

Study of Proportion and Complications of Unsupervised Intake of Medical Methods of Abortion

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Abstract: Background: Medical abortion is a safe and effective method of terminating early pregnancy when used appropriately under medical supervision. However, unsupervised use of medical abortion pills obtained over the counter remains a concern and may lead to delayed presentation and serious complications. Objectives: To determine the proportion of women presenting with abortion-related cases who had a history of unsupervised intake of medical abortion pills and to assess the associated clinical complications and outcomes. Methods: A prospective cross-sectional observational study was conducted over one year from October 2024 to October 2025 at J.K. Lon Hospital, Government Medical College, Kota. Women presenting with abortion or its complications and reporting unsupervised intake of medical abortion pills were evaluated regarding demographic profile, gestational age, pattern of pill intake, clinical presentation, investigations, management and outcomes. Results: Among 412 abortion cases, 130 (31.55%) had a history of unsupervised medical abortion pill intake. Incomplete abortion with retained products was the commonest ultrasonographic finding (69.23%). Excessive bleeding was the most frequent presenting symptom (70.77%), while 66.15% had anaemia. Severe complications occurred in 15.38% of women, and 35.38% required ICU/HDU admission. One maternal death (0.77%) was reported. Conclusion: Unsupervised intake of medical abortion pills remains an important cause of maternal morbidity. Strengthening regulation of OTC sales, improving public awareness and ensuring timely access to supervised abortion care are essential to prevent avoidable complications.

Keywords: Medical abortion, Unsupervised medical abortion, Over-the-counter MTP pills, Abortion complications, Maternal morbidity, Safe abortion care

1. Introduction

Abortion constitutes a fundamental component of reproductive health care and is closely linked with fertility regulation, contraceptive access, gender, equity, and maternal health outcomes. Globally, induced abortion continues to occur at substantial rates despite advancements in contraceptive technology and public health initiatives. Comprehensive global estimates indicate that between 1990 and 2014, approximately 56 million induced abortions occurred annually, demonstrating that unintended pregnancy remains a significant and persistent global concern [1]. A critical dimension of the global abortion burden is the safety with which abortions are performed.

India, with its vast population, marked socio-cultural heterogeneity, and diverse health system capacities across the states, contributes substantially to the global burden of abortion. Despite progressive legislation permitting termination of pregnancy under defined circumstances, the magnitude and patterns of abortion in India reflects complex interactions between fertility behavior, contraceptive access, socio-economic determinants, and service delivery gaps. Comprehensive national estimates for 2015 indicate that approximately 15.6 million abortions occurred annually in

India, corresponding to an abortion rate of nearly 47 per 1,000 women aged 15–49 years [2]

International professional bodies such as the American College of Obstetricians and Gynecologists (ACOG) and the Royal College of Obstetricians and Gynaecologists (RCOG) have established evidence-based protocols permitting medication abortion up to 70 days (10 weeks) of gestation using standardized dosing schedules [3-4]. Indian practice guidelines broadly align with these recommendations within the regulatory framework of the MTP Act. However, despite prescription-only classification, over-the-counter (OTC) availability of abortion pills through pharmacies without strict enforcement remains a practical concern in many regions. Pharmacies may dispense combination packs without verifying prescription, gestational age, or contraindications. This phenomenon creates a grey zone between legally supervised abortion and unsupervised self-administration.

While the legal framework permits safe medical abortion under supervision, unsupervised intake without prior evaluation falls outside the protective regulatory structure envisioned by the Act. The absence of screening for ectopic pregnancy, anemia, or coagulopathy increases the risk of

severe complications such as rupture, hemorrhagic shock, or septic abortion.

When performed under appropriate medical supervision in approved healthcare facilities, both medical and surgical methods of abortion are safe, effective, and evidence-based options for the termination of early pregnancy. Systematic reviews have demonstrated low rates of serious adverse events in early pregnancy termination irrespective of the method used, provided that evidence-based protocols are adhered to [5]. Antiprogesterone drug (RU486) Mifepristone and misoprostol (PGE1) have been approved by USFDA for medical abortion with a success rate of 92-97% if done under medical supervision [6-7]. Many women prefer medical abortion due to concerns regarding confidentiality, the inconvenience of hospital admission, long travel distances to healthcare facilities, financial constraints, and the easy over-the-counter availability of abortion pills in many regions. These factors often encourage self-administration. The safety of abortion is determined less by the method itself and more by the context of provision—availability of trained personnel, adherence to aseptic standards, appropriate counselling and structured follow-up remain pivotal in optimizing outcomes. Access to safe and supervised abortion care significantly reduces maternal morbidity and mortality associated with unsafe practices [8].

2. Research Gap and Rationale

In routine clinical practice at our tertiary care centre, a considerable number of women present with abortion-related complications, including incomplete abortion, threatened abortion, missed abortion, severe anaemia, haemorrhagic shock, sepsis, and, occasionally, maternal mortality. Detailed history-taking frequently reveals a history of unsupervised intake of OTC medical abortion pills without prior consultation with a qualified healthcare provider. These observations highlight the substantial burden of complications associated with unsupervised medical abortion and underscore the need for systematic evaluation.

Most available research has focused either on estimating overall abortion incidence or describing the clinical spectrum of complications following medical abortion pill intake but often lacks systematic documentation of gestational age at intake, dosing patterns, procurement source, and delay in seeking medical care-factors that

significantly influence severity of outcomes. Given these gaps, the present study aims to generate clinically relevant, region-specific evidence to strengthen safe abortion services and inform public health policy in Tier II India.

3. Materials and Methods

With permission from institutional ethics committee and review board a Prospective Cross-sectional observational study was done over a period of 1 year from Oct 2024 to Oct 2025 in a single unit of J.K. Lon hospital, G.M.C. Kota. All the cases of abortions and their complications in 1st or 2nd trimester of pregnancy were enquired for history of adoption of unsupervised Medical Methods of Abortion (MMA). All women giving positive history of unsupervised self-administration of MMA were included in the study. As many cases fulfilling the inclusion criteria (130) as came in the desired study duration were evaluated to find out proportion of unsupervised self-administration of MMA. Women with abortion or its complications with history of unsupervised MMA adopted were subjected to **Demographic profile, Detailed history, Examination** (Detailed general physical examination, systemic examination, per abdominal examination, per speculum examination and per vaginal examination), **Investigations** (all routine investigations and special investigations like culture and sensitivity, ultrasonography, serum β HCG, etc. as per individual case need), **Treatment** (conservative, MMA, surgical evacuation by D&E or MVA, laparotomy, etc.). These patients were observed for their outcomes such as development of complications like sepsis, haemorrhage, need for blood transfusion, evacuation, laparotomy, admission in ICU, maternal mortality and morbidity.

4. Results

Among the **total 412 cases of abortions 130 gave h/o intake of MTP pills**. None of these women were prescribed or supervised by a trained provider. The proportion of unsupervised MTP pill intake was **31.55%** of the total cases of abortions presenting in the gynae OPD. The actual number of unsupervised MTP pill intake in the population is likely to be high because all those who achieve successful abortion without complications do not present to the hospital.

Table 1: Demography

Age group	≤20	21 – 25	26 – 30	31 – 35	> 35
frequency	08(6.15%)	42(32.31%)	46(35.38%)	24(18.46%)	10(7.69%)
Socioeconomic status	Upper Class (I)	Upper Middle Class (II)	Lower Middle Class (III)	Upper Lower Class (IV)	Lower Class (V)
frequency	03(2.31%)	12(9.23%)	30(23.08%)	55(42.31%)	30(23.08%)
Gravidity	Primi	G2	G3	G4	G5
frequency	20(15.38%)	44(33.85%)	38(29.23%)	18(13.85%)	10(7.69%)
Obs History of ≥G2	Previous NVD	Previous 1CS	Previous 2CS	Previous 3CS	Previous 5CS
frequency	58(44.62%)	29(22.31%)	19(14.62%)	03(2.31%)	01(0.77%)

Most participants were from the age group 26-30 years and multigravida. Mean age in our study was **27.12 ± 4.74**. Primigravida constituted 20(15.38%) participants. Majority of participants in the present study had a history of previous normal vaginal delivery. The study group also consisted of

cases with previous CS. Single woman having h/o previous 5 CS who came in emergency with massive haemorrhage and peripheral circulatory failure (PCF) could not be resuscitated adequately to asses for scar dehiscence.

Table 3: Detailed history related to Unsupervised intake of MMA

Gestational Age	< 6 weeks	6 – 9 weeks	10 – 12 weeks	> 12 weeks
Frequency	18 (13.85%)	36 (27.69%)	40 (30.77%)	36 (27.69%)
Reason for OTC MMA Use	Privacy	Easy availability	Husband/Partner's pursuance	Avoid hospital visit
Frequency	62 (47.69%)	31 (23.84%)	23 (17.69%)	14 (10.76%)
Pattern of use	Correct regimen	Incomplete dose	Wrong timing (Did not follow correct schedule)	
Frequency	28 (21.54%)	46 (35.38%)	56 (43.08%)	
Delay in presentation	< 1 week	1 – 2 weeks	> 2 weeks	
Frequency	56 (43.08%)	40 (30.77%)	34 (26.15%)	

Amongst the total cases 52(40%) participants had Husband/relative/partner as the source of guidance for OTC MTP Pills and reason being privacy in most of the cases. Majority- 56 (43.08%) women did not follow the correct schedule and had presented within one week of complications.

Table 3: Clinical Symptomatology of Study Participants

Clinical Symptoms	Frequency (n)	Percentage (%)
Excessive bleeding PV	92	70.77
Lower abdominal pain	46	35.38
Passage of fleshy mass	28	21.54
Spotting PV	22	16.92
Irregular bleeding per vaginum	20	15.38
Heavy bleeding with giddiness & fainting	18	13.85
Foul smelling discharge	12	9.23
Fever	8	6.15
Vomiting / ghabrahat	6	4.61
Total	252	

92(70.77%) cases presented with excessive bleeding PV constituting majority of the cases. Symptoms showing complications like heavy bleeding with giddiness and fainting shown by 18(13.85%) cases, foul smelling discharge by 12(9.23%) cases, fever by 8(6.15%) cases while vomiting and ghabrahat by 6(4.61%) cases. Since many patients had a combination of symptoms so the no. of symptoms is more than total no. of cases.

Table 4: USG Findings of Study Participants (N = 130)

USG Findings	Frequency (n)	Percentage (%)
Normal Study	8	6.15
Missed Abortion	12	9.23
Blighted ovum	6	4.61
RPOC's (Incomplete Abortion)	90	69.23
Live intrauterine pregnancy (failure)	3	2.31
Ectopic pregnancy	8	6.15
Scar site ectopic	2	1.54
Total	129*	99.23

*One case with? Scar dehiscence

Ultrasonography revealed that incomplete abortion with retained products of conception (RPOCs) was the most common finding, observed in 90(69.23%) of cases. One patient of previous 5 CS came with peripheral circulatory failure (PCF) with clinical features of scar dehiscence but could not be stabilized enough for USG evaluation and she expired during period of resuscitation (2 hours).

Table 5: Management According to Final Diagnosis of Study Participants (N = 129)

Final Diagnosis	Management	Frequency (n)	Percentage (%)
Complete abortion	Conservative management for anaemia and sepsis	08	6.20
Incomplete abortion	D&E / MVA	90	69.76
Missed abortion	D&E / MVA	12	9.30
Blighted ovum	D&E / MVA	06	4.65
Ectopic pregnancy (including scar site ectopic)	Laparotomy	10	7.75
MMA failure (live intrauterine pregnancy)	Medical termination of pregnancy (MTP) by D&E/MVA (surgical method)	03	2.32
Total	—	129	100

Surgical evacuation (D&E/MVA) was the predominant mode of management, performed in the majority of cases. Amongst total 130 cases 06 cases of abortion were associated with septicemia and septic shock which were managed in HDU/ICU with IV fluids, IV Antibiotics, vasopressors, blood and blood product transfusion and removal of septic foci.

Table 6: Severe Complications Among Study Participants

Complication	Frequency (n)	Percentage (%)
Haemorrhagic shock	08	6.15
Septicemia	05	3.85
Septic shock	01	0.76
AKI	03	2.31
ARDS	02	1.54
DIC	01	0.77
Total	20	15.38

Severe complications were observed in 20(15.38%) study participants. Haemorrhagic shock was the most frequent complication observed in 08(6.15%), followed by septicemia in 05(3.85%) and septic shock in 01(0.76%) cases. Acute kidney injury was encountered in 03 (2.31%) cases (all were transferred to the Department of Nephrology) while ARDS in 02(1.54%) and DIC in 01(0.77%) cases.

Table 7: Anaemia Status Among Study Participants

Variable	Frequency (n)	Percentage (%)
Mild anaemia (<11.9 g/dL)	22	16.92
Moderate anaemia (<9.7g/dL)	24	18.46
Severe anaemia (<7g/dL)	40	30.77
Total	86	66.15

Anaemia was present in 86 (66.15%) participants. Among these 64(49.23%) women needed BT, 51 women needed 2 or more units of PRBC transfusion.

Table 8: Outcome of Study Participants (N = 130)

Outcome	Frequency (n)	Percentage (%)
Recovered (without ICU care)	83	63.84
ICU/HDU admission	46	35.38
Mortality	01	0.77
Total	130	100.00

Most participants recovered without ICU/HDU care i.e. 83(63.84%) patients, while 46(35.38%) patients required ICU/HDU admission. There was 01(0.77%) mortality during the study period amongst the total cases.

5. Discussion

In present study the proportion of unsupervised MTP pill intake was 31.55% of the total cases of abortions presenting in the gynae OPD i.e. 130 cases out of 412 total abortion cases. Similar result was found by Maharshi A et al. – 58(23.77%)^[9]. Kumari L and Indhumathi D found 51(8.85%) cases of OTC MMA pills use^[10]. Most participants were multigravida- 66(50.76%). Similar findings were reported by Dogra et al., where 66(66%) women were gravida three or more, Sarojini et al. where 68(65.38%) women were gravida 3 or more, Kapadia S et al. where 117(78.00%) women were $\geq G2$, Kumari R et al. where 85(86.74%) were $\geq G2$ and Maharshi A et al. where 58(82.74%) women were $\geq G3$ ^[9,11-14]. This may indicate that women with completed family size or previous pregnancy experience tend to consume MTP pills more casually without medical consultation. In the present study, the commonest source of guidance for pill intake was husband/partner/relatives - 52(40%). Kumari L and Indhumathi D reported that husband/relative were the source of guidance for intake of OTC MMA in 29(56.86%) cases.^[10]

In the present study, maximum women belonged to the age group of 21-30 years- 88 (67.79%), with mean age of 27.12 $\pm$ 4.74 years. Similarly maximum number of cases of OTC MMA adoption were reported in the age group of 20-30 years-105(70%) by Kapadia S et al., 20-30 years 41(80.10%) by Kumari L and Indhumathi D, 20-30 years-62((59.61%) by Sarojini T R et al., 25-31 years by Kumari R et al.- 53(54.08%).^[10,12-14]

Regarding gestational age at pill intake, the present study found that 76(58.46%) women consumed MTP pills beyond 10 weeks gestation, including 36(27.69%) beyond 12 weeks. Similar trends were reported by Dogra et al., where 32(32%) women consumed pills beyond 10 weeks gestation.^[11] Similarly, Kumari L and Indhumathi D found that 27(52.94%) women consumed MTP pills at or beyond 9 weeks.^[10] Maharshi A et al. found that 16(27.58%) women consumed pills at 10 weeks or more^[9]. Sarojini et al. observed that 67(64.42%) women consumed pills beyond the recommended gestational age of 7 weeks, while Kumari R et al reported that 66(67.34%) women took pills after the recommended period of 7 weeks^[12,14]. These findings indicate poor awareness regarding legal and recommended gestational limits for medical abortion and significantly increase the risk of complications. Sarojini et al like present study observed that 53(51%) women has not followed the

recommended dosage schedule^[12]. Kumari L and Indhumathi D found that 34(66.66%) cases took the incomplete dosage of MTP pills^[10]. Incorrect regimen likely contributed significantly to incomplete abortion and ongoing pregnancy in these women.

Excessive bleeding per vaginum was the most common presenting symptom in the present study, observed in 92(70.77%) women. Similar findings were reported by Sarojini T R et al.- 72(69.30%), Kumari R et al.- 70(71.42%), Kapadia S et al.- 120(80%), and Dogra et al.- 41(41%) bleeding with passage of fleshy mass^[11-14]. These findings indicate that haemorrhage remains the most common presentation following unsupervised MTP pill intake.

Anaemia was present in 86(66.15%) women overall, including severe anaemia in 40(30.77%) cases. Among these 51(39.23%) cases needed 2 or more units of PRBC transfusion. Similar findings were observed by Kapadia S et al. where anaemia was present in 94(62.67%) women and severe anaemia in 34(22.67%)^[13]. Among these 14(9.33%) required blood transfusion^[13]. Maharshi A et al. reported anaemia in 53(91.37%) women where 24(41.37%) women required blood transfusion^[9]. Sarojini et al. found anaemia in 78(75%) cases requiring transfusion in all 78(75%) women^[12]. Dogra A et al. reported Anaemia in all 100 cases amongst which 38(38%) cases presented with severe anaemia and all these severe anaemia cases needed blood transfusion^[11]. These findings may be attributed to pre-existing nutritional anaemia compounded by prolonged bleeding following incomplete abortion.

Ultrasonography in the present study revealed incomplete abortion with retained products of conception (RPOCs) in 90(69.23%) women, which was comparable to Sarojini et al.- 75(72.21%), Kumari R et al.- 81(82.65%), Maharshi A et al.- 38(65.5%), Dogra et al.- 41(41.00%) and Kumari L and Indhumathi- 27(52.94%)^[9-12,14]. Ectopic pregnancy was diagnosed in 08(6.15%) women in the present study and scar ectopic pregnancy in 02(1.54%) cases. Similar findings were reported by Dogra et al.- 04(4.00%), Sarojini et al.- 02(1.95%), Kumari R et al.- 06(6.12%), Maharshi A et al.- 03(5.17%) and Kumari L and Indhumathi D- 01(02.00%)^[9-12,14]. These findings emphasize the importance of ultrasonography before medical abortion, as ectopic pregnancy remains a life-threatening condition which may be missed in unsupervised pill intake.

In the present study, surgical evacuation by D&E/MVA was required in 111(86.04%) women with incomplete abortion, missed abortion and blighted ovum. Similarly high rates of surgical evacuation were reported by Sarojini et al.- 89(85.57%), Kumari R et al.- 81(82.65%), Dogra et al.- 68(68.00%) and Kumari L and Indhumathi- 40(78.43%)^[10-12,14]. Thus, despite initially attempting medical abortion to avoid hospital procedures, most women ultimately required surgical intervention because of complications or failed abortion.

Similar to present study, Sarojini et al. reported shock in 04(3.84%), sepsis in 03(2.88%) and AKI in 02(1.92%)^[12]. Kumari R et al. reported 11(11.22%) cases with shock and

04(4.08%) cases with sepsis^[14]. Maharshi A et al. reported 13(22.41%) cases with shock and 07(12.07%) cases with septic abortion^[9]. Dogra A et al. reported 24(24%) cases with shock and 05(05%) cases with septic abortion^[11]. Kumari L and Indhumathi D reported 08(15.68%) cases with shock and 04(7.84%) cases with sepsis^[10]. Kapadia S et al. reported shock in 13(8.67%), septicemia in 04(2.67%)^[13]. In the present study, 46(35.38%) women required ICU/HDU admission, mainly because of severe anaemia, febrile illness, haemorrhagic shock, septicemia, AKI, and ectopic rupture. Comparable ICU admission rates were observed by Maharshi A et al. 10(17.24%) and Kumari R et al. 15(15.30%)^[9,14].

The present study reported one maternal mortality in a woman with previous five CS who presented with haemorrhagic shock following MTP pill intake. Similar maternal deaths were reported by Sarojini et al.- 02(1.92%) and Kapadia S et al.- 01(0.66%)^[12,13]. These deaths highlight the preventable yet potentially fatal consequences of unsupervised abortion practices, especially in women with scarred uterus or advanced gestational age.

6. Conclusion

As a part of govt policy, there are awareness campaign for IUCD, Condoms, emergency pills; but there is no media coverage for safety and use of MMA. Contraindications and use of MMA in difficult cases like previous CS, grand multiparas, impermissible GA for use of MMA and need for admission in the hospital for the same should be emphasized through media coverage and govt campaigns.

Therefore, this study concludes that there is an urgent need for:

- Strict regulation of OTC sale of MTP pills.
- Improved public awareness regarding safe abortion practices through responsible media campaigns that emphasize that MMA is safe and effective only when undertaken under appropriate medical supervision and according to recommended guidelines.
- Easy access to trained healthcare providers and approved abortion services.
- Early referral and timely management of complications.

References

- [1] Sedgh G, Bearak J, Singh S, Bankole A, Popinchalk A, Ganatra B, Rossier C, Gerdt C, Tunçalp Ö, Johnson BR, Johnston HB. Abortion incidence between 1990 and 2014: global, regional, and subregional levels and trends. *The Lancet*. 2016 Jul 16;388(10041):258-67
- [2] Singh S, Shekhar C, Acharya R, Moore AM, Stillman M, Pradhan MR, Frost JJ, Sahoo H, Alagarajan M, Hussain R, Sundaram A. The incidence of abortion and unintended pregnancy in India, 2015. *The Lancet Global Health*. 2018 Jan 1;6(1):e111-20.
- [3] American College of Obstetricians and Gynecologists. Medication abortion up to 70 days of gestation: ACOG practice bulletin, number 225. *Obstetrics and Gynecology*. 2020 Oct 1;136(4):e31-47.
- [4] Royal College of Obstetricians & Gynaecologists. Best practice in abortion care.
- [5] Kulier RR, Gülmezoglu AM, Hofmeyr GJ, Cheng LL, Campana A. Medical methods for first trimester abortion. *Cochrane database of systematic reviews*. 2003(3).
- [6] Ellertson C, Waldman SN. The Mifepristone–Misoprostol regimen for early medical abortion. *Curr Women Health Rep*. 2001;1:184.
- [7] FOGSI focus on Medical abortion. FOGSI-ICOG-GCPR guidelines (online) 2011; available from.
- [8] Kapp N, Whyte P, Tang J, Jackson E, Brahmi D. A review of evidence for safe abortion care. *Contraception*. 2013 Sep 1;88(3):350-63.
- [9] Maharshi A, Mande S, Shirodkar S, Rachakonda L. Over-the-counter misuse of medical abortion pills – an analysis of the complications and comparison. *Int J Curr Med Appl Sci*. 2019;24(2):16-22.
- [10] Kumari L, Indhumathi D. Study of outcome of cases of self-medication with mifepristone with or without misoprostol for medical abortion. *Inter J Clin Obstet Gynaecol*. 2020;4(6):236-41.
- [11] Dogra A, Kumar V. Self-administration of MTP Pills and its Complications: An Observational Study.
- [12] Sarojini, Ashakiran TR, Bhanu BT, Radhika. Over-the-counter MTP Pills and Its Impact on Women's Health. *J Obstet Gynaecol India*. 2017 Feb;67(1):37-41.
- [13] Kapadia S, Joharwal N, Kapoor A, Dixit M. Over the counter medical abortion pills and its consequences. *Natl J Integr Res Med*. 2020;11(1):41-44.
- [14] Kumari R, Tirkey S, Kumari A. Over-the-Counter Use of Medical Abortion Pills: A Prospective Cohort Study. *Journal of Clinical & Diagnostic Research*. 2023 Aug 1;17(8).