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Research Article

A Comparative Study Using Combination of Mifepristone and Misoprostol and Single Drug Misoprostol Only For Second Trimester Abortion

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Abstract: The objective of the study was to compare induction abortion interval with Mifepristone and Misoprostol combination (Group A), and with single drug Misoprostol only (Group B), to evaluate completeness of abortion and to assess the safety of drugs for second trimester abortion. Women in need of second trimester abortion divided into two groups randomly. Group A received Tab Mifepristone 600mg orally on empty stomach. After 24 hrs, 600 µg Tablet Misoprostol was placed vaginally. Then every 4th hourly 400 µg Misoprostol Tablet was placed vaginally upto a maximum of five doses including the first dose. Group B received tablet misoprostol as mentioned in group A, without prior tab Mifepristone. There was a significant difference in the Induction Abortion Interval (IAI) in both the groups. The mean IAI of 8.25 hours for Group A, where as in Group B IAI is 10.99 hours.(P=0.006). There was also a difference in the success rates in both the groups but was not statistically significant (p=0.301). The success rate is 96.7% in Group A and 90% in Group B. Side effects are more in Group B than Group A(nausea, vomiting, diarrhea, shivering, headache, bleeding, fever, pain). In conclusion, Mifepristone followed by misoprostol is found to be more effective, and has a shorter IAI and fewer side effects for second trimester abortion compared to misoprostol alone.
Keywords: Abortion, Mifepristone, Misoprostol

INTRODUCTION

Second trimester abortions constitute 10-15% of all induced abortions worldwide. Two-thirds of major abortion-related complications and half of abortion related mortality occur in second trimester abortion [1]. During the last decade, medical methods for second trimester induced abortion have improved considerably and become safe and more accessible. Although the majority of abortions are performed in the first trimester, there is still a gradual increase in second-trimester abortion because of the wide scale introduction of prenatal screening programs detecting women whose pregnancies are complicated by serious fetal abnormalities such as cardiovascular and skeletal malformation.The present study compares a combination of mifepristone and misoprostol and single drug misoprostol alone for second trimester abortion.

Aims and objectives of the study

- To compare Induction Abortion Interval:
  - With mifepristone and misoprostol combination.
  - With misoprostol alone.
- To evaluate completeness of abortion.
- To assess the safety of drugs.

MATERIAL AND METHODS

Source of Data

Women attending KIMSH&RC Bangalore in need of second trimester abortion i.e., 12 -20 weeks of pregnancy were taken up for study.

Study Design

Prospective Comparative randomized clinical trial.

Sample Size

60 total cases.

Group A - 30 women with Mifepristone and Misoprostol combination

Group B - 30 women with Misoprostol alone

Study Place

Department of Obstetrics and Gynaecology, Kempegowda Institute of Medical Sciences and Research Centre, Bangalore

Inclusion Criteria

12-20 weeks of pregnancies (as per definition of second trimester abortion by MTP Act 1971) that

fulfilled indications of MTP, as per guidelines of MTP Act of 1971.

- If the pregnancy would involve a risk to the life of the pregnant woman or of the grave injury to her physical or mental health.
- If there is substantial risk, that if the child were born, it would suffer physical or mental abnormalities as to be seriously handicapped.
- Pregnancy caused by rape.
- Pregnancy resulting from contraceptive failure.

Exclusion Criteria

- Scarred Uterus.
- Ectopic Pregnancy.
- Grand Multipara.
- Contraindications to Misoprostol and Mifepristone.

Investigations

The following routine investigations were done in all subjects who were subjected for the study.

- Routine blood investigations – Hb , PCV , BT ,CT.
- Urine analysis – routine
- Blood grouping and typing
- Blood sugar
- HIV with consent, HBsAg, VDRL
- Ultrasonography

Methods

The study was approved by ethical committee, KIMSH&RC, Bangalore. 12-20 weeks of pregnancies (as per definition fulfilled indications for MTP, as per guidelines of MTP Act of 1971) were included in the study. After confirmation of gestational age by ultrasound, and after written informed consent medications were given for termination of pregnancy

Group A: Thirty randomly selected cases received Tablet Mifepristone 600mg orally on an empty stomach. After 24 hrs, 600 µg Tablet Misoprostol was placed vaginally. Then every 4^{th} hourly 400 µg Misoprostol Tablet was placed vaginally upto a maximum of five doses including the first dose.

GROUP B: Thirty randomly selected cases received tablet Misoprostol as mentioned in Group A, without prior tablet Mifepristone. Maternal side effects of drugs were observed and treated accordingly. Both groups received Inj TT. If patient was Rh negative inj anti D 300 µg was given intramuscularly.

Success: was defined as complete expulsion of products of conception within 24 hrs of the first dose of misoprostol.

Failure: was defined as incomplete or no expulsion of products of conception within 24 hrs of first dose of misoprostol.

Induction Abortion Interval (IAI)

Time period between first doses of misoprostol to the complete expulsion of products of conception. Completeness of abortion was confirmed by USG (when no products of conception are seen in the uterine cavity) scan after one week of abortion as check curettage was not done.

Statistical Methods

Descriptive statistical analysis has been carried out in the present study. Results on continuous measurements are presented on Mean ± SD (Min-Max) and results on categorical measurements are presented in Number (%). Significance is assessed at 5 % level of significance. Chi-square and Fisher Exact test has been used to measure the significance categorical outcome between two groups while the student "t" test (two tailed, independent) has been used to measure the significance of Induction abortion interval (hrs) between two groups.

Consent

The details of the study were explained to the pregnant mothers. Informed consent was taken from them before recruitment.

RESULTS

Table 1 shows baseline data of 60 women enrolled in the study. The two groups were comparable in age, parity and gestational age.

Table 1: Baseline Characteristics

Characteristics	Mifepristone followed by misoprostol (Group A) n=30	Misoprostol alone (Group B) n=30	Statistical analysis
Age in years (Mean ± SD)	23.93±5.12	24.23±4.74	p=0.815
Parity			
Primigravida	20(66.7%)	16(53.3%)	p=0.292
Multigravida	10(33.3%)	14(46.7%)	
Gestational age in weeks (Mean ± SD)	17.37±3.07	17.37±2.65	p=1.000

IAI is significantly less in Group A (mean duration 8.25±3.93 hrs) compared to Group B (mean duration 10.99±3.22 hrs).

Table 2: Induction abortion interval (IAI)

IAI (hrs)	Group A	Group B
Range	0.50-17.0	5.50-19.50
Mean ± SD	8.25±3.93	10.99±3.22
95%CI	6.76-9.75	9.71-12.26
Inference	IAI in hours is significantly less in Group A when compared to Group B with t=2.967; P=0.006**	

In Group A success rate was 96.7% compared to 90% in Group B but was not statistically significant.

Table 3: Comparison of completeness of abortion in weeks between groups

Completeness of abortion	Group A		Group B		Total	
	No.	%	No.	%	No.	%
Success	29	96.7	27	90.0	56	93.3
Failure	1	3.3	3	10.0	4	6.7
Total	30	100.0	30	100.0	60	100.0
Inference	Failure cases are more in Group B (6.7%) when compared to Group A (3.3%) but not statistically significant with p=0.301.					

In this study, most common side effect is nausea 96.7% and 100% in Group A and B respectively. All side effects are more in Group B compared to Group A, but statistically not significant except shivering.

Table4: Comparison of side effects between two Groups

Side effects	Group A(n=30)		Group B (n=30)		p value
	No.	%	No.	%	
Nausea	29	96.7	30	100.0	1.000
Vomiting	21	70.0	23	76.7	0.559
Bleeding	1	3.3	2	6.7	1.000
Diarrhea	2	6.7	5	16.7	0.424
Fever	10	33.3	16	53.3	0.118
Pain	13	43.3	18	60.0	0.196
Shivering	15	50.0	27	90.0	0.001**
Headache	1	3.3	2	6.7	1.000

DISCUSSION

This study compared using combination of mifepristone and misoprostol and single drug misoprostol alone for second trimester abortion. Pretreatment with mifepristone optimizes the outcome of vaginal misoprostol for midtrimester termination [2-4].

Mean IAI in Group A is 8.25 hours (95% CI 6.76 – 9.75) compared to 6.9 hours (95% CI 6.1 – 7.8 hours) in the study by Webster *et al.* [5] as mean IAI in one case went upto 17 hours in our study. Mean IAI in Group B is 10.99 hours (95% CI 9.71-12.26) as compared to 14.1 hours in the study by Wong *et al.* [6].

In this study 80% aborted within 12 hours in Group A, compared to 60% in Group B. IAI is significantly less in Group A (mean duration 8.25±3.93hrs) compared to Group B (mean duration 10.99±3.22 hrs). Hence Pretreatment with oral mifepristone reduces IAI.

Success rate in Group A is 96.7 % compared to 94.3% in the study by Webster et al 1996.[5] Success rate in Group B is 90 % compared to 80% in the study by Wong et al 1998.[6] In Group A success rate was 96.7% compared to 90% in Group B but statistically not significant. In this study, most common side effect is nausea 96.7% and 100% in Group A and B respectively. Other side effects are vomiting, diarrhea, fever, pain, and bleeding, head ache and shivering. All side effects are more in Group B compared to Group A , but statistically not significant except shivering. Analgesics used for pain relief and antiemetics for vomiting.

In Group A there was one failure case which was in a Primigravida. There was retained placenta even after 5 doses of misoprostol. Hence, surgical evacuation was done. No postabortal complications.

In Group B there were three failures, all were in Primigravida. Among the three, two cases had a surgical evacuation for retained placenta even after 5 doses of misoprostol. No postabortal complications.

In the third case there was no expulsion of products of conception even after 5 doses of misoprostol. Hence, oxytocin acceleration was done; products of conception were expelled completely after 4

hours of oxytocin infusion. No postabortal complications.

Mifepristone followed by misoprostol protocol has been found to be a more effective regimen for second trimester abortion because of the shorter IAI, lesser failure rate and fewer side effects as compared to the single drug misoprostol only protocol.

CONCLUSION

There are many medical methods available for second trimester pregnancy termination. Medical abortion in second trimester using combination of Mifepristone and Misoprostol appeared to have highest efficacy and shortest abortion time interval.[7] Our study also demonstrated that Mifepristone followed by misoprostol is found to be more effective, has a shorter IAI and fewer side effects for second trimester abortion compared to Misoprostol alone. There was also difference in success rate in both the groups but statistically not significant. The success rate is 96.7% in Group A, 90% in Group B.

REFERENCES

1. World Health Organisation; Medical methods of termination of pregnancy. Geneva, 1997: 871.
2. Cheng L; Termination of 10-16 gestation with mifepristone plus misoprostol: A multicentric randomized clinical trial. Zhonghua Fu Chan Ke Za Zhi, 1999; 34(5): 268-271.
3. Rodger MW, Baird DT; Pretreatment with mifepristone reduced interval between prostaglandin administration expulsion in 2nd trimester abortion. Br J Obstet Gynaecol., 1990; 97(1): 41-45.
4. Mukhopadhyay P, Bag T S, Kyal A, Bhunia A, Saha TK; Second trimester abortion with vaginal misoprostol. Is there any advantage with prior Mifepristone priming? A Comparative study. J South Asian Feder Obst Gynae., 2012; 4(1): 25-27.
5. Webster D1, Penney GC, Templeton A; A comparison of 600 and 200 mg mifepristone prior to 2nd trimester abortion with the prostaglandin misoprostol. Br J Obstet Gynaecol., 1996; 103(7): 706-770.
6. Wong KS, Ngai CSW, Wong AYK, Tang LCH, Ho PC; Vaginal misoprostol compared with vaginal gemeprost in termination of second trimester pregnancy: A randomized trial. Contraception, 1998; 58(4): 207-210.
7. Wildschut, Both MI, Medema S, Thomee E, Wild Lagen MF, Kapp N; Medical methods for midtrimester termination of pregnancy. Cochrane Reviews. The Cochrane collaboration, John Wiley & Sons Ltd., 2011. Available from http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005216.pub2/pdf