

**STUDY OF SINGLE DOSE CARBOPROST IN TERMINATING PREGNANCY**Sudhavani<sup>1</sup>, J. Rajeshwari<sup>2</sup><sup>1</sup>Consultant Gynaecologist.<sup>2</sup>Associate Professor, Department of Obstetrics and Gynaecology, GMC/GGH, Nizamabad, Telangana.**ABSTRACT****INTRODUCTION**

Medical termination of pregnancy. It also called induced abortion. It is the medical way of getting rid of unwanted pregnancy. Efficacy of the methods in achieving complete abortion is needed.

The aim of the study is to evaluate induction abortion interval when intracervical prostaglandin-E2 gel was followed by carboprost IM injections.

**MATERIALS AND METHODS**

This was a prospective study for a period of 2 years. 50 cases were randomly selected from the patients attending the Gynaecology Outpatient Department seeking termination of pregnancy between 10-14 weeks of gestation. Patients are divided into 3 groups, Group - I: (25) intracervical application of 500 µg PGE<sub>2</sub> gel, Group - II: Study group (25) 500 µg PGE<sub>2</sub> gel was instilled intracervically. After 12 hours, carboprost injections were given intramuscularly at 3<sup>rd</sup> hourly intervals.

**RESULTS**

Results were analysed in both the groups according to age, parity, reason for seeking abortion, preinduction cervical status, cervical dilatation after 12 hours in group I and in group II induction abortion interval, incidence of incomplete abortion and incidence of side effects.

**CONCLUSION**

Carboprost intramuscular injections 3<sup>rd</sup> hourly found to be an effective and safe method of terminating pregnancy with induction abortion interval 19.8 hours in primi and 19.3 hours in multi with a success rate of 100%.

**KEYWORDS**

Carboprost Injections, Hegar's Dilator, Laminaria Tent.

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**BACKGROUND**

Induced abortion signifies voluntary or wilful termination of pregnancy, whether permitted by law or not before viability. The number of pregnancies terminated yearly by induced abortion throughout the world is not definitely known because of inadequate data under registration of abortion and generally unreliable estimates of illegal abortion. It is estimated that 40-60 million abortions are performed in the world each year including 33 million legal abortions. This implies a worldwide abortion rate of 37-55 per 1000 women aged between 15-44 years and a rate of 24-32 abortions per 100 known pregnancies.<sup>1</sup>

In India, the Medical Termination of Pregnancy (MTP) bill was enacted in 1971 and came into force on 1<sup>st</sup> April, 1972. Since then, over 6.38 million termination were effected up to March 1989 under the MTP act. A study on illegal

abortions in rural areas conducted by ICMR (Indian Council of Medical Research) revealed that the extent of illegal abortions (13.5 per 1000 pregnancies) in comparison with legal abortions (6.1 per 100 pregnancies) was still quite high and the trend in the past 12 years could not show a tendency for illegal abortions to decline (ICMR 1989).

- 1) The conditions under which a pregnancy can be terminated under the MTP act, 1972. There are 5 conditions that have been identified in the act.
  - a) Medical - when continuation of pregnancy might endanger the mother's life or cause grave injury to her physical or mental health.
  - b) Eugenic - where there is substantial risk of the child being born with serious handicaps due to physical or mental abnormalities.
  - c) Humanitarian - where the pregnancy is the result of rape.
  - d) Socioeconomic - where actual or reasonably forcible environment whether social or economic could lead to risk of injury to the health of the mother.

The act provides safeguards to the mothers by authorising only a registered medical practitioner having gynaecological and obstetric experience to perform abortion where the gestation period does not exceed 12 weeks.

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However, when pregnancy exceeds 12 weeks and not more than 20 weeks, the opinion of two registered medical practitioners is necessary to terminate the pregnancy.<sup>2</sup>

The study is aimed to evaluate induction abortion interval when intracervical PGE<sub>2</sub> gel was followed by carboprost IM injections, efficacy of the methods in achieving complete abortion, cost effectiveness and acceptability of the method by the patient.

## MATERIALS AND METHODS

Study has been conducted at Gandhi Medical College, Gandhi Hospital, Secunderabad, for a period of 2 years. 100 cases were randomly selected from the patients attending the Gynaecology OP (outpatient) seeking termination of pregnancy between 10-14 weeks of gestation.

A careful clinical history was taken particularly about age, previous obstetric history, last menstrual period and previous menstrual cycles. History of allergy or bronchial asthma was enquired and if present were excluded from the study. Patients with known cardiac, pulmonary, renal, hepatic disease or epilepsy. Patients with uterine anomaly were excluded from study.

Group - I: Study group (25) intracervical application of 500 µg PGE<sub>2</sub> gel was done.

Group - II: Study group (25) 500 µg PGE<sub>2</sub> gel was instilled intracervically. After 12 hours, carboprost injections were given at 3<sup>rd</sup> hourly interval.

A general examination was done. Per speculum examination followed by bimanual examination was done to know the size of the uterus, presence of adnexal masses, length of the cervix, consistency, condition of external os and internal os, haemoglobin estimation, complete urine examination, blood grouping and Rh typing were done. Ultrasonography was done for confirmation of gestational age. Patients with lower genital tract infections were treated with antibiotics prior to MTP.

Patients were admitted and complete case record prepared. Written consent was taken. Tetanus toxoid was given. Patient shifted to MTP room and placed in dorsal position. External genitalia and perineum cleaned with antiseptic solution and draped. Sterile Sims speculum introduced and anterior lip of cervix held with a sponge holder.

### Group I - (Gestational age 10-12 weeks)

Study group- Syringe containing 500 µg of dinoprostone gel attached to its catheter. The catheter is introduced into the cervical canal until the internal os is felt. It is slightly withdrawn and contents of the syringe emptied while slowly withdrawing the catheter. After instillation of the gel, patient is asked to remain supine for at least 30 minutes. Oral antibiotics cap. ampicillin 500 mg 8<sup>th</sup> hourly is started. Onset of symptoms like lower abdominal cramps, bleeding per vaginum noted. After 12 hours, suction evacuation was done. The maximum number of Hegar's dilator that could be passed without resistance prior to suction evacuation was noted. Further dilatation using Hegar's dilator was done only if necessary.

### Group - II: (Gestational age 10-12 weeks)

Patients in study group 500 µg PGE<sub>2</sub> gel was instilled intracervically. In both the groups, pregnancy was terminated by intramuscular injection of carboprost. These injections were started 12 hours after intracervical instillation of PGE<sub>2</sub> gel/laminaria tent insertion and were given at 3<sup>rd</sup> hourly intervals till the patient aborted up to a maximum of 5 injections. Injection Metoclopramide 10 mg IM and 2 tabs of Lomotil were given 1 hour before the first injection of carboprost. Initially, a tent of 0.4 mL (100 ug) was given to check for hypersensitivity. If the patient did not abort within 15 hours of starting the carboprost injection, the treatment was declared as failure and the patient was managed with alternative methods.

Ultrasonography was done after abortion to know the completeness of abortion. Check curettage was done only if necessary. Local examinations was done to exclude cervical tears.

## RESULTS

Results were analysed in both the groups according to age, parity, reason for seeking abortion, preinduction cervical status, cervical dilatation after 12 hours in group I and in group II induction abortion interval, incidence of incomplete abortion and incidence of side effects.

Age in Years	Group - I	Group - II
<20	8 (32%)	6 (24%)
20-30	16 (64%)	17 (68%)
>35	1 (4%)	2 (8%)
Gravidity		
Primi	8 (32%)	7 (28%)
G <sub>2</sub>	4 (16%)	4 (16%)
G <sub>3</sub>	9 (36%)	12 (48%)
G <sub>4</sub> and above	4 (16%)	2 (8%)

**Table 1. Demographic Distribution in Study**

20-30 yrs. is the most common age group for Medical Termination of Pregnancy in our study.

Majority of the women were 3<sup>rd</sup> gravida desiring Medical Termination of pregnancy and sterilisation.

Reasons	Number of Patients
Unmarried	25
Divorce	4
Failure of contraception	11
Not used any contraceptive	60
Total number of cases	100

**Table 2. Reason for Seeking Abortion**

Married couples not using any contraception in the most common reason for unwanted pregnancy.

	Favourable	Moderately Favourable	Unfavourable
Group-I	10 (40%)	7 (28%)	8 (32%)
Group-II	12 (48%)	7 (28%)	6 (24%)

**Table 3. Cervical Condition Before Inducing Abortion**

In primigravida, cervix was firm, long and internal os tightly closed. In multipara, cervix was soft, short and internal os closed.

Gravidity	Group-I	Group-II
<b>Induction Abortion Interval</b>		
Primi	26.5 hours (5)	19.8 hours (7)
G2	24.45 hours (5)	18.85 hours (4)
G3	24.50 hours (13)	19.5 hours (12)
G4 and above	24.4 hours (2)	19.5 hours (2)
<b>Time taken for inducing abortion from the time of carboprost injection</b>		
Primi	14.5 hours (5)	7.8 hours (7)
G2	12.45 hours (5)	6.85 hours (4)
G3	12.5 hours (13)	7.5 hours (12)
G4 and above	12.4 hours (2)	7.5 hours (2)

**Table 4. Inducing Abortion in Groups**

Induction interval is less in study group than in control group.

Time taken for inducing abortion from the time of carboprost injection is significantly less in group-II. (Mean 7.8 hours in Primi, 7.25 hours in Multi. It is less in study group).

Amount of carboprost required to induce abortion is less in group-II.

	Incomplete Abortion	Cervical Tear	Fever	GIT Side Effects
Group-I	8 (32%)	Nil	5 (20%)	7 (28%)
Group-II	6 (24%)	Nil	-	4 (16%)

**Table 5. Incidence of Complications**

In complete abortion, rate is more in Group-II than in study group. Incidence of fever and GIT side effects like vomiting and diarrhoea are more in Group-I.

	Group-I	Group-II
Success Rate	21 (84%)	25 (100%)
Failure Rate	4 (16%)	-

**Table 6. Success Rate and Failure Rate of the Method in Inducing Abortion**

Success rate is 100% in group-II, while it is only 84% in Group-I.

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## DISCUSSION

In this study, 50 cases were randomly selected from the patients seeking Medical Termination of Pregnancy. Criteria for selection was gestational age between 10-14 weeks assessed from the last menstrual period. Bimanual examination confirmed by ultrasonography. Cases were divided into 2 groups depending on the gestational age. Patients subjected for suction evacuation after 12 hrs. The maximum number of Hegar's dilator that could be passed without resistance prior to suction evacuation noted. There is only one trial reported on maternal views with three patients not satisfied in the intravaginal group (61 women) versus two patients in the intracervical group.

In study group, half of the patients have experienced lower abdominal cramping within 30 mts. to one hour and bleeding per vaginum 1-2 hours after instillation of the drug. Four patients have aborted within 12 hours of PGE2 instillation. In 2 patients, it was incomplete abortion and check curettage was done. Mean number of Hegar's dilator that could be passed without resistance was 9-1 (9.4) in primigravida, 10-11 (10.6) in multi.

In control group, mean number of Hegar's dilator that could be passed without resistance was 6-7 (6.8) in primigravida 8-9 (8.4) in multi. Cervical resistance to further dilatation is significantly more in control group. In study group, cervix was soft, supple and easily yielding.

While doing suction evacuation in study group, products were found to be already separated and time taken for suction evacuation was shorter and the amount of blood loss less in the study group.

Other studies have described no reduced risk of caesarean section<sup>3</sup>. Similar to previous studies,<sup>2,3,4,5</sup> FHR changes, which resulted in foetal blood sampling were not different between the two methods of PGE2 administration. Rath W, Kuhn W et al<sup>6</sup> studied the effect of intracervical application of 500 µg PGE<sub>2</sub> gel in primigravida undergoing first trimester medical termination of pregnancy. After 6 hours, the mean dilatation was 7.8±2 mm. Ulmsten U., Ekman G. et al<sup>7</sup> studied the effect of 1 mg PGE2 gel applied intracervically in 40 primigravida undergoing first trimester medical termination of pregnancy. They noted mean Hegar dilatation of 11.18 mm in their study. In the present study, mean Hegar's dilator that could be passed without resistance in primigravida is 9-10 (9.4). This value is slightly higher than the dilatation seen in Rath W, Kuhn W study and is lower compared to Ulmsten U, Ekman G study.<sup>6,7</sup>

Group-II: In study group, intracervical instillation of PGE2 gel was done under aseptic precautions and in control group Laminaria tent inserted under aseptic precaution 12 hours after instillation of PGE2 gel/Laminaria tent insertion carboprost (250 µg) was given intramuscularly at third hourly interval until the patient aborts up to a maximum of 5 injections. Patients who do not abort within 15 hours of starting the carboprost injection, treatment was declared as failure and managed by alternative methods.

Mean induction abortion interval is 19.8 hours in primi and 19.3 hours in multi in study group. Mean induction abortion interval is longer in control group.

Success rate in inducing abortion is 100% in study group. All patients induced with this method have aborted. Success rate in control group is 84%. 4 patients in control group have not aborted and pregnancies were terminated by suction evacuation. Success rate is more in study group. Our study correlates with other studies in literature.<sup>8,9,10,11,12</sup>

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