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THE STUDY OF COMPARISION OF SUBLINGUINAL VERSUS VAGINAL 25 MICRO GRAM OF MISOPROSTOL IN THE INDUCTION OF LABOUR AT TERM

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ABSTRACT

Induction of labour is initiation of uterine activity by an independent stimulus to achieve vaginal delivery after 28 weeks of gestation before the onset of spontaneous labour. There are various researches contributed various drugs, hormones and chemical agents for effective cervical ripening and induction of labour. Here is a detail study of 25micro gram of misoprostol drug effectiveness comparison in sublinguinal and vaginal routes for the induction of labour.

KEY WORDS: Induction of labour, misoprostol, sublinguinal and vaginal route.

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INTRODUCTION

Labour is the process by which the products of conception, when they have reached full term or nearing it, are expelled by the mother. World health organization (WHO) defines normal labour as "spontaneous in onset, low risk at the start of labour and remaining so throughout labour and delivery. The infant is born spontaneously in vertex presentation between 37 and 42 completed weeks of pregnancy. After birth, mother and infant are in good condition". A pregnant woman is considered low risk when no risk factors have been identified during antenatal or intrapartum period. Regular painful contractions of the uterus associated with effacement and dilation of cervix after 28 weeks and before 37 completed weeks of pregnancy constitute preterm labour. Induction of labour implies the artificial initiation of uterine activity to affect labour and delivery.Timely induction of labour plays such an important role in the antenatal management of so many problems that it merits consideration as a subject management of so many problems that it merits consideration as a subject in its own merit. The indications for induction have been steadily widened in recent year. The aim of successful induction is to achieve vaginal delivery with a safe maternal and perinatal outcome and to eliminate any anticipated adverse outcome associated with continuation of pregnancy. It should bring about adequate uterine activity sufficient for cervical changes and focal descent to occur without causing hyperstimulation or foetal compromise. The objective of pharmacological induction is to mimic the natural process as closely as possible(1,2,3,4,5).

From the time immemorial Oxytocin and prostaglandins like PGE2 (cerviprime gel) are being used for induction of labour. There is increasing evidence in the literature that PGE1, Misoprostol (zitotec) tablets plays an essential role in initiation and maintenance of parturition in humans.PGE1 analogue Misprostol is stable at temperature it doesn't require storage in refrigerator of parenteral administration. It is an uterotonic agent with a wide range of clinical applications in obstetrics in induction of abortion, cervical ripening, and induction of labour at term.The use of Misoprostol for labour induction with a live fetus was 1st described in 1992 in the pioneering study by Margulies etal, successful induction of labour has been achieved by PGE1 administered orally and vaginally. In 1995, Dr. Jatupol srisomboon from department of Obstetrics and Gynaecology, Faculty of medicine, Chiangmai University, Chiangmal,Thailand achieved 93.7 % success with 100mg Misoprostol induction with vaginal route, Bugulhe et al achieved 92.4 % success rate with induction of labour with vaginal Misoprostol. Successful outcome of spontaneous labour is the result of well co-ordinated interplay between upper segment dominant and contracting, lower segment passive and dilating, Misoprostol is having this properly(4,5). The present study is undertaken to compare the efficacy, safely of sublingual vs. vaginal Misoprostol in induction of labour at term.

MATERIALS AND METHODS

The present study is carried out in Medical college hospital for the period of 2 years recently. In the present study we had selected 100 antenatal women with term gestation admitted in antenatal ward and labour rooms, OPD of Department of Obstetrics and Gynaecology. All these cases were admitted for induction of labour of Misoprostol either by sublingual route or vaginal route. These cases were randomised into Group A and Group B. Group A included the antenatal women receiving 25µgms Misoprostol sublingually. Group B includes the antenatal women receiving 25µgms Misoprostol vaginally in the posterior fornix. The dose is scheduled to be repeated once in every 4 hrs if necessary, that is, if regular uterine contractions have not started within 4 hrs of first dose.

Inclusion Criteria

- Singleton Pregnancy
- Live Foetus

- Cephalic Presentation
- Bishop's Score ≤ 6
- No detectable uterine contractions
- Completed 37 weeks of pregnancy

Exclusion Criteria

- Multiple Pregnancies
- Para ≥ 4
- Malpresentation
- Antepartum Hemorrhage
- Previous uterine scar / Any other uterine surgery.
- Severe oligohydramnious (AFI < 5); ploy hydramnios (AFI > 25cm)
- Non reassuring foetal heart rate pattern
- IUGR
- Cephalopelvic disproportion
- Renal and hepatic disease
- Hypersensitivity to prostaglandins
- Chorioamnionitis of Hyperthermia > 38°c

Procedure

General examination as well as obstetric examination including vaginal examination is done to assess the condition and favorability of cervix. All preliminary baseline investigations like hemoglobin estimation Blood grouping and Rhtyping, urine examination, and blood sugar estimation are done. Specific investigation like ultrasonagraphy for foetal maturity, estimated weight of the baby, amniotic fluid index are done. After recruitment to the study. The antenatal women are randomly assigned to receive Misoprostol tablets either sublingually or vaginally. In our study, out of 100 antenatal women, 50 women received 25µgms Misoprostol tablets sublingually, other 50 women received 25µgms Misoprostol tablets vaginally in the posterior fornix. The dose in scheduled to be repeated once in every 4 hrs if necessary, that is if regular uterine contractions have not started within 4 hrs of first dose. All these cases are recorded in the following proforma.

MONITORING

Foetal and maternal monitoring is done by clinical auscultation of foetal heart rate and uterine contractions by digital palpation. Progress of labour is assessed by abdominal examination which done once in every 30 minutes. Vaginal examination is done once in every 4 hours. Intrapartum events are recorded by maintaining a partogram. If the cervix is found unripe even after 4 hrs, 25µgms of Misprostol tablets is repeated up to a maximum of doses. Oxytocin intravenous infusion is started in cases with infrequent contractions. The dose of Misoprostol is not repeated if foetal heart abnormalities occurred. If labour had not started within 48 Hrs, induction with Misoporstol tablets is abandoned and the cases is considered as failed induction, caesarean section is performed. Uterine Hypertonus is defined as single uterine contraction lasting for greater than 90 seconds. Tachysystole is defined as 6 or more uterine contractions in 10 minutes in two consecutive 10 minutes periods. Hyperstimulation syndrome defined as Tachysystole / hypertonus with non reassuring foetal heart rare tracing. II and III stages of labour are managed as usual, following the standard protocol of the hospital. At birth, weight of the baby and APGAR score of the newborn at 1 minute and 5 minutes are recorded. Patients with LSCS, suture removal is done on 7^{th} postoperative day and patients are discharged on 8^{th} day. Patients are explained to look for symptoms of sepsis like fever, pain abdomen, foul smelling lochia at the time of discharge. They are asked to report to the hospital if she observes any one of the symptoms.

RESULTS

In this study we had selected 100 antenatal women with term gestation admitted in antenatal ward and labour rooms, OPD of Department of Obstertics and Gynaecology of Medical College teaching hospital. All these cases were admitted for induction of labour by Misoprostol either by sublingual route or vaginal route. These cases were divided into Group A and Group B. Group A includes the antenatal women receiving 25µgms Misoprostol sublingually. Group B includes the antenatal women receiving 25µgms Misoprostol Vaginally in the Posterior fornix. The dose is scheduled to

be repeated once in every 4 hrs if necessary, that is, if regular uterine contractions have no started within 4 hrs of first dose. The results of the study were recorded and analyzed as follows,

Table Number 1
Distribution of Cases according to age

Age (Year)	Group – A Sublingual Misoprostol	Group – B Vaginal Misoprostol
16 – 20	29 (58%)	34 (68%)
21 - 25	20 (40%)	13 (26%)
26 – 30	1 (2%)	3 (6%)
Total	50	50

In Group – A in which Misoprostol was used Sublingually for induction of labour 58 percent of antenatal mothers were in the age of 16 – 20 years. In Group – B in which Misoprostol was used Vaginally for induction of labour 68 percent of antenatal mothers were in the age group of 16 – 20 years.

Table Number 2
Distribution of Cases according to Gravida

Gravida	Group A Sublingual Misoprostol	Group B Vaginal Misoprostol
Primi Gravida	35 (70%)	40 (80%)
Second Gravida	14 (28%)	7 (14%)
Third Gravida	1 (2%)	2 (4%)
Fourth Gravida	--	1 (2%)
Total	50	50

In Group A in which Misoprostol was used sublingually for induction of labour 70 percent of antenatal mothes were primigravida, 28 percent are second gravid and 2 percent were third gravida. In Group B in which Misoprostol was used vaginally for induction of labour 80 percent of antenatal were primigravida, 14 percent are second gravida, 4 percent were third gravida and 2 percent were fourth gravida.

Table Number 3
Distribution of Cases according to Gestational Age

Gestational Age	Group A Sublingual Misoprostol	Group B Vaginal Misoprostol
40 – 42	40 (80%)	40 (80%)
37 – 40	10 (20%)	8 (16%)

In Group A in which Misoprostol was used sublingually for induction of labour 80 percent of antenatal mothers belong to 40 – 42 weeks. 20 percent of antenatal women belong to 37 – 40 weeks. In Group B in which Misoprostol was used vaginal for induction of labour 84 percent of antenatal mothers belong to 40 – 42 weeks. 16 percent of antenatal women belong to 37 40 weeks.

Table Number 4
Distribution of Cases according to indication for induction

Induction	Group A Sublingual Misoprostol	Group B Vaginal Misoprostol
Past Dates	29 (58%)	34 (68%)
PROM	8 (16%)	1 (2%)
Mild PIH	10 (2%)	9 (18%)
Severe PIH	1 (2%)	---
Decreased Liquor Quantity (AFI 5 – 10 cms)	2 (4%)	5 (10%)
Excessive liquor Quantity (15 – 20 cms)	--	1 (2%)

In Group A in which Misoprostol was used sublingually for induction of labour 58 percent of antenatal women were induced for past dates. 16 percent were induced for PROM. 22 percent were induced for PIH, 4 percent for decreased liquor quantity. In Group B in which Misoprostol was used vaginally for induction of labour 68 percent of antenatal women were induced for past dates. 2 percent were induced for PROM. 18 percent were induced for PIH, 10 percent for decreased liquor quantity, 2 percent for excessive liquor quantity.

Table Number 5
Distribution of cases in relation to Bishop's score

Bishop's Score	Group A Sublingual Misoprostol	Group B Vaginal Misoprostol
0 – 3	17 (34%)	21 (42%)
4 – 6	33 (66%)	29 (58%)

In Group A in which Misoprostol was used sublingually for induction of labour 34 percent of antenatal mothers belongs to Bishop's Score of 0-3. 66 percent of antenatal mothers belong to Bishop's Score of 4 – 6. In Group B in which Misoprostol was used Vaginally for induction of labour 42 percent of antenatal mothers belongs to Bishop's Score of 0-3. 58 percent of antenatal mothers belong to Bishop's Score of 4 – 6.

Table Number 6
Distribution of Cases according to Total Dosage of Misoprostol

No. of Doses	Total Dosage of Misoprostol	Group A Sublingual Misoprostol	Group B Vaginal Misoprostol
1	25 µgms	19 (38%)	14 (28%)
2	50 µgms	17 (34%)	18 (36%)
3	75 µgms	10 (20%)	12 (24%)
4	100 µgms	1 (2%)	3 (6%)
5	125 µgms	1 (2%)	2 (4%)
6	150 µgms	2 (4%)	1 (2%)

In Group A in which Misoprostol was used sublingually for induction of labour 38 percent of antenatal mothers delivered with single dose, 34 percent and 20 percent of antenatal women delivered with second and third dose respectively. 2 percent of antenatal women delivered with fourth and fifth dose respectively. 4 percent of antenatal women required 6 dose of Misoprostol. In Group B in which Misoprostol was used Vaginally for induction of labour 28 percent of antenatal mothers delivered with single dose, 36 percent delivered with second dose. 24 percent and 6 percent of antenatal women delivered with third and fourth dose respectively. 4 percent of antenatal and 2 percent of antenatal women delivered with fifth & sixth dose respectively. In Group B in which Misoprostol was used vaginally for induction of labour uterine (tachysytole is defined as 6 or more uterine contractions in 10 minutes in two consecutive 10 minute periods) was present in 2 percent of antenatal women.

Table Number 7
Distribution of Cases in Relation to Augmentation of Labour

Method	Group Sublingual Misoprostol	Group B Vaginal Misoprostol
Augmentation with Oxytocin	10 (20%)	14 (28%)
Without Augmentation	40 (80%)	36 (72%)

In Group A in which Misoprostol was used sublingually for induction of labour 20 percent of antenatal women required oxytocin for augmentation of labour. 80 percent of cases did not require oxytocin for augmentation of labour. In Group B in which Misoprostol was used Vaginally for induction of labour 28 percent of antenatal women required oxytocin for augmentation of labour. 72 percent of antenatal women did not require oxytocin for augmentation of labour.

Table Number 8
Distribution of cases in relation to Mode of Delivery

Method of Delivery	Group Sublingual Misoprostol	Group B Vaginal Misoprostol
Labour Normal	31 (62%)	29 (58%)
Outlet Forceps	4 (8%)	2 (4%)
Ventouse	1 (2%)	1 (2%)
Cesarean Section	14 (28%)	18 (36%)
Total	50	50

In Group A in which Misoprostol was used sublingually for induction of labour 62 percent of antenatal women delivered as normal labour. 4 percent of cases delivered with outlet forceps application, 2 percent with ventouse application and 28 percent of cases delivered with cesarean section. In Group B in which Misoprostol was used vaginally for induction of labour 58 percent of antenatal women delivered as normal labour. 4 percent of cases delivered with outlet forceps application, 2 percent with ventouse application, and 36 percent delivered with cesarean section.

Table Number 9
Distribution of Cases in relation to indications of Cesarean Section

Induction	Group Sublingual Misoprostol	Group B Vaginal Misoprostol
Foetal Distress	13 (26 %)	15 (30%)
Failed Induction	1 (2%)	3 (6%)

In Group A in which Misoprostol was used sublingually for induction of labour 26 percent of antenatal women delivered with cesarean section for foetal distress. And 2 percent of cases delivered with cesarean section for failed induction. In Group B in which Misoprostol in used vaginally for induction of labour 30 percent of antenatal women delivered with cesarean section of foetal distress. 6 percent of cases delivered with cesarean section for failed induction.

Table Number 10
Complications of Third stage of Labour

Complication	Group Sublingual Misoprostol	Group B Vaginal Misoprostol
Atonic PPH	1 (2%)	3 (6%)
Traumatic PPH	2 (4%)	2 (4%)

In Group A in which Misoprostol was used sublingually for induction of labour 2 percent of antenatal women had atonic PPH. 4 percent of cases had traumatic PPH. In Group B in which Misoprostol was used vaginally for induction of labour 6 percent of antenatal women had atonic PPH. 4 percent of cases had traumatic PPH.

Table Number 11
Distribution of Cases in Relation to induction Delivery Interval

Induction Delivery Interval (Hrs)	Group Sublingual Misoprostol	Group B Vaginal Misoprostol
<12	28 (56%)	21 (42%)
12 – 24	15 (30%)	23 46%)
>24	7(14%)	6 (12%)

In Group A in which Misoprostol was used sublingually of induction of labour 56 percent of antenatal women delivered with induction delivery interval of less than 12 hours. 30 percent of cases delivered in 12 – 24 hours. 14 percent of cases delivered after 24 hours. In Group B in which Misoprostol was used vaginally for induction of labour 42 percent of antenatal women delivered with induction delivery interval of less than 12 hours. 46 percent of cases delivered in 12 – 24 hours. 6 percent of cases delivered after 24 hours. The test of significance used was chi – square test. Chi – square value for this table is 2.68. P value is 9.21. As the sample size in small, the distribution of cases in relation to induction delivery interval is statistically insignificant.

Table Number 12
Relationship between Gravid and Induction Delivery Interval

Gravida	Average Induction delivery interval (Hrs)	
	Group A Sublingual Misoprostol	Group B Vaginal Misoprostol
Primi Gravida	14.23	14.26
Second Gravida	11.36	15.88
Third Gravida	14.00	20.00
Fourth Gravida	---	7.30

In Group A in which Misoprostol was used sublingually for induction of labour primigravida delivered with average induction delivery interval of 14.23 hours. Second and third gravida delivered with average induction delivery interval of 11.36 hours and 14.00 hours respectively. In Group B in which Misoprostol was used vaginally for induction of labour primigravida delivered with average induction delivery interval of 14.26 hours. Second gravida delivered with average induction delivery interval of 15.88 hours. Third and fourth gravida delivered with average induction delivery interval of 20.00 hours and 7:30 hours respectively. Chi–square value for this table was 3.882, p value was 0.01. As the sample size is small, relationship between gravida and induction delivery interval is statistically insignificant.

Table Number 13
Relationship between Bishop's Score and induction Delivery Interval

Bishop's Score	Average induction delivery interval (Hrs)	
	Group A sublingual Misoprostol	Group B Viginal Misoprostol
0 – 3	17.17	15.75
4-6	11.63	13.72

In Group A in which Misoprostol was used sublingually for induction of labour antenatal women with Bishop's score of 0-3 required 17.17 hours of average induction delivery interval. Antenatal women with Bishop's score of 4-6 required 11.63 hours of average induction delivery interval. In Group B in which Misoprostol was used vaginally for induction of labour antenatal women with Bishop's score of 0-3 required 15.75 hours average induction

delivery interval. Antenatal women with Bishop's score of 4-6 required 13.72 hours of average induction delivery interval. In our study the test of significance used is chi-square test. For this table chi square value is 0.68. p value is 6.64. Hence, there is an insignificant difference statistically between sublingual Misoprostol and Vaginal Misoprostol with an average induction delivery interval in relation to Bishop's score.

Table Number 14
Weight of the Babies

Weight (Kgs)	Group A sublingual Misoprostol	Group B Vaginal Misoprostol
1.5	---	---
1.6- 2.0	2	2
2.1 – 2.5	11	6
2.6 – 3.0	17	22
3.1 – 3.5	19	18
3.6 – 4.0	1	2
Total	50	50

In Group A in which Misoprostol was used sublingually for induction of labour 24 percent of babies were in 2.6 to 3.0 Kg. 28 percent of babies were in 3.1 to 3.5 Kg. In Group B in which Misoprostol was used vaginally for induction of labour 44 percent of babies were in 2.6 to 3.0 Kg. 36 percent of babies were in 3.1 to 3.5 Kg.

Table Number 15
APGAR Score

Time	Range	Group A sublingual Misoprostol	Group B Vaginal Misoprostol
1 Min	8 -10	39(78%)	37(74%)
	5-7	10(20%)	10(20%)
	0-4	1(2%)	3(6%)
5 Min	8-10	49(98%)	48(96%)
	5-7	1(2%)	1(2%)
	0-4	---	1(2%)
Total			

In Group A in which Misoprostol was used sublingually for induction of labour 78 percent of babies had 1 minute APGAR score of 8-10,20 percent of babies had APGAR score of 5-7 and percent of babies have APGAR score of 0-4. In Group B in which Misoprostol was used vaginally for induction of labour 74 percent of babies had 1 minute APGAR score of 8-10,20 percent of babies had APGAR score of 5-7 and 6 percent of babies have APGAR score of 0-4.

In Group A in which Misoprostol was used sublingually for induction of labour 98 percent of babies had 5 minute APGAR score of 8-10 and 2 percent of babies had APGAR score of 5-7. In Group B in which Misoprostol was used Vaginally for induction of labour 96 percent of babies had 5 minute APGAR score of 8-1-,2 percent of babies had APGAR score of 5-7 and 2 percent of babies have APGAR score of 0-4.

Table Number 16
Baby Outcome

Outcome	Group A sublingual Misoprostol	Group B Vaginal Misoprostol
Live	50	48(96%)
Still Birth	---	---
Neonatal death	---	2(4%)
		1. Anomalous Baby with cleft lip, cleft palate and Micrognathia 2. Anomalous Baby with Icthyosis

In Group A in which Misoprostol was used sublingually for induction of labour 100 percent of babies were alive. In Group B in which Misoprostol was used vaginally for induction of labour 96 percent of babies were alive. 4 percent of babies had neonatal deaths. The neonatal deaths were due to major congenital anomalies.

Table 17
Admission to neonatal Intensive Care Unit

Indication	Group A sublingual Misoprostol	Group B Vaginal Misoprostol
Observation	2	3
Birth asphyxia	2	2
Meconium aspiration	1	2
Neonatal Sepsis	--	2
Anomalies		1 (Minor) 2 (Major)

In Group A in which Misoprostol was used sublingually for induction of labour 10 percent of babies were admitted in neonatal intensive care unit. In Group B in which Misoprostol was used vaginally for induction of labour 18 percent of babies were admitted in neonatal intensive care unit.

Table Number – 18
Maternal Complications in Postoperative or Post Natal Period

Maternal Complication	Group A sublingual Misoprostol	Group B Vaginal Misoprostol
Puerperal Pyrexia	2(4%)	3(6%)
Chills and Rigors	1(2%)	1(2%)
Abdominal Wound Infection	---	1(2%)
Episiotomy Infection		1(2%)

In Group A in which Misoprostol was used sublingually for induction of labour 6 percent of mothers had maternal complications in postoperative or postnatal period. In Group B in which Misoprostol was used vaginally for induction of labour 12 percent of mothers had maternal complications in postoperative or post natal period.

DISCUSSION

In present study, we had selected 100 antenatal women with term gestation admitted in antenatal ward and labour rooms, OPD of Department of Obstetrics and Gynaecology of Medical college teaching hospital; cases were admitted for induction of labour my Misoprostol either by sublingual route or vaginal route. These cases are divided into Group A and Group B. Group A includes the antenatal women receiving 25 µgms Misoprostol Group B includes the antenatal women receiving 25 µgms Misoprostol vaginally in the Posterior fornix. The dose is scheduled to be repeated once every 4 hrs if necessary, that is if regular uterine contractions have not started with in 4 hrs of first dose. All these cases were followed up and analyzed. In the study the mean age in antenatal women was 20.66 years, as most of the antenatal mothers belong to this age group. In our study 75 percent of antenatal mothers were Primigravida which was equal to 75 percent in Feitosa et al (6) study. In my study, most common indication for induction is past dates in about 61% which is 44% in Feitosa study. The second most common indication was Hypertensive Disorders of pregnancy in my study.

Dose of Misoprostol

In my study majority of the cases about 38 percent were delivered with single dose of sublingual Misoprostol. In Feitosa et al (6) only 21 percent of antenatal women are delivered with single dose of sublingual Misoptostol.

Study	Total No. of doses of Misoprostol	Delivered with single dose
Feitosa et al (6) Sub Lingual	2.8	21%
Misoprostol (Group A)	2.1	38%

In my study total number of cases of sublingual Misoprostol (Group A) required for delivery were 2.1. In Feitosa et al (6) study, the number of dose of sublingual Misoprostol required for delivery were 2.8 as shown in above table. In my study total number of doses of vaginal Misoprostol (Group B) required for delivery were 2.2, In Bartusevicius etal (7) study and Feitosa et al (6) study the total number of doses.

Study	Number of doses of Misoprostol
Bartusevicius et al (7)	1.3
Feitosa etal (6)	2.6
Present Study Vaginal Misoprostol (Group B)	2.2

Of vaginal Misoprostol required for delivery were 1.3 and 2.6 respectively.

Latent Period

The average latent period in the sublingual Misoprostol (Group A) was 6.07 hours. Where as in the vaginal Misoprostol (Group B) it was 7.26 hours

Augmentation with Oxytocin

In my study, the number of women of women who required Oxytocin for the delivery in sublingual Misoprostol (Group A) were 20 percent, where as in Feitosa et al(6) study it was 35 percent.

Study	Oxytocin Augmentation
Feitosa et al(6)	35%
Sublingual Misoprostol (Group A)	20%

In study, the number of women who required Oxytocin for the delivery in Vaginal Misoprostol (Group B) were 28 percent where as in CN Sheela et al (8)study it was 23 percent.

Study	Augmentation with Oxytocin
CN Sheela et al (8)	23%
A Bartusevicius et al(7)	49%
Present study vaginal Misoprostol (Group B)	28%

Mode of Delivery

In my study 72 percent of antenatal women in sublingual Misoprostol (Group A) were delivered as normal labour which was comparable to 65.5 percent in MORAES et al (9) study. In my study 28 percent of cases of sub lingual Misoprostol (Group A) were delivered with caesarean section. Where as in Feitosa et al(6) study it was 43 percent.

Mode of Delivery	MORAES et al(9)	Feitosa et al(6)	Present Study Sublingual Misoprostol (Group A)
Normal Labour	65.5%	57%	72%
Caesarean Section	34.5%	43%	28%

In my study, 64 percent of antenatal women in vaginal Misoprostol (Group B) were delivered as normal labour which was comparable to 69 percent in Feitosa et al(6) study.

Mode of Delivery	Feitosa etal	Present Study
Laboue Normal	69%	64%
Caesarean Section	30%	36%

In my study maternal side effects like nausea and vomiting in sublingual Misoprostol (Group A) were 4 percent. Where as in Feitosa et al(6) study it was 12 percent. In my study maternal side effects like uterine Hyperstimulation (Tachysystole or Hypertonus with non – reassuring fetal heart) pattern was present in sub lingual misoprostol (Group A) in about 2 percent of cases which was equal to 1.7 percent in MORAES et al(4) group.

Study	Uterine Hyper Stimulation
MORAES et al (9)	1.7%
Feitosa et al(6)	4%
Present study Sublingual Misoprostol (Group A)	2%

In my study maternal side effects like Tachysystole was present in about 4 percent of antenatal women in Vaginal Misoprostol (Group B) which were almost equal to 3.2 percent in MORAES et al(9) study.

Study	Tachysystole
MORAES et al (9)	3.2%
Bartusevicius et al(7)	4.3%
Present study Vaginal Misoprostol (Group B)	4%

Induction Delivery Interval:
In my study average induction delivery interval with sublingual misoprostol (Group A) was 14.44 hours, which is less than that of MORAES et al(9) study of 24 hours and 42 minutes. As most of the cases in my study were in 4-6 apgar score than in the MORAES et al(9) study of 0-3 Apgar.

Study	Average induction Delivery internal (hrs)
MORAES et al(9)	42.42%
Present Study Sublingual Misoprostol (Group A)	14.14

In my study average induction delivery interval in the vaginal Misoprostol (Group B) was 14.74 hours which was almost equal to other studies as given in the table.

Study	Mean induction delivery Interval (hrs)
A Bartusevicius et al(7)	16.7
CN Sheela et al(8)	15.2
Ratna Khatri et al(10)	15.0
Present study Vaginal Misoprostol (Group B)	14.74

In present study number of women delivery within 12 hrs in Sublingual Misoprostol (Group A) were 56 percent, where in Feitosa et al (60 study did was 32 percent. In my study number of antenatal women delivered within 24 hrs in sublingual Misoprostol (Group A) were 86 percent, it was 81 percent in Feitosa etal study.

Study	Number of women delivered	
	Within 12hrs	Within 24 hrs
Feitosa et al(6)	32%	81%
Present Study Sublingual Misoprostol (Group A)	56%	86%

In my study 88 percent of antenatal women in vaginal Misoprostol (Group B) were delivered within 24 hrs. which were almost equal to 79 percent of Feitosa et al(6) study.

Study	Number of women delivered	
	Within 12hrs	Within 24 hrs
Feitosa et al(6)	27%	79%
Bartusevicus et al(7)	13%	76%
Present Study Vaginal Misoprostol (Group B)	42%	88%

Perinatal Outcome

In my study with babies with 5 minute APGAR score >7 in sublingual Misoprostol (Group A) was 2 percent which was less than 3.4 percent in MORAES et al(9) study.

Study	5 minute APGAR score <7
MORAES et al(9)	3.4%
Present study Sub Lingual Misoprostol (Group A)	2%

In my study the number of babies with 5 minute APGAR score <7 in vaginal Misoprostol (Group B) was 2 percent.

Study	5 minute APGAR score <7
MORAES et al (9)	4.8%
F.E.L Feitosa et al(6)	3%
Present study Vaginal Misoprostol (Group A)	2%

Meconium Stained Liquor

In my study 14 percent of babies had Meconium stained liquor in the sublingual Misoprostol (Group A) which were more when compared to 5.2 percent of Moraes et al(9) study.

Study	Meconium Stained liquor
MORAES Filho et al (9)	5.2%
Present study Sublingual Misoprostol (Group A)	14%

In my study 24 percent had meconium stained liquor in vaginal Misoprostol (Group B) which were almost equal to A Bartsevicius et al(7) study of 27 percent.

Study	Meconium Stained liquor
A Bartesevicius et al(7)	27%
Present study Vaginal Misoprostol (Group B)	24%

Admission to Neonatal Intensive Care Unit

In my study 6 percent of babies in sublingual Misoprostol (Group A) were admitted in Neonatal Intensive Care Unit. In my study 18 percent of babies in Vaginal Misoprostol (Group B) were admitted in Neonatal Intensive Care Unit.

Study	Neonatal Intensive Care Unit
A Bartesevicius et al(7)	2.9%
Present study Vaginal Misoprostol (Group B)	18%

CONCLUSION

- The average induction delivery interval was similar in both sublingual Misoprostol and Vaginal Misoprostol in the present study.
- Sublingual Misoprostol has an added advantage over Vaginal Misoprostol in PROM cases.
- Sublingual administration offers an excellent choice to women, particularly to those who were wishing to avoid vaginal administration.
- Sublingual Misoprostol is an effective alternative to vaginal Misoprostol in induction of labour

- However, Sublingual route of administration was associated with higher incidence of Hyperstimulation.
- More studies and trails are needed to use Sublingual Misoprostol in future for induction of labour. Therefore use the Sublingual Misoprostol for induction of labour with caution.

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