

# TERMINATION OF PREGNANCY AFTER INTRA AND EXTRA AMNIOTIC INSTILLATION OF PROSTAGLANDIN

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## SUMMARY

Sixty-two cases of medical termination of pregnancy of 10-12 weeks duration with prostaglandin PGF<sub>2</sub> and its analogue 15(s) 15 methyl PGF<sub>2α</sub> are presented. The termination was done both by extra and intra-amniotic route.

In 37 cases 15(s) 15 methyl PGF<sub>2α</sub> 1 Mg. was used as single injection with success rate of about 75%. In the remaining 25 cases prostaglandins used were 15(s) 15 methyl PGF<sub>2α</sub> (2.5 mg 14 cases) and PGF<sub>2α</sub> (50 mg 11 cases). Prostaglandin was used by single injection by intra-amniotic route with success rate of 86%. The technique is simple, the injection abortion interval short, and side effects are mainly in the form of diarrhoea and vomiting.

### Introduction

Prostaglandins have important clinical applications in obstetrics and gynaecology, particularly for the induction of labour and as the method of choice for inducing second trimester abortion. In the sphere of reproduction the best known and most widely studied prostaglandins are prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) and prostaglandin F<sub>2α</sub>.

The exact mechanism of prostaglandin induced abortion is still uncertain. But Csapo's (1974) multistep hypothesis is generally accepted, despite sporadic conflicting results. According to this hypo-

thesis, the evolution of uterine activity following prostaglandin administration results from the lowering sequence of events, direct prostaglandin impact causing myometrial contracture, reduction in uterine blood flow and depression of placental endocrine function, drop in estrogen and progesterone levels, lowering of myometrial reactivity threshold to PGF<sub>2α</sub> and increased endogenous PGF<sub>α</sub> synthesis-self sustaining evolution of uterine activity and reactivity ending in clinical abortion.

### Material and Methods

Sixty-two patients were selected for study, from the women in the age group of 16-44 with pregnancy between 10-20 weeks duration admitted in the obstetrics

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As prostaglandin is contraindicated in conditions like heart disease, respiratory disease, kidney disease and diabetes mellitus the patients suffering from these diseases were excluded from the series.

Prostaglandins were used by two methods by single dose only.

*Extra-amniotic:* Total cases done by this method were 37, Prostaglandin used was 15(s) methyl PGF $\alpha$  = 1 mg contained in 2 ml. ampoule.

*Intra-amniotic method:* Twenty-five were done by intra-amniotic route. Out of 25, in 14 cases prostaglandin used was 15(s) 15 methyl PGF $2\alpha$  = 2.5 mg. (i.e. 2.5 amp.) in the remaining 11 cases prostaglandin F $2\alpha$  (50 mg.) contained in 10 C.C. ampoule was used.

The trial was considered as a failure if abortion did not take place within 48 hours with intra-amniotic or within 36

hours with extra-amniotic route. Expulsion of only foetus or placenta made it incomplete abortion. Failed cases were treated by oxytocin drip, hysterotomy or suction evacuation depending upon the period of gestation.

#### Observation

*Table I:* Shows that out of 62 cases, in 25 cases (15-20 weeks duration) termination was done by intra-amniotic route. Out of which 11 cases were terminated. Out of these 25 cases, 11 were terminated by PGF $2\alpha$  (50 mg.) and 14 by 15(s) 15 methyl PGF $2\alpha$  = (2.5 mg.). In the remaining 37 cases (10-20 weeks) termination was done by 15(s) 15 methyl PGF $2\alpha$  (1 mg.) by extra-amniotic route.

*Table II:* Shows that side effects in intra-amniotic series were in the form of diarrhoea and vomiting. In 44% complaints were of diarrhoea and vomiting both, while diarrhoea only occurred in 16% of the cases; vomiting in 12%. 12%

TABLE I  
Mode of Induction

Total No. of cases	Intra-amniotic prostaglandin (15-20 weeks)		Extra amniotic prostaglandin (10-20 weeks)	
	PGF 2 $\alpha$ (50 mg)	15(s) 15 methyl PGF $2\alpha$ (2.5 mg)	15(s) 15 methyl	(PGF 2 $\alpha$ (1 mg.))
62	11	14	37	

TABLE II  
Side Effects

Side effects	Intra-amniotic series		Extra-amniotic series	
	No. of cases	Percentage	No. of cases	Percentage
Diarrhoea	4	16	12	32
Vomiting	3	12	3	8
Fever	1	4	Nil	0
Headache	1	4	Nil	0
Chest pain	1	4	Nil	0
Dyspnoea	Nil	0	2	5
Diarrhoea & vomiting	11	44	10	27



of the cases complained of fever, headache, chest pain, dyspnoea. Similarly, in extra-amniotic series side effects were mainly diarrhoea and vomiting. Diarrhoea vomiting together occurred in 27%, only diarrhoea in 32% and vomiting in 8%. Only 5% had dyspnoea.

*Table III:* Shows that average induction abortion interval was the same i.e. 15 hours in both routes. But the success rate with 15(s) 15 methyl PGF<sub>2α</sub> was 93% and with PGF<sub>2α</sub> 73% when used extra-amniotically. Success rate was 75% with 15(s) 15 methyl PGF<sub>2α</sub> when used intra-amniotically.

TABLE III  
Induction—Abortion Interval

Induction abortion interval (in hrs.)	Extra-Amniotic 4-27 (15)	Intra-Amniotic 7-23 (15)
Success rate %	73 PGF <sub>2</sub> 98% 15(s) 15 Methyl PGF <sub>2</sub>	75

*Table IV:* In extra-amniotic series, 14% had complete abortion and 86% had incomplete abortion. Out of 8 failure cases, 5 were treated by suction evacua-

tion and rest by hysterotomy. In intra-amniotic group, 86% had complete and 14% had incomplete abortion. Out of 4 failure cases of intra-amniotic, 3 were treated by hysterotomy and 1 by oxytocin infusion.

*Discussion*

Brener *et al* (1972) studied the effect of single dose of PGF<sub>2α</sub> by intra-amniotic route in 40 women, 13-26 weeks pregnant, requiring termination of pregnancy. Twenty-five patients received 10 mg. prochlorperazine intramuscularly to alleviate nausea or vomiting when they requested. Fifteen subjects were given 10 mg. prochlorperazine 30 minutes before PGF<sub>2α</sub> and at 6 hours interval until abortion. 77% of patients aborted within 22 hours and 95% within 48 hours. Thus, the results are quite similar to our series. Mean induction abortion interval was 19.1 hours which was more than that in the present series. In Brener's series, 68% had complete abortion, 28% incomplete abortion and 5% failed to abort within 48 hours. Therefore, we see that the present series

TABLE IV  
Results

Route of Administration	Successful cases				Failed cases					
	Complete abortion		Incomplete abortion		Treated by Evacuation		Treated by			
	No.	%	No.	%	No.	%	Suction evacuation	Hysterotomy	Oxytocin drip	
Extra-amniotic	4	14	25	86	Instrumental Evacuation	8	25	5	3	2 (Failed in both)
Intra-amniotic	18	86	3	14	-do-	4	16	Nil	3	4 (Successful in one)

shows higher incidence of complete abortion i.e. 86%. The side effects like nausea and vomiting were less in Brenner's (1972) series.

Csapo (1974) utilized very high extra-amniotic dose of PGF<sub>2α</sub> (5-10 mg.) to induce abortion. However, the patient has to be premedicated with analgesics and sedatives to reduce the side effects provoked by the massive PGF<sub>2α</sub> therapy.

Hingarani (1974) studied the effect of PGF<sub>2α</sub> in 43 cases. She used the drug in divided doses. The initial dose was 25 mg. And after 6 hours second dose was given by an indwelling catheter. Abortion occurred in 86% of the cases within 48 hours with mean induction abortion interval of 20 hours. In this series 15 (s) 15 methyl PGF<sub>2α</sub> was given by single injection with success rate of 75% and mean induction abortion interval of 15 hours.

Bygdeman *et al* (1975) by a clinical study of cases between 13-16 weeks duration by single injection of 15 methyl PGF<sub>2α</sub> (730 micro gram) showed suc-

cess in more than 80% of the cases. Injection-abortion interval was 13.6 hours. There was an average 1.5 episodes of vomiting and diarrhoea per abortion trial in both sides. The results of Bygdeman is very close to those of the series.

The clinical results using the same abortion method differ considerably due to variations in technical performance of the procedure. A comparison of two different abortion methods require therefore that a randomised study is conducted in the same institution by the same personnel.

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