



## A COMPARATIVE STUDY OF TERMINATION OF PREGNANCY BY VAGINAL MISOPROST AND INTRAUTERINE RUBBER CATHETER WITH VAGINAL MISOPROST.

### Medical Science

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### ABSTRACT

**Background :** Deliberate termination of pregnancy either by medical or by surgical method before the viability of the fetus is called Induction of abortion. World Health Organization, define abortion as pregnancy termination before 20 weeks' gestation or with a fetus born weighing <500 gm. Rubber catheter has been widely used in India as an abortifacient, as mentioned in a case series of 200 midtrimester MTPs in the early eighties.

**Methodology:** This prospective comparative study was conducted on 50 female patients having pregnancy of 13-20 weeks desirous of MTP coming to the hospital were divided into 2 groups alternatively. Each group had 25 patients each. Group A-Vaginal tablets Misoprost (400ug) was used every 4 hrly. Group B-Vaginal tablets Misoprost (400ug) was used along with intrauterine extraamniotic rubber catheter placement.

**Result :** In group A, 11 patients ( 44%) had retained products of conception. In group B, only 3 patients (12%) had retained POC, rest expelled the products completely. The "p" value was 0.0255. 100% of group B patients aborted within 12 hrs whereas only 3% patients in Group A aborted within 12 hrs."P" value was 0.0001.

**Conclusion:** The combined use of vaginal Misoprost and extra amniotic rubber catheter is more effective, well tolerated, less expensive and superior to vaginal Misoprost alone in second trimester MTP up to 20weeks.

### KEYWORDS

MTP, MESOPROST,

**INTRODUCTION:** Deliberate termination of pregnancy either by medical or by surgical method before the viability of the fetus is called Induction of abortion [1]. Viability lies between the lines that separates abortion from preterm birth. It is usually defined by pregnancy duration and fetal birth weight for statistical and legal purposes. Importantly, the National Centre for Health Statistics, The Centre for disease control and the World Health Organization, all define abortion as pregnancy termination before 20 weeks' gestation or with a fetus born weighing <500 gm [2].

There are many countries in the globe where the abortion is not yet legalized. In India, the abortion was legalized by MTP ACT of 1971, and has been enforced in the year 1972. The provisions of the act have been revised in 1975.

#### Legally induced abortion is of 2 types:-

Therapeutic abortion: There are several diverse medical and surgical disorders that are indications for termination of pregnancy. Examples include persistent cardiac de-compensation especially with fixed pulmonary hypertension, advanced hypertensive vascular disease or diabetes and malignancy. In cases of rape or incest, termination of pregnancy is considered reasonable. The most common indication currently is to prevent birth of a fetus with a significant anatomical, metabolic or mental deformity.

Elective/voluntary abortion: The interruption of pregnancy before viability of the fetus at the request of the woman but not for medical reasons is usually termed Elective or Voluntary abortion. Most abortions done today are elective and thus it is one of the most commonly performed medical procedures [3]. Since the legalization of MTP up to 20 weeks in India. Various methods of abortion have been introduced and withdrawn. It is difficult to terminate pregnancy in the second trimester with reasonable safety as in 1st trimester [4]. The complications are about 5 times more in second trimester. The medical methods used for termination of pregnancy in mid-trimester are intravenous oxytocin, intra amniotic hypertonic urea (20%), extra amniotic ethacridine lactate, prostaglandins (PGF<sub>2a</sub>, PGE<sub>2</sub>) and extra amniotic saline infusion (isotonic) with a trans-cervical balloon catheter.

The surgical methods include dilatation and curettage, dilatation and evacuation, dilatation and extraction and hysterectomy. Dilatation of

the cervix can be done by using hygroscopic dilators like luminary's tent, Foley's catheter or rubber catheter [5].

Misoprostol (PGE<sub>1</sub>) is one of the derivatives of prostanoid acid. Primarily, it has been used for peptic ulcer disease. Misoprostol can be used orally, vaginally or sublingually for mid-trimester abortion. Misoprostol is cheap, stable at room temperature, long half-life, easily administered and has few side effects [6]. Misoprostol promotes myometrial contraction irrespective of the duration of gestation. Side effects of PGE<sub>1</sub> are nausea, vomiting, diarrhea, pyrexia, bronchospasm, tachycardia and chills. Rupture of uterus, though rare, has also been observed [7].

Rubber catheter is easily available, cheap, reusable and easily placed extra-amniotically. An autoclaved rubber catheter is passed through the cervix and between the membranes that surround the fetus and wall of the uterus itself. Separation of the membranes results in release of substances (prostaglandins and oxytocin) that hastens cervical ripening and myometrial contractions. Rubber catheter has been widely used in India as an abortifacient, as mentioned in a case series of 200 midtrimester MTPs in the early eighties [8].

#### MATERIAL AND METHODS:

**Study design:** This prospective comparative study was conducted on 50 female patients having pregnancy of 13-20 weeks desirous of MTP coming to Brindavan Hospital, Ramgarh, Jharkhand Between July 2015 To June 2016. Proper history of pregnant women was taken. General and systemic examination were performed. USG was done in every case to confirm intrauterine pregnancy and gestational age. Patients coming to the hospital were divided into 2 groups alternatively. Each group had 25 patients each.

GROUP A-Vaginal tablets Misoprost (400ug) was used every 4 hrly. GROUP B-Vaginal tablets Misoprost (400ug) was used along with intrauterine extraamniotic rubber catheter placement. Verbal informed consent was taken from all patients. Verbal consent was witnessed and formally recorded.

**Study medication:** Tablets of misoprostol (200ug) was used. Rubber catheter was autoclaved before use.

**Patient selection:**

Inclusion criteria –Females having pregnancy of 13-20 weeks desirous of termination.

**Exclusion criteria** –Cases of missed abortion, previous LSCS, pregnancy <13 weeks or >20 weeks, those having history of taking any drug or any surgical interference for aborting the current pregnancy were excluded from this study.

**Follow up:** After discharge from the hospital, patients were followed up to next menstrual period. During this period complains like abdominal pain, fever and bleeding were noted.

**Clinical assessment parameters:** Result was compared in terms of induction abortion interval, dose of Misoprostol used, incidence of retained products of conception, and post abortion complications.

**Statistics:** Results were analyzed and statistical significance was derived by “p” value calculated by Fisher’s exact test.

**OBSERVATION AND RESULT:****1. Retained Product of Conception (n=50):****Table-1**

	Retained POC	Not Retained POC	Total patients	P VALUE (Fisher's exact test)
GROUP A	11(44)	14(56)	25	0.0255
GROUP B	3(12)	22(88)	25	

\*Parentheses show percentages

In Table 1, group A, 11 patients (44%) had retained products of conception. In group B, only 3 patients (12%) had retained POC, rest expelled the products completely. The “p” value is 0.0255(<0.05). It is statistical significant association retained POC in group B with intrauterine rubber catheter with vaginal Misoprost is less than group B.

**2. Dose of Misoprost : (N=50)****Table-2**

Dose	No. of terminated pregnancy in Group A (n=25)	No. of terminated pregnancy in Group B (n=25)
800 µgm	3	25
1200 µgm	4	0
1600 µgm	10	0
2000 µgm	8	0

In Table 2, Vaginal tablets Misoprost (400ug) was used every 4 hrly in group A. Vaginal tablets Misoprost (400ug) was used along with intrauterine extra amniotic rubber catheter placement in group B. 100% of group B patients aborted with the second dose of Misoprost Vs only 12% in group A. In the other patients of group A dose of Misoprost had to be increased up to 2000ug.

**3. Time interval of Induction of Abortion : (N = 50)****Table -3**

Time in Hrs	No. of Abortion in group A (n = 25)	No. of Abortion in group B (n =25)	P value(Fisher's exact test)
<12	3	25	<0.0001
≥12	22	0	

In table 3, 100% of group B patients aborted within 12 hrs whereas only 3% patients in group A aborted within 12 hrs.”p” value was 0.0001 (0.05). It is statistical significance association

**4. Complication of method of termination of pregnancy :****Table -4**

	Complication occurred	No Complication	P Value (Fisher's exact Test)
Group A	15	10	0.009
Group B	3	22	

In table 4, When I followed post abortion of both group , 60% patients of group A complained of fever, pain abdomen, nausea, vomiting and

diarrhea whereas only 12% in group B complained of mild fever. ”p” value was 0.009. It is statistical significance association that less complication in group B than group A client.

**DISCUSSION:** In our study, 100% of group B patients aborted with the second dose of Misoprost Vs only 12% in group A. In the other patients of group A, dose of Misoprost had to be increased up to 2000ug.

In group A, 11 patients (44%) had retained products of conception. In group B, only 3 patients (12%) had retained POC, rest expelled the products completely. The “p” value was 0.0255.

100% of group B patients aborted within 12 hrs whereas only 3% patients

in GROUP A aborted within 12 hrs .”p” value was 0.0001. When followed post abortion, 60% patients of group A complained of fever, pain abdomen, nausea, vomiting and diarrhea whereas only 12% in GROUP B

Complained of mild fever. ”p” value was 0.009.

In the study by Sumant R et.al. [9] 400 microgram of vaginal Misoprost followed by 200 microgram every 4 hrly was used.50% aborted within 6-8hrs,70 % aborted within 10 hrs and 96.6% within 16 hrs.

In Mishra et al study[8] autoclaved extra amniotic rubber catheter was used without any drug in 200 patients for midtrimester termination of pregnancy.55% of the patients aborted within 24-36 hrs,33% of the patients aborted within 24 hrs. There was no definite correlation between period of Gestation & induction –abortion interval.

**Conclusion:** The combined use of vaginal Misoprost and extra amniotic rubber catheter is more effective, well tolerated, less expensive and superior to vaginal misoprost alone in second trimester MTP up to 20weeks.

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