were multiparous (had at least one living child) and hailed from urban areas. The detailed profile is presented in Table 1.

Table 1: Socio-demographic and Obstetric Characteristics of Women Undergoing Induced Abortion (N=482)

Characteristic	Category	Frequency (n)	Percentage (%)
Age (in years)	≤20	58	12.0
	21 – 25	172	35.7
	26 – 30	137	28.4
	>30	115	23.9
Parity	Nulliparous (0)	127	26.3
	Primiparous (1)	193	40.0
	Multiparous (≥2)	162	33.6
Residence	Urban	312	64.7
	Rural	170	35.3
Education Status	Illiterate	28	5.8
	Schooling	289	60.0
	Graduate & above	165	34.2
Gestational Age (Weeks)	≤7	198	41.1
	8 – 9	185	38.4
	≥10	99	20.5

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Referral Status	Direct Walk-in	325	67.4
	Referred from other facility	157	32.6

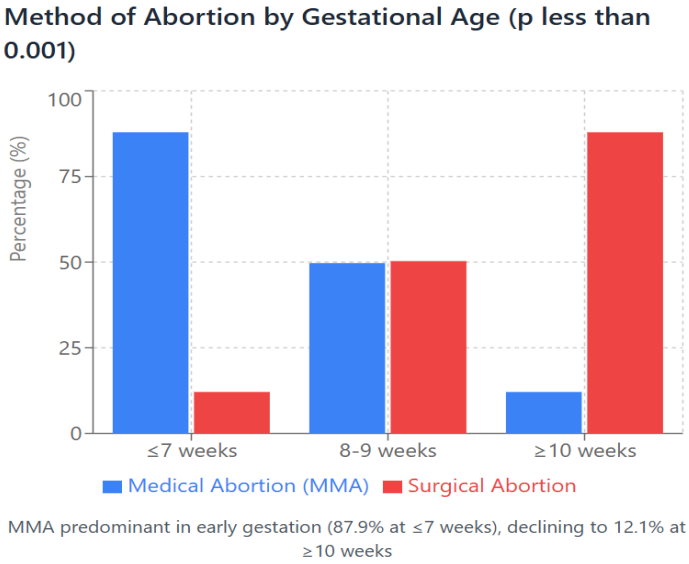
Out of 482 abortions, **278 were performed using MMA**, giving a prevalence of **57.7%** (95% CI: 53.2% - 62.1%). The remaining 204 cases (42.3%) underwent surgical abortion (MVA or D&E).

The utilization of MMA showed a significant association with gestational age. As shown in Table 2, MMA was the predominant method (87.9%) in early gestation (≤7 weeks), but its use declined sharply as gestation advanced.

Table 2: Association between Method of Abortion and Gestational Age (N=482)

Gestational Age	Medical Abortion (MMA) n (%)	Surgical Abortion n (%)	Total n	p-value
≤ 7 weeks	174 (87.9%)	24 (12.1%)	198	**<0.001**
8 – 9 weeks	92 (49.7%)	93 (50.3%)	185	
≥ 10 weeks	12 (12.1%)	87 (87.9%)	99	
Total	278 (57.7%)	204 (42.3%)	482	

(Chi-square test applied), p-value < 0.05 – Statistically significant



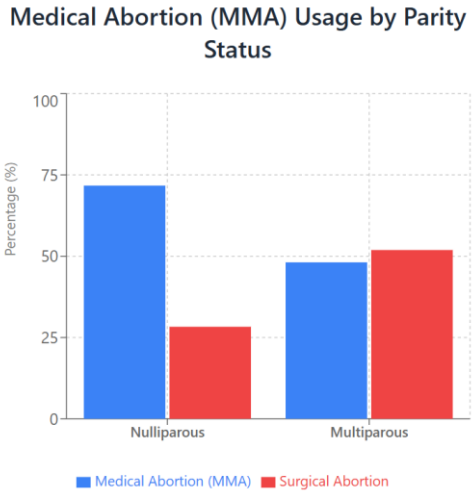
The most frequently documented reason for seeking abortion was **contraceptive failure** (35.7%), followed by **socio-economic constraints** (28.0%) and **completion of desired family size** (20.1%). Fetal anomalies and maternal health indications together accounted for 11.2% of cases. The distribution is shown in Table 3.

Table 3: Documented Reasons for Seeking Induced Abortion (N=482)*

Primary Documented Reason	Frequency (n)	Percentage (%)
Contraceptive Failure	172	35.7
Socio-economic Constraints	135	28.0
Completion of Desired Family Size	97	20.1
Fetal Anomaly / Poor Prenatal Diagnosis	35	7.3
Maternal Health Indication	19	3.9
Unmarried / Relationship Issue	15	3.1
Others (Rape, Incest)	9	1.9
Total	**482**	**100.0**

*Some cases had more than one reason documented; the primary reason as per case notes was considered.

On further analysis, parity was also found to be significantly associated with the method chosen. Nulliparous women (those with no previous children) opted for MMA more frequently (71.7%) compared to multiparous women (48.1%). This association was statistically significant ($p<0.001$). The choice of method did not show a significant association with age group ($p=0.214$) or residence ($p=0.087$).



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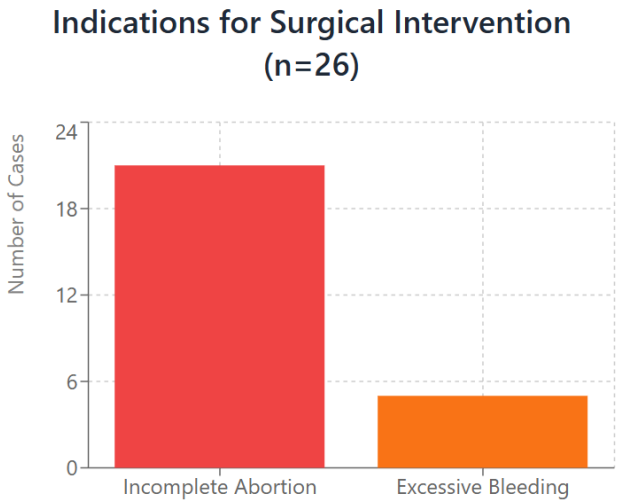
Among the 278 cases where MMA was employed, **252 (90.6%)** were documented as complete abortions requiring no further surgical intervention. Surgical evacuation (either MVA or D&C) was performed in 26 cases (9.4%) for indications such as incomplete abortion (n=21) or excessive bleeding (n=5).



Discussion

This retrospective cross-sectional study aimed to analyze the utilization patterns of the Medical Method of Abortion (MMA) and the reasons for seeking abortion among women at a tertiary care hospital. Our findings provide a snapshot of current clinical practice and the complex decision-making landscape surrounding abortion care in this setting.

The primary finding of our study was that MMA constituted **57.7%** of all induced abortions, establishing it as a dominant method in our hospital. This prevalence aligns with the global and national shift towards medical abortion, driven by its non-invasiveness, privacy, and increasing protocol standardization. Our figure, however, sits within a wide spectrum reported in the literature. A study by **Goyal et al. (2019)** in a similar Indian tertiary care setting found an MMA utilization rate of approximately 52%, which is closely comparable to our finding (2). This suggests a consistent adoption pattern in urban, tertiary healthcare institutions where protocols and drug availability are robust.

The most compelling evidence from our data is the strong inverse relationship between gestational age and the choice of MMA. A striking **87.9%** of women at or before 7 weeks gestation underwent MMA, a proportion that plummeted to **12.1%** at 10 weeks or beyond. This pattern is not merely a local practice but is strongly supported by efficacy and safety data. **Kapp et al. (2018)**, in their systematic review, affirmed that the efficacy of MMA is highest (often >95%) when used at or before 7 weeks of gestation, with effectiveness declining and complication rates potentially increasing with advancing gestation (1). Our clinical practice directly reflects this evidence-based window. The sharp decline after 9 weeks highlights a critical practice threshold; beyond this point, surgical methods like Manual Vacuum Aspiration (MVA) or Dilatation and Evacuation (D&E) become the preferred standard of care due to higher complete abortion rates and better management of potential complications. This finding underscores that provider training and patient counseling at our center are effectively aligned with international best practices regarding gestational age limits.

The typical profile of a woman seeking abortion in our study—urban, in her mid-to-late twenties, and parous—is consistent with demographic patterns observed in other hospital-based studies in India, such as those by **Kalyanwala et al. (2012)**. The significant association we found between parity and method choice is a nuanced and important observation. **Nulliparous women chose MMA at a significantly higher rate (71.7%) compared to multiparous women (48.1%) (3).** This may be attributed to several factors. Nulliparous women and their providers may perceive MMA as less traumatic and less likely to cause future infertility or cervical trauma compared to surgical instrumentation—a concern often expressed by patients, even if the evidence for such long-term risks from surgical abortion is minimal. Multiparous women, often presenting for termination due to completed family size, might have had prior experiences (with childbirth or even previous surgical abortions) that make them or their providers more comfortable with a quick, definitive surgical procedure.

Reasons for Seeking Abortion: Reflecting Social and Healthcare Realities

The distribution of reasons for abortion in our cohort offers a window into the persistent challenges in reproductive health. **Contraceptive failure (35.7%)** emerging as the leading cause is a critical finding echoed in numerous studies, including work by **Jejeebhoy et al. (2011) (4)**. This points directly to gaps in contraceptive access, adherence, and efficacy. It suggests that despite contraceptive availability, method mismatch, side effects, or inconsistent use continue to result in unintended pregnancies. This is not merely a medical issue but a public health one, highlighting the need for strengthened contraceptive counseling, access to a broader range of methods, and follow-up support.

Socio-economic constraints (28.0%) and **completion of family size (20.1%)** together accounted for nearly half of all reasons. These intertwined factors reflect the profound impact of financial stability, career aspirations, and existing family responsibilities on reproductive decisions. In a growing economy with rising costs of education and childcare, the economic burden of an additional child is a powerful determinant. This aligns with global literature where financial insecurity is consistently a major driver for seeking abortion.

A notable **11.2%** of abortions were performed for fetal anomalies or maternal health indications. While this is a smaller proportion, it represents a crucial and often emotionally challenging aspect of abortion services in a tertiary care center, which receives complex referrals. The availability of advanced prenatal diagnostics and the management of high-risk pregnancies naturally lead to a higher proportion of such indications in a hospital setting compared to primary care clinics.

When placed in a wider context, our findings both converge and diverge from other studies. Our high MMA uptake in early pregnancy is consistent with trends in well-resourced settings. However, studies from rural or primary health centers in India, such as those cited in the work of **Zavier et al. (2012)**, often report lower MMA utilization due to factors like drug stock-outs, lack of trained providers, and patient preference for a single-visit surgical procedure (6). Our tertiary care setting, with its better resources and specialist availability, likely facilitates higher MMA use.Compared to a seminal study on abortion provision by **Gerdts et al. (2015)** which examined barriers in legal settings globally, our data shows relatively high access within the legal framework (5). We did not analyze denial of services, but the high procedural numbers suggest

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the hospital is a significant access point. However, the predominance of contraceptive failure as a reason suggests that *primary prevention* of unwanted pregnancy remains a systemic weak point, even where *secondary prevention* (abortion services) is functioning.

Clinical and Programmatic Implications

The findings of this study have several direct implications:

1. **Service Strengthening:** The high efficacy and patient preference for MMA in early gestation argue for continued promotion and streamlining of this service. Ensuring consistent drug supply and trained counselors for MMA is essential (7).
2. **Targeted Counseling:** Understanding that nulliparous women strongly prefer MMA can help providers tailor their counseling. Conversely, for multiparous women, the benefits and safety of both methods should be clearly explained to support informed choice (8).
3. **Strengthening Primary Prevention:** The leading role of contraceptive failure is a call to action. There is a need for integrated services where abortion care is coupled with immediate post-abortion contraceptive provision and long-term family planning support. Initiatives to improve the method mix and follow-up for contraception are crucial to reduce the need for abortion (9).
4. **Gestational Age Awareness:** Our data reinforces the importance of early presentation. Public health messages and primary care provider education should emphasize the advantages (safety, privacy, efficacy) of early medical abortion to encourage women to seek care as soon as possible after a missed period (10,11).The strengths of this study include a robust sample size from a major referral center, providing a comprehensive view of practice patterns. The use of a pre-tested proforma and dual data extraction enhanced reliability. However, several limitations must be acknowledged. Being a retrospective record review, it is constrained by the quality and consistency of original documentation. Important psychosocial details or nuanced patient motivations may not have been fully captured in the clinical notes. The “reasons for abortion” were those documented by the provider, which may not fully represent the patient’s own perspective or may be simplified for administrative purposes. Furthermore, as a study from a single tertiary center, the findings may not be generalizable to rural populations, primary health centers, or states with different healthcare infrastructures. We also could not assess women’s satisfaction with the chosen method or their experiences of the counseling process.

Conclusion

This study confirms that the Medical Method of Abortion is the predominant choice for early pregnancy termination in our tertiary care setting, with utilization heavily influenced by gestational age and parity. The reasons for seeking abortion are dominated by contraceptive failure and socio-economic factors, highlighting an urgent need to strengthen the front end of reproductive healthcare reliable contraception even as we provide safe abortion services. Our findings validate current clinical protocols based on gestational age and underscore the importance of patient-centered counseling that considers reproductive history. Future prospective studies that capture patient-reported experiences and outcomes, and multi-centric studies involving different levels of the healthcare system, would provide an even deeper understanding of abortion care in India, guiding policy and practice towards more comprehensive reproductive health services.

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