



Misoprostol Versus 15 Methyl PGF2 Alpha for Mid-trimester Medical Abortion of Pregnancy

KEYWORDS

Midtrimester MTP, Misoprostol, 15 methyl PGF2 alpha

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ABSTRACT *OBJECTIVE* : Progesterone derivatives in various forms and dosages have been used for early second trimester abortions. But still a standard protocol has not been devised. Keeping this in mind this study was carried out in Kasturba Hospital on patients coming for mid-trimester termination of pregnancy between 13 to 20 weeks of gestation.

METHODOLOGY : Group I included 20 patients who received vaginal misoprostol 400 microgram every 3 hours to a maximum of 5 doses.

Group II included 20 patients who received 15 methyl PGF2 alpha 250 micrograms every 3 hours.

Parameters observed were- induction abortion interval, incidence of incomplete abortion, adverse effects of drugs and success rate.

RESULTS : In-group I, 18 out of 20 patients, aborted within 48 hours, with a mean induction abortion interval of approximately 13 hours as compared to Group II in which 16 aborted within 48 hours with mean induction abortion of approximately 17 hours. 17 out of 18 successful cases had complete abortion in group I as compared to 13 out of 16 in group II.

CONCLUSION : The study showed that the use of vaginal Misoprostol for early second trimester abortion resulted in a higher success rate than intramuscular 15 methyl PGF2 alpha and is associated with shorter induction abortion interval. Incidence of incomplete abortion and other side effects reported with misoprostol are also less. Considering good shelf life of vaginal misoprostol, high efficacy, convenience in application, low cost and better patient compliance, it becomes the most suitable drug for mid trimester MTP in our study.

INTRODUCTION:

Despite the recent advances in contraception, termination of pregnancy by medical route and availability of safe and effective methods of termination of pregnancy in first trimester, a lot of women still report in early second trimester for MTP for various indications as approved by MTP act, 1971.

Surgical methods like suction evacuation, which can be safely performed in first trimester may be hazardous in second trimester and are not used.

Various methods like extra amniotic instillation of Ethacridine Lactate and intra-amniotic instillation of urea, hypertonic saline are associated with lower success rate and higher complication rates.

Exploring safer alternatives for mid trimester MTP, Prostaglandin analogues came into picture. Both PGE1 and PG-F2alpha are found to stimulate myometrium. The contractile response is acute and transient. The maximum level of response is dose related. They have been administered through various routes like extra- amniotic, intra-amniotic, intramuscular, oral, vaginal and sublingual.

15 Methyl PGF2 alpha tri-methamine salt is a very potent oxytocic, much more than its parent compound. It resists enzymatic degradation by 15dehydrogenase and is thus active for longer duration. It acts more selectively on myometrium than on gastrointestinal smooth muscles. The major disadvantages are – the need of storage at 2-8 * C, inject able route of administration and its major gastrointestinal side effects of vomiting and diarrhea.

Misoprostol (15 deoxy 16hydroxy 16methyl PGE1) was commercialized in 1987 as an antiulcer medication and its uterotonic use was reported in 1990. Due to its high efficacy, drug stability at room temperature, convenience in application through multiple routes (oral, vaginal, sublingual and per rectal) and low cost it has become very popular as uterine stimulant.

The ideal route of administration and dose of different analogues is still not standardized. Medical scientists are still in search of an agent to induce such an abortion, which should be safe, effective and inexpensive. Until such an agent is found, the search will continue.

MATERIALS AND METODS:

This study was carried out in the department of Obstetrics and Gynecology of Kasturba Hospital Delhi, on 40 patients between 13 to 20 weeks of gestation who came for midtrimester termination of pregnancy. They were randomly divided into 2 groups after detailed history and examination and informed written consent was taken.

Group I included 20 patients who received vaginal misoprostol 400 microgram every 3 hours to a maximum of 5 doses, monitoring their contractions and onset of labor pains.

Group II included 20 patients who received injection 15 methyl PGF2 alpha 250 micrograms, intramuscularly every 3 hours with a watch on contractions and onset of labor pains.

Injection Metoclopramide (10 mg) intramuscularly one hour and tab Lomotil orally 2 hours prior were given prophylactically before giving the drug and repeated every 6 hourly to avoid vomiting and diarrhea.

The following parameters were taken note of-

- Time of delivery
- Induction- abortion interval.
- Time of expulsion of Placenta It was considered complete if placenta was aborted completely within 1 hour of delivery of fetus.
- Amount of blood loss
- Need for blood transfusion
- Side effects like nausea, vomiting, diarrhea, cramps, rigors and fever.

Outcome of study was monitored in terms of

- Success rate: Abortion within 48 hours of induction
- Induction Abortion interval (the time interval between the time of administration of first dose to the time when fetus aborted.)
- Incidence of Incomplete abortion
- Adverse Effects of drugs

If the patient did not abort for 48 hours method was considered a failure and alternate method of termination of pregnancy was followed

OBSERVATIONS AND RESULTS:

Baseline characteristics like age, parity, period of gestation, religion, socioeconomic background, marital status, and indications of MTP were comparable in both the groups. In-group I, 18 out of 20 patients, aborted within 48 hours, with a mean induction abortion interval of 13 hours (approx.) as compared to Group II in which 16 aborted within 48 hours with mean induction abortion of 17 hours (approx.). 17 out 18 successful cases had complete abortion in group I as compared to 13 out of 16 in group II.

Seemingly the Misoprostol group had better results as compared to Inj. 15 M PGF 2alpha but there is no statistically significant difference between the two groups.

The failure cases were given syntocinon infusion in escalating doses and there was 100% cumulative success rate in both groups.

There was no statistically significant difference in side effects and complications in both groups. No serious complications were noted in any patient. Gastrointestinal symptoms were the main side effects. One patient in-group I had to be readmitted due to fever and was managed with anti malarial. One patient in group II was readmitted due to hemorrhage, which was managed by D&E.

TABLE I: Baseline Characteristics and Results of induced abortion in Misoprostol Vs Inj. 15 M PGF 2alpha

S. No.	Characteristics	Group I	Group II	P value
1	AGE (mean+/-S.D.)	23.25+/-4.89	24.85+/-4.51	0.353 (Not significant)
2	Parity (mean+/-S.D.)	2.35+/-1.27	2.4+/-1.19	0.905 (Not significant)

3	POG (weeks) (Mean+/-S.D.)	16.45+/-1.7	16.35+/-2.03	0.801 (Not significant)
4	Marital status Married Unmarried	85% 15%	90% 10%	(Not significant)
5	Success Rate	90%	80%	0.7843 (Not significant)
6	Induction Abortion Interval (mean+/-S.D.)	13.81+/-9.87	17.31+/-1.75	0.081 (Not significant)
7	Placental expulsion Complete Incomplete	94.44% 05.56%	81.25% 18.75%	0.561 0.546 (Not significant)
8	Side effects Nausea Vomiting Diarrhea Pyrexia Hemorrhage	40% 20% 15% 5% 0	50% 25% 10% 5% 5%	0.102 (Not significant)
9	Stay in Hospital (Mean+/-S.D.)	2.35+/-0.67	2.55+/-0.75	0.428 (Not significant)
10	Readmission	5%	5%	(Not significant)

DISCUSSION:

Ideally, midtrimester abortion should not be necessary. If unwanted pregnancy should occur, it should be diagnosed and terminated well before second trimester. Unfortunately patients still present in early second trimester for MTP for reasons like malformed baby detected in anomaly scan done in second trimester. Even for IUD it may be necessary to terminate in this period. There is a need for a method, which is effective, convenient, has shorter induction abortion interval, is free of side effects and complications, and is cost effective.

Prostaglandins are very effective oxytocic as compared to the conventional syntocinon, at all periods of gestation.

Both 15 methyl PGF 2 alpha and misoprostol have been used in different doses in various studies.

Table 2: 15 methyl PGF2alpha for mid trimester abortion

Study	Dose	No. of Patients	Success Rate	Induction abortion interval	Retained placenta
Our Study	250 ugm every 3 hrs	20	80%	17.31+/-1.75	18.75%
WHO task force (1977)	200ugm then 300ugm every 3 hrly	412	80%		
Lange (1977)	250ugm every 2 hrs	59	87%	16.4+/-7.3	
Laursen (1974)	250ugm then 250ugm then 500ugm 2 hrly	30	86%	15.98	14.29%

Table 3: Misoprostol for mid trimester abortion

Study	Dose	No. of Patients	Success Rate	Induction abortion interval	Re-tained placenta
Our Study	400ugm 3 hourly vaginally	20	90%	13.81+/- 9.87	05.56%
Herbutya(2005)	600 ugm 6 hourly	140	94%	15.8	27.86%
Tang(2004)	400ugm 3hourly	112	95%	10.5	15%
Langer et al (2004)	800µg vaginal + 400µg 3 hourly orally x 3 times		98%	12.7 ± 8	25%

CONCLUSION:

From our study it was concluded that the use of vaginal Misoprostol for early second trimester abortion resulted in a higher success rate than intramuscular 15 methyl PGF2 alpha and is associated with shorter induction abortion interval. Incidence of incomplete abortion and other side effects reported with misoprotol are also less. With its good shelf life high efficacy, convenience in application and low cost and better patient compliance, it becomes a drug of choice for mid trimester MTP. However studies on larger sample size should be conducted for better conclusive results.

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