MID-TRIMESTER MTP USING ENDOCERVICAL PGE₂ GEL AND SERIAL INTRAMUSCULAR CARBOPROST

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ABSTRACT

60 cases of mid-trimester pregnancy were terminated using endocervical PGE₂ gel (for achieving cervical priming) followed by serial intramuscular injections of carboprost. In this prospective study, 56 cases were multiparae with gestational age varying between 15-22 weeks. The induction-abortion-interval was 8.4h $\pm$ 0.8h with a success rate of 100%. The incidence of incomplete abortion was 5% and check curettage was performed in 16.6% cases. Gastrointestinal side effects were common. Vomiting occurred in 42% cases and diarrhoea in 50%. Febrile morbidity was seen in 8.3% cases. There were no complications of the procedure. The method was highly acceptable to the patients being non-invasive and allowing ambulation throughout. This method of elective mid-trimester abortion is an effective alternative to the other commonly used methods like extra-amniotic ethacridine lactate or intra-amniotic hypertonic saline instillation.

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KEYWORDS: Carboprost; Mid-trimester abortion; PGE₂.

Introduction

Elective termination of second trimester pregnancy is a commonly performed gynaecological procedure. Although several methods have been tried over the years with varying success [1-4], the ideal method for induction of mid-trimester abortion has remained elusive, as indicated by the constant search for newer techniques. An ideal method should be non-invasive, improve the success rate, shorten the induction-abortion-interval (I-A-I), reduce the risk of complications and side effects and should have a high patient acceptability. Ever since prostaglandins have become available for clinical use, the techniques for mid-trimester abortion have centred around preparations of prostaglandins used by different routes [5-9].

The purpose of this study was to evaluate the efficacy of a combination of endocervical PGE₂ gel and serial intramuscular injections of carboprost in bringing about mid-trimester abortion, where the former is intended to provide a salutary effect on the cervical compliance.

Material and Methods

This prospective observational study was carried out at the department of Obstetrics and Gynaecology, Military Hospital Bareilly from July 96 to Dec 98. 60 patients were referred to the department for mid-trimester MTP during this period. Gestational age at the time of presentation was confirmed clinically and sonologically. A thorough pre-operative preparation was done and informed consent was obtained. Patients were hospitalised in the evening. At about 2100 h, instillation of endocervical PGE₂ gel (Dinoprostone 0.5 mg, ASTRA-IDL) was done using a Cuso's

speculum. The nursing staff was instructed to administer analgesia (Inj pentazocine or tab ketorolac) on SOS basis. The next morning, at 0600 h, two tab/cap of loperamide, 1 mg and inj metaoclopramide, 10 mg, were administered intramuscularly to prevent gastrointestinal side effects of prostaglandins. These were repeated after 6 h, or earlier if required. From 0630 h onwards, serial intramuscular injections of carboprost, 250 μ g, (15-methyl-prostaglandin-F_{2a}, Prostodin, ASTRA-IDL) were administered at 2 1/2 h intervals till the abortion process was completed. Analgesia (Inj pentazocine 30 mg IM and inj phenergan 25 mg IM) was administered on SOS basis. Patients were allowed to move about during the procedure. On completion of abortion, products of conception were examined for completeness and check curettage was done as and when considered necessary. Those who failed to abort within 48 h were deemed as failures. The outcome parameters studied were: success rate, I-A-I, incidence of incomplete abortion, side effects, complications and acceptability of the procedure. The last was evaluated through a questionnaire. All data from the study were analysed and compared with other studies on mid-trimester MTP.

Results

Of the 60 cases in this study, 56 were multiparae who were also candidates for sterilization. The commonest indication for abortion was unwanted pregnancy due to failure of contraception. (Table 1) In primigravidae, MTP was indicated for congenital malformations of the fetus or intra-uterine death. The maternal age ranged from 15-38 years with a mean of 27.6 years. The gestational age ranged from 15-22 weeks with a mean of 17 weeks (Table 2).

All 60 cases aborted within 48 h making the procedure 100% successful. The mean I-A-I was 8.4h $\pm$ 0.8 h (Table 3). On an average four injections of carboprost were required till the completion of abortion. It was seen that, unlike in term labour, placental expulsion took longer than 2h from the expulsion of fetus in 32 (53.3%) cases. In 3 cases (5%) placenta was removed digitally and in 10 cases (16.6%) check curettage was performed on suspicion

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TABLE 1
Indication for mid-trimester abortion

Indication	Number (n=60)
Failed contraception, unwanted pregnancy	56
Anencephaly	2
Multiple anomalies	1
Intrauterine death	1

TABLE 2
Gestational age at the time of abortion

Gestational age (in weeks)	Primigravida	Multigravida
15-17	1	38
18-20	2	17
21-22	1	1

TABLE 3
Induction abortion interval (IAI)

Duration (in hours)	Number of cases
0-4	8
4-8	16
8-12	21
12-16	11
16-20	2
20-24	1
> 24	1

TABLE 4
Side effects of the procedure

Side effect	Number of cases	Percentage
Vomiting	25	42%
Diarrhoea	30	50%
Febrile morbidity	5	08%

TABLE 5
Comparison of results with other studies

Authors	Method	Success rate	Mean I-A-I
Bygdeman [8]	(a) Intramuscular PGF _{2a}	84.9%	14.7h
	(b) Vaginal PGE ₂ suppositories	91.9%	14.2h
	(c) Hypertonic saline	80.5%	30.4h
Bolognese and Corson [7]	Vaginal PGE ₂ suppositories+oxytocin	100%	12.7h
WHO Task Force [12,13]	(a) Intramuscular PGF _{2a}	85.7%	14.7h
	(b) Extra-amniotic PGF _{2a}	83.0%	14.1h
Herabutya <i>et al</i> [9]	Endocervical PGE ₂ gel	89.5%	19.6h
Borgida <i>et al</i> [11]	(a) Vaginal PGE ₂ supp	100%	13.5h
	(b) Intramuscular PGF ₂	96%	22.6h
Goyal and Singh	Endocervical PGE ₂ gel + Carboprost	100%	8.5h

of retained placental bits. There were no cases of excessive vaginal bleeding, uterine rupture or cervical lacerations. There were no live births in this study. Gastrointestinal side effects were common. Nausea and vomiting occurred in 25 cases (42%) and diarrhoea in 30 cases (50%). Febrile morbidity was seen in 5 cases (8.3%) where more than six injections of carboprost were required (Table-4). The procedure was well received by the patients for three main reasons: it was short, noninvasive and allowed ambulation. The procedure was found to require less effort compared to other procedures where oxytocin infusion is made for a long time.

Discussion

Success rate and I-A-I from various studies are compared with our results in Table-5. It is evident from this comparison that a combination of endocervical PGE₂ gel and serial carboprost injections yields highest success rate and shortest I-A-I.

In India, extra amniotic instillation of ethacridine lactate followed by oxytocin infusion is a commonly used method of mid-trimester MTP. The I-A-I by this method is 27 h [1]. The procedure is invasive and entails the risk of inciting placental bed bleeding which may necessitate a hysterotomy. Intra-amniotic instillation of hypertonic saline is another popular method. This procedure is also invasive and is occasionally associated with maternal deaths [2,4].

In recent times prostaglandins have found favour with most obstetricians as abortifacients of choice. Different preparations have been tried by different routes.

In our study, we have taken advantage of the softening effect of endocervical PGE₂ gel on the uterine cervix [10]. A compliant cervix readily dilates in response to carboprost induced uterine contractions. This permits a shorter abortion time and minimises the risk of cervical lacerations.

Vomiting and diarrhoea were common side effects in our study but the incidence was less than that reported by earlier workers [5,7]. This decrease in gastrointestinal side effects is probably due to use of prophylactic pharmacotherapy in our series. We agree that patients questioned subsequent to the abortion underestimate these side effects.

Live births is another concern in prostaglandin abortions [11]. In our study we had no live births probably due to the lower gestational age at the time of presentation. Kajanoja *et al* [6] have expressed concern over cervical lacerations in prostaglandin induces abortions. None of our patients had cervical lacerations due to the softening effect of PGE₂ gel.

To conclude, endocervical PGE₂ gel for pre-induction cervical priming forms a valuable adjunct to serial carboprost injections in achieving mid-trimester MTP.

This combination is non-invasive, technically simple, has a high success rate and a short I-A-I. In addition, the procedure is free of complications and has high patient acceptability. Minor gastrointestinal side effects are common when prostaglandins are used but are not distressing.

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