RESEARCH ARTICLE

Outcome of First Trimester Induced Abortions Using Misoprostol by Buccal and Vaginal Routes

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Abstract

Aims of study: To study the outcome of buccal and vaginal administration of Misoprostol in first-trimester induced abortions. To study the induction-abortion interval, duration of bleeding, failure rate, side effects, and patient satisfaction among both routes.

Materials and methods: A prospective observational study was carried out on 110 women requesting for first-trimester abortion as per medical termination of pregnancy (MTP) Act. They were divided into two groups, i.e., vaginal and buccal. The vaginal group comprised 55 patients who were given oral Mifepristone, followed by vaginal Misoprostol (800 µg). In the buccal group, consisting of 55 patients, oral Mifepristone was administered, followed by buccal Misoprostol (800 µg). Results were compared between the groups in terms of induction-abortion interval, duration of bleeding, failure rate, side effects, safety, effectiveness, and patient satisfaction.

Results: The rate of complete abortion was 92.7% in the vaginal group and 91% in the buccal group. No statistically significant difference was found in the rate of complete abortion among both groups. The side effect profile was similar among both the groups, except for altered taste in the buccal group. No statistically significant difference in patient satisfaction was observed in the groups.

Conclusion: Buccal and vaginal routes of administration of Misoprostol have similar efficacy and patient satisfaction.

Clinical significance: For first-trimester medical abortion, Misoprostol can be used in various routes. The vaginal route, requires repeated vaginal examinations which becomes inconvenient for the patients. The buccal route can be used as an effective alternative to the vaginal route.

Keywords: Abortion, Buccal, Misoprostol.

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Introduction

Abortion is defined as termination of pregnancy up to 20 weeks of gestation or less than 500 grams birth weight.[1] Worldwide more than 1/5th of all pregnancies nearly 53 million are terminated each year of which around 43 million are in developing countries and 10 million are in developed nations. In India the incidence of illegal abortions is high. Most abortion-related deaths are due to illegal abortions. Access to safe abortion services has become a need of the hour. Medication abortion using Misoprostol is safe. The Central Drug Standard Organization, Directorate General of Health has approved a combi pack of medical termination of pregnancy (MTP) kit that includes 1 tablet of Mifepristone (200 mg) and 4 tablets of Misoprostol (200 µg) each for the MTP up to 63 days of gestation or 9 weeks.[2]

Misoprostol can be given by oral/buccal/vaginal/rectal route etc. The vaginal route of administration of Misoprostol is a commonly used and effective route, but it is uncomfortable for the patients and not accepted by many patients since it requires repeated per vaginal examinations. Other advantages of the buccal route over the vaginal includes its acceptability and less chances of infection, as reported by various studies.[3,4]

This study was carried out to study the outcome of first-trimester induced abortion using Misoprostol by buccal and vaginal routes.[5]

Materials and Methods

This study was carried out at a Tertiary care center in central India from October 2018 to September 2020, after obtaining permission from the institutional ethical committee. The study design was a prospective observational study. The study included 110 pregnant women based on the inclusion criteria. Every alternate patient was assigned to each group, i.e., vaginal and buccal groups. Informed written consent was obtained from all study subjects after giving information regarding the procedure, the drugs used, the associated side effects, and the failure rate of the procedure.

Inclusion Criteria

- Age 18 years and above
- Indication of termination of pregnancy as per the MTP Act

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Table 1: Characteristics of subjects in both the groups

Characteristics	*Vaginal group*		*Buccal group*		*p-value*
Mean age (years)	*27.51*		*27.04*		*0.451*
	No	*%*	*No*	*%*	
Para 1	26	47.3%	17	30.9%	
Para 2	25	45.4%	34	61.8%	0.19
Para 3	4	7.3%	4	7.3%	
Gestational age ≤49 days	26	47.27	28	50.91	0.65
Gestational age >49 days	29	52.73	27	49.09	

- Gestational age less than or equal to 63 days
- Willing for regular follow up and suction and evacuation in case of failure

Exclusion Criteria

- Contraindication to the drugs used
- Ectopic pregnancy
- Known or suspected pelvic infection
- Severe hepatic or renal disease
- Coagulopathy

Procedural Details

A detailed history taking followed by general and systemic examination were done. Routine investigations including ultrasound was done to determine gestational age.

The below listed regimen was used:

- *Vaginal Group (n = 55):*
  In the vaginal group, the patient was given Mifeoristone 200 mg per orally, followed by Tab. Misoprostol 800 µg placed in the posterior fornix after 48 hours.
- *Buccal Group (n = 55):*
  In Buccal group, the patient was given tablet Mifepristone 200 mg per orally, followed by Tab. Misoprostol 800 µg, kept in buccal fold after 48 hours.

The side effects experienced and the patient's satisfaction level with the route of administration of Misoprostol were studied.

Study subjects were called for follow-up after an interval of 2 weeks. An ultrasound was done to look for incomplete abortion. In all cases of incomplete abortion, surgical evacuation was done. Success was defined as complete abortion without the need for suction and evacuation.

Results

Characteristics of Study Subjects in Both the Groups

As seen in Table 1, the mean age of study subjects in the vaginal group was 27.51 years and in the buccal group was 27.04 years. The mean age of study subjects was comparable among both groups. Also both the groups were comparable in terms of parity and gestational age.

Induction-abortion Interval in Both the Groups

As seen in Table 2, the induction-abortion interval was up to 4 hours in 90.9% of the vaginal group and 72.7% in the buccal group. Whereas, the interval was more than 4 hours in 9.09% in the vaginal group and 27.27% in the buccal group. Thus there is a statistically significant difference in induction-abortion interval among both groups.

Table 2: Induction-abortion interval in both the groups

Induction-abortion interval	*Vaginal group*		*Buccal group*		*p-value*
	No	*%*	*No*	*%*	
≤4 Hours	50	90.9	40	72.7	0.013
>4 Hours	5	9.09	15	27.27	
Mean interval	3.72		4.02		0.016

Table 3: Side effects among both the groups

Side effects	*Vaginal group*		*Buccal group*		χ^2	*p-value*
	No	*%*	*No*	*%*		
Altered taste	0	0	14	25.45	0	0.0001 (HS)
Nausea	4	7.3	2	3.6		
Vomiting	1	1.8	2	3.6		
Diarrhea	4	7.3	1	1.8	3.75	0.44 (NS)
Abdominal pain	19	34.5	11	20		
Fever	2	3.6	4	7.3		

Table 4: Rate of complete abortion among both the groups

Abortion rate	*Vaginal group*		*Buccal group*		*p-value*
	No	*%*	*No*	*%*	
Complete abortion	51	92.7	50	91	0.72
Incomplete abortion	4	7.3	5	9	

Table 5: Level of satisfaction and acceptance

Level of satisfaction and acceptance	*Vaginal group*		*Buccal group*		χ^2	*p-value*
	No	*%*	*No*	*%*		
Satisfied	49	89	51	92	0.0064	0.9968
Will use same method in future	48	87.2	49	89		
Will suggest to friends	48	87.2	50	90		

Side Effects Experienced among Both the Groups

As seen in Table 3, there was no statistically significant difference among side effects experienced in both the groups, except for altered taste (experienced only in a buccal group).

Rate of Complete Abortion in Both the Groups

As seen in Table 4, the rate of complete abortion was 92.7% in the vaginal group and 91% in the buccal group. The difference was statistically not significant.

Level of Satisfaction and Acceptance among Both the Groups

As seen in Table 5, 89% patients in vaginal group and 92% patients in buccal group were satisfied with the route of administration of Misoprostol. The difference was not statistically significant.

Discussion

Medication abortion can be safely administered and it requires less assistance than surgical methods and it is preferred by many patients. In our study, the study subjects among both groups were comparable to each other.

In our study, the mean age of study subjects was 27.51 years in the vaginal group and 27.04 years in the buccal group, which is comparable to other studies.[6,7]

In our study, maximum study subjects were multiparas, which is comparable to other studies.[6]

In our study, there was no statistically significant difference among the gestational age of study subjects in both the buccal and vaginal groups. This is comparable to other studies.[7]

The time interval between the administration of Misoprostol and the onset of bleeding is considered an induction-abortion interval. The interval was less in the vaginal group as compared to a buccal group and the difference is statistically significant. The results are comparable to the study conducted by Raj and Pradhan[7] and Nath and Kumar.[8]

The mean induction-abortion interval was 3.72 hours in the vaginal group and 4.02 hours in the buccal group. The difference was statistically not significant. Similar results were observed in the study conducted by Nath and Kumar.[8]

In our study, no statistically significant differences were noted among side effects, except for altered taste in a buccal group. The findings were consistent with studies conducted by Khan et al.[6] and Nath and Kumar.[8]

The rate of complete abortion was 92.7% in the vaginal group and 91% in a buccal group (p-value = 0.72) showing both routes were equally effective. Similar results were noted in studies conducted by Khan et al.,[6] Raj and Pradhan[7] and Nath and Kumar.[8]

In our study, the satisfaction rate was 89% in the vaginal group and 92% in a buccal group. The difference is not significant. The results are comparable to the study conducted by Nath and Kumar.[8]

Conclusion

Provision of safe abortion services using medical abortion can help to bring down the rate of illegal and unsafe abortions; especially in developing countries where healthcare facilities are not as easily available as in developed countries.

It can be concluded from our study that, the efficacy of buccal Misoprostol is comparable to vaginal Misoprostol in first trimester MTP up to 63 days of gestation.

Clinical Significance

For first-trimester medical abortion, Misoprostol can be used through various routes. The vaginal route, requires repeated vaginal examinations which becomes inconvenient for the patients. The buccal route is an effective alternative to the vaginal route in first trimester induced abortions.

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Ethical Approval

The authors have obtained prior ethical approval from the institutional ethical committee.

Research Involving Human Participants and/or Animals: This article does not contain any studies with human participants or animals performed by any of the authors.

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