Medical Method of Second Trimester Abortion: Mifepristone Plus Misoprostol vs Misoprostol Alone

Bijeta[1], Neelam Nalini[2]

ABSTRACT

Introduction: Second trimester abortions constitute 10–15% of all induced abortions worldwide but are responsible for two-thirds of all major abortion-related complications. Second trimester abortion can be done by surgical or medical method. Surgical abortion mainly dilatation and evacuation is responsible for majority of complications like haemorrhage, perforation and infection. Medical abortion has the potential to reduce these complications. For second trimester abortion misoprostol is widely used. Mifepristone is antiprogesterone and as we know progesterone is the key hormone in maintaining pregnancy, so addition of mifepristone with misoprostol can increase its effectiveness.

Material and Methods: This is a case control study. A total of 120 patients were selected between gestational ages 13 weeks to 20 weeks with various indications for termination of pregnancy. They were divides into two groups (case and control). Case (Group A): Women who received Mifepristone and Misoprostol. Control (Group B): Women who received Misoprostol alone.

Result: In Group A maximum dose of misoprost required in both nulliparous and parous women were 3 while in Group B 13 patients required 4 doses and 2 patients required 5 doses. In group A induction abortion interval was less than 6 hours in 42 women while in group B only 14 women aborted in less than 6 hours. There was no significant difference in adverse effects observed in both groups.

Conclusion: Combining mifepristone with misoprostol significantly increases the effectiveness of medical method of second trimester abortion.

Keywords: Pregnancy, Progesterone, Nulliparous.

INTRODUCTION

Although the majority of abortions are performed in the first trimester, there is still a need for second trimester abortion because of delayed diagnosis of fetal anomalies and failure to recognise an undesired pregnancy in the first trimester, which all contribute to the continuing need for late abortions[1,2]. Second trimester abortions constitute 10–15% of all induced abortions worldwide but are responsible for two-thirds of all major abortion-related complications. Second trimester abortion can be done by surgical or medical method. Surgical abortion mainly dilatation and evacuation is responsible for majority of complications like haemorrhage, perforation and infection. Medical abortion, the termination of pregnancy through the use of a drug or a combination of drugs has the potential to reduce these complications. Combination of mifepristone and misoprostol is approved and widely used for first trimester abortion. For second trimester abortion use of prostaglandins in the form of PGE2 (dinoprostone) gel and PGE1 (misoprostol) tablet is used at most of the health centres[3,4]. Mifepristone, (RU 486, a substitute 19-norethisterone derivative) by blocking the progesterone receptors causes estrogen dominance and results in intrauterine fetal death. Progesterone is a key hormone in maintaining pregnancy by keeping the uterus in a quiescent state. It prevents softening and dilatation of the cervix, reduces PG output from the decidua and suppresses uterine contractions.Thus, the blocking of progesterone receptors by mifepristone results in vascular damage, decidual necrosis and bleeding, which leads to cervical softening, increased uterine sensitivity to PG and conversion of the quiet pregnant uterus into an organ of spontaneous activity with maximal effect at 36–48 hours[5,6]. Addition of mifepristone with the existing regime of second trimester abortion with misoprostol can reduce failure rates and hospital stay.

Aim

1. To compare the efficacy of mifepristone plus misoprostol and misoprostol alone for second trimester abortion.
2. To assess the side effects of both the regimens.

MATERIAL AND METHODS

The present study is a case control study conducted in the department of Obstetrics and Gynaecology, Rajendra Institute of Medical Sciences, Ranchi from December 2015 to March 2016. A total of 120 patients were selected between gestational ages 13 weeks to 20 weeks with various indications for termination of pregnancy. They were divides into two groups (case and control)

Case (Group A): Women who received Mifepristone and Misoprostol.

Control (Group B): Women who received Misoprostol alone.

Inclusion Criteria

1. Gestational age between 13 weeks to 2oweeks.
2. Singleton pregnancy
3. No regular uterine contractions
4. Upto para 4.

Exclusion Criteria

1. Grand multipara

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No. of doses of misoprost (400mcg) required	Group A		Group B	
	Nulliparous (n=18)	Parous (n=42)	Nulliparous (n=18)	Parous (n=42)
1	4	8	3	5
2	10	28	5	12
3	4	6	5	15
4			3	10
5			2	0

Table-1: No. of doses of misoprostol required

Duration	Group A		Group B	
	Nulliparous	Parous	Nulliparous	Parous
<6 hours	12	30	5	9
6-12 hours	6	12	9	23
12-18 hours	0	0	4	10
Total	18	42	18	42

Table-2: Induction abortion interval

Oxytocin augmentation	Group A		Group B	
	No.	Percentage (%)	No.	Percentage (%)
Required	8	13.33	23	38.33
Not required	52	86.67	37	61.67

Table-3: Oxytocin augmentation

Adverse effects	Group A		Group B	
	No.	Percentage (%)	No.	Percentage (%)
Nausea	2	3.33	4	6.67
Vomiting	1	1.67	2	3.33
Diarrhoea	1	1.67	0	0
Fever	2	3.33	3	5
Headache	0	0	0	0
Rigor	3	5	5	8.33
Hypertonicity	0	0	0	0

Table-4: Adverse effects

2. Scarred uterus
3. Multiple pregnancy
4. Known cases of:

- Heart problems such as angina, valvular disease, arrhythmia which can lead to sudden cardiovascular collapse
- Renal, liver or respiratory disease (Bronchial asthma is not a contraindication since Misoprostol is a bronchodilator)
- Current long-term systemic corticosteroid therapy
- Uncontrolled seizure disorder
- Chronic adrenal failure
- Hypersensitivity to Mifepristone/Misoprostol or other prostaglandins
- Inherited porphyrias

Methodology

All eligible patients were explained about the procedure and their written informed consent was taken. Women in the case group were given tablet Mifepristone (200 mg) orally followed by tablet Misoprostol (400 mcg) vaginally after 48 hours which may be repeated every 3 hrs till maximum 5 doses. Women in control group were given tablet Misoprostol (400 mcg) vaginally which may be repeated every 3 hrs till maximum 5 doses.

All the data were collected with the above mentioned methods and entered in to epi info version 3.5.3 and Chi-Square test was applied.

RESULT

There were equal number of nulliparous women and parous women in both the groups. There were 18 nulliparous and 42 parous women in each group. In Group A maximum dose of misoprost required in both nulliparous and parous women were 3 while in Group B 13 patients required 4 doses and 2 patients required 5 doses (table 1). Abortion was complete in both groups. In group A induction abortion interval was less than 6 hours in 42 women while in group B only 14 women aborted in less than 6 hours (table 2). $P<0.05$. In group A 13.33% of patients required oxytocin augmentation while in group B 38.33% of patients required oxyocin augmentation (table 3), $P<0.05$. There was no significant difference in adverse effects observed in both groups. (Table 4)

DISCUSSION

There is ongoing research for a better regime for the safest

method of second trimester abortion, so that morbidity of patients can be reduced. The protocol of combining mifepristone with misoprostol used in this study is according to WHO guidelines[7]. In this study maximum of three dose of misoprost was required in Group A while in group B upto 5 doses of misoprost was required. Similar study was done by Patel U et al[8] and they found that only only two doses of 200mcg misoprost was effective in all patients where prior induction with mifepristone was done but in that study the dose of misoprost was repeated 6 hourly. In more than 50% of patients in group A the induction abortion interval was less than 6 hours. Similar study was done by Nagaria T and Sirmor N[9] and they found that mean induction abortion interval was 6.72 ± 2.26 hours in mifepristone plus misoprost group as compared to 12.29 ± 3.41 h in misoprost only group. Oxytocin augmentation was mainly required in the misoprost only group which was similar to the findings observed by Nagaria T and Sirmor N[9]. In this study there was no significant difference in adverse reaction observed in both groups, however Kranti K Kulkarni[10] in his study found adverse reactions to be more in misoprost only group.

CONCLUSION

Combining mifepristone with misoprostol significantly increases the effectiveness of medical method of second trimester abortion. It also significantly reduces morbidity and hospital stay.

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